TULARE COUNTY
RESOURCE MANAGEMENT AGENCY

5961 South Mooney Boulevard
Visalia, CA 93277

VISALIA LANDFILL – COMPOST AND BIOMASS CONVERSION FACILITY

Draft Focused Environmental Impact Report
SCH# 2021020054

December 2021

Prepared by Crawford and Bowen Planning for:

Tulare County Resources Management Agency
Economic Development and Planning Branch
Environmental Planning Division

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Executive Summary

This Draft Focused Environmental Impact Report (Draft Focused EIR, Draft EIR, DEIR, or EIR) concludes that the proposed Visalia Landfill – Compost and Biomass Conversion Facility Project (Project), is consistent with the corresponding Visalia Landfill Master Development Plan (Visalia Landfill EIR, SCH# 2000051098) certified by the Board of Supervisor (Board) on October 23, 2001 (including CEQA Findings of Fact, Statement of Overriding Considerations and Mitigation Monitoring and Reporting Program) which is incorporated herein by reference. Further, a Negative Declaration for the Visalia Landfill Waste Management Unit-1 Closure Construction was approved/certified by the Board on September 24, 2013, is also incorporated by reference in its entirety.

The Draft Focused EIR has been prepared consistent with the California Environmental Quality Act (CEQA). Its intent is to inform the public and the Tulare County Board of Supervisors of the potential environmental impacts the proposed Project would have on resources as specified in the CEQA Guidelines. This Draft EIR, in its entirety, addresses and discloses potential environmental effects associated with construction and operation of the proposed Project, including direct, indirect, and cumulative impacts in the following resource areas:

CEQA requires that local government agencies, prior to taking action on projects over which they have discretionary approval authority, consider the environmental consequences of such projects. An Environmental Impact Report (EIR) is a public disclosure document designed to provide local and state governmental agency decision makers with an objective analysis of potential environmental consequences to support informed decision-making. This Draft Focused EIR (State Clearinghouse# 2021020054) has been prepared by Tulare County in accordance with CEQA Guidelines §15120 through §15131 and §15161 regulating EIRs to evaluate the environmental consequences of the Health and Safety Element Update Project, to discuss alternatives to the proposed Project, and to propose mitigation measures that will offset, minimize or avoid identified significant environmental impacts. Pursuant to CEQA Guidelines §15082, the NOP for the proposed Project was circulated for review and comment on February 2, 2021 and circulated for a 30-day comment period ending March 5, 2021. A Scoping Meeting was duly noticed and held on February 18, 2021, at 1:30 p.m. at 5961 South Mooney Boulevard, Visalia, CA, in the Tulare County Resource Management Agency, Conference Room D. No comments were received during this meeting.

PROJECT DESCRIPTION

The Tulare County Solid Waste Department intends to develop and operate a covered aerated static pile (CASP) compost facility to comply with the upcoming SB 1383 regulations. The compost facility will be located on the County's Visalia Landfill property that encompasses approximately 634 acres, of which the compost facility will occupy 36 acres, located in a soil borrow recessed approximately 20 feet below grade. The compost facility will be designed to accept up to 200,000 tons per year (TPY) in increments of 50,000 TPY technology modules and can store up to 200,000 cubic yards on-site of organic material that would have otherwise been landfilled. The compost facility would include installing processing and composting equipment, a 50,000 square foot processing building, compacted compost pads, and a lined pond.

The proposed 2.0 mega-watt (MW) biomass conversion facility will produce electricity, heat and biochar using wood waste as fuel. The facility will utilize approximately 18,000 bone dry tons (BDT) of wood chips per year or 25,000 tons of per year of wet recovered wood waste. The facility is anticipated to produce approximately 20-30 MM BTU of waste heat and approximately 300-600 pounds of biochar per hour and operate 24/7. However; due to maintenance requirements for the equipment it is anticipated that the gas production equipment and internal combustion engine “gensets” will likely operate between 80-90% capacity (or approximately 7,000 and 8,000 hours per year).

PROJECT LOCATION

The proposed Project includes all unincorporated areas within the County of Tulare.

SUMMARY OF CHAPTERS

“Executive Summary” summarizes the findings of this SPEIR and provides a summary of the contents of the SPEIR.

Chapter 1 “Introduction” discusses background information, the scope and organization of this DEIR, opportunity for public participation and agency coordination, known areas of controversy relating to the Project, and commonly used terms in this DEIR.

Chapter 2, “Project Description,” summarizes the overview, objectives, Project, and compliance and monitoring policies.

Chapter 3, “Environmental Setting, Impacts, and Mitigation Measures,” examines the existing conditions and regulatory setting for potential cumulative impacts as a result of the Project. The chapter will conclude that the update to the Project will result in no significant cumulative resource impacts beyond those included in the Recirculated Environmental Impact Report prepared for the Tulare County General Plan 2030 Update.

Chapter 4, “Cumulative Impacts,” describes 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 potential growth-inducing impacts that may result from the Project. The chapter will conclude that the Project will result in no significant growth-inducing impacts beyond those included in the Visalia Landfill Master Development Plan EIR.

Chapter 5, “Alternatives,” examines three Alternatives to updating the Project.

- Alternative 1 - No-Project Alternative, as required by CEQA. Under this alternative, the compost and biomass conversion facility will not be developed and landfill operations will continue as they are now currently permitted;
- Alternative 2 - Alternate Site, would relocate the proposed Project to an alternate location rather than the proposed Project site within the existing footprint of the Visalia Landfill; and
- Alternative 3 No Biomass Conversion Facility, would reduce the size of the proposed Project by removing the 2-acre Biomass Conversion Facility.

Chapter 6, "Growth-Inducing Impacts," discusses economic, social and growth inducing effects of the Project.

Chapter 7, "Significant and Irreversible Environmental Changes," are examined as required by CEQA.

Chapter 8, "Mitigation Monitoring and Reporting Program," lists mitigation measures recommended in the draft EIR for the proposed Project and identifies monitoring and reporting requirements.

Chapter 9, "Supplemental Program EIR Preparation," lists key persons from the County of Tulare that contributed to preparation of the Draft Focused EIR as follows: the sitting Tulare County Board of Supervisors, Tulare County Resource Management Agency Director, Economic Development and Planning Branch Director, Chief Environmental Planner, and Environmental Planning Division staff, and Public Works Staff. The administrative Draft EIR was prepared by Crawford & Bowen Planning, Inc.

This Draft Mitigation Monitoring and Reporting Program (MMRP) has been prepared in compliance with State law and based upon the findings of the Draft Environmental Impact Report (EIR) for the proposed Project. The MMRP lists mitigation measures recommended in the draft EIR for the proposed Project and identifies monitoring and reporting requirements. Below is Table ES-1 which identifies mitigation measures for the proposed Project:

Table ES-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Conducting Monitoring / Reporting	Verification of Compliance		
3.1 Air Quality							
3.1-1 The Tulare County Solid Waste Department shall mitigate 29.44 TPY (or other amount determined by the SJVUAPCD) of VOC emissions through the use of NSR requirements for ERCs (or other means acceptable to the SJVUAPCD), to ensure criteria pollutant thresholds are not exceeded.	Prior to and during construction-related activities. On-going for operations-related activities.	Applicant receives applicable Air District approvals/permits	County of Tulare Solid Waste Division / Planning Department	County of Tulare Solid Waste Division			
3.2 BIOLOGICAL RESOURCES							
Swainson's hawk							
3.2-1 *Temporal Avoidance.* In order to avoid impacts to nesting birds, construction activities in the rural zone will occur, where possible, outside the nesting season, typically defined as March 1-September 15.	Prior to start of construction.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable.	County of Tulare Solid Waste	County of Tulare Solid Waste			
3.2-2 *Pre-construction Surveys*. If construction activities in the rural zone must occur between March 1 and September 15, a qualified biologist will conduct preconstruction nest surveys for Swainson's hawks on and within ½ mile of the work area within 30 days prior to the start of	Prior to construction-related activities.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable	County of Tulare Solid Waste	Qualified biologist.			

Table ES-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Conducting Monitoring / Reporting	Verification of Compliance		
construction. The survey will consist of inspecting all accessible, suitable trees of the survey area for the presence of nests and hawks.							
3.2-3 *Avoidance of Active Nests.* Should any active Swainson's hawk nests be discovered within the survey area, the observation will be submitted to the CNDDB, and an appropriate disturbance-free buffer will be established around the nest based on local conditions and agency guidelines. Disturbance-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently	Prior to construction-related activities.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable	County of Tulare Solid Waste Division	Qualified biologist.			
Burrowing Owl							
3.2-4 *Pre-construction Surveys).* A pre-construction survey for burrowing owls will be conducted by a qualified biologist within 30 days of the onset of project-related activities involving ground disturbance or heavy equipment use. The survey area will include all suitable habitat on and within 500 feet of project impact areas, where accessible	Prior to construction-related activities.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable	County of Tulare Solid Waste Division	Qualified biologist.			
3.2-5 *Avoidance of Active Nests.* If pre-construction surveys and subsequent project activities are undertaken during the breeding season (February 1-August 31) and active nest burrows are located within or near project impact areas, a 250-foot construction setback	Prior to construction-related activities.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable	County of Tulare Solid Waste Division and CA Dept. Fish and Wildlife (CDFW)	Qualified biologist.			

Table ES-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	**Monitoring Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Conducting Monitoring / Reporting**	**Verification of Compliance**		
will be established around active owl nests, or alternate avoidance measures implemented in consultation with CDFW. The buffer areas will be enclosed with temporary fencing to prevent construction equipment and workers from entering the setback area. Buffers will remain in place for the duration of the breeding season, unless otherwise arranged with CDFW. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described below.							
3.2-6 *Passive Relocation of Resident Owls.* During the non-breeding season (September 1-January 31), resident owls occupying burrows in project impact areas may be passively relocated to alternative habitat in accordance with a relocation plan prepared by a qualified biologist. Passive relocation may include one or more of the following elements: 1) establishing a minimum 50 foot buffer around all active burrowing owl burrows, 2) removing all suitable burrows outside the 50 foot buffer and up to 160 feet outside of the impact areas as necessary, 3) installing one-way doors on all potential owl burrows within the 50 foot buffer, 4) leaving one-way doors in place for 48 hours to ensure owls have vacated the burrows, and 5) removing the doors and excavating the remaining burrows within the 50 foot buffer.	Prior to construction-related activities.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable	County of Tulare Solid Waste Division and CDFW	Qualified biologist.			

Table ES-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Conducting Monitoring / Reporting	Verification of Compliance		
San Joaquin kit fox							
3.2-7 *Pre-construction Surveys.* Pre-construction surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance, construction activities, and/or any project activity likely to impact the San Joaquin kit fox. These surveys will be conducted in accordance with the USFWS *Standard Recommendations*. The primary objective is to identify kit fox habitat features (e.g.; potential dens and refugia) on the project site and evaluate their use by kit foxes through use of remote monitoring techniques such as motion-triggered cameras and tracking medium. If an active kit fox den is detected within or immediately adjacent to the area of work, the USFWS and CDFW shall be contacted immediately to determine the best course of action.	Prior to initiation of construction	Issuance of building permit	County of Tulare Solid Waste Division and CDFW	Qualified biologist			
3.2-8 *Avoidance.* Should a kit fox be found using any of the sites during preconstruction surveys, the project will avoid the habitat occupied by the kit fox and the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified.	Prior to and during construction	Issuance of building permit	County of Tulare Solid Waste Division and CDFW	County of Tulare Solid Waste Division & Qualified biologist			
3.2-9 *Minimization*. Construction activities shall be carried out in a manner that minimizes disturbance to kit foxes. Minimization measures include, but are not limited to: restriction of project-related vehicle traffic to established roads, construction areas, and other designated	Prior to and during construction	Issuance of building permit	County of Tulare Solid Waste Division and CDFW	County of Tulare Solid Waste Division & Qualified biologist			

Table ES-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	**Monitoring Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Conducting Monitoring / Reporting**	**Verification of Compliance**		
areas; inspection and covering of structures (e.g., pipes), as well as installation of escape structures, to prevent the inadvertent entrapment of kit foxes; restriction of rodenticide and herbicide use; and proper disposal of food items and trash.							
3.2-10 *Employee Education Program*. Prior to the start of construction the applicant will retain a qualified biologist to conduct a tailgate meeting to train all construction staff that will be involved with the project on the San Joaquin kit fox. This training will include a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during project construction and implementation.	Prior to initiation of construction	Issuance of building permit	County of Tulare Solid Waste Division and CDFW	County of Tulare Solid Waste			
3.2-11 *Mortality Reporting.* The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified in writing within three working days in case of the accidental death or injury of a San Joaquin kit fox during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.	During construction	Issuance of building permit	County of Tulare Solid Waste Division and CDFW	County of Tulare Solid Waste Division & Qualified biologist			

Table ES-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Conducting Monitoring / Reporting	Verification of Compliance		
3.3 CULTURAL RESOURCES							
3.3-1 In the event that archaeological or paleontological resources are discovered during site excavation, the County shall require that grading and construction work on the project site be immediately suspended until the significance of the features can be determined by a qualified archaeologist or paleontologist. In this event, the property owner shall retain a qualified archaeologist/paleontologist to make recommendations for measures necessary to protect any site determined to contain or constitute an historical resource, a unique archaeological resource, or a unique paleontological resource or to undertake data recover, excavation analysis, and curation of archaeological or paleontological materials. County staff shall consider such recommendations and implement them where they are feasible in light of Project design as previously approved by the County.	During construction	Daily or as needed throughout the construction period if suspicious resources are discovered	County of Tulare Solid Waste Division via field evaluation of the resource finds by a qualified archaeologist	A qualified archaeologist shall document the results of field evaluation and shall recommend further actions that shall be taken to mitigate for unique resource or human remains found, consistent with all applicable laws including CEQA.			
3.3-2 The project proponent shall avoid and minimize impacts to paleontological resources. If a potentially significant paleontological resource is encountered during ground disturbing activities, all construction within a 100-foot radius of the find shall immediately cease until a qualified paleontologist determines whether the resources requires further study. The owner shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. The	During construction	Daily or as needed throughout the construction period if suspicious resources are discovered	County of Tulare Solid Waste Division via field evaluation of the resource finds by a qualified archaeologist	A qualified archaeologist shall document the results of field evaluation and shall recommend further actions that shall be taken to mitigate for			

Table ES-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Conducting Monitoring / Reporting	Verification of Compliance		
paleontologist shall notify the Tulare County Resource Management Agency and the project proponent of the procedures that must be followed before construction is allowed to resume at the location of the find. If the find is determined to be significant and the Tulare County Resource Management Agency determines avoidance is not feasible, the paleontologist shall design and implement a data recovery plan consistent with applicable standards. The plan shall be submitted to the Tulare County Resource Management Agency for review and approval. Upon approval, the plan shall be incorporated into the project.				unique resource or human remains found, consistent with all applicable laws including CEQA.			
3.3-3 Consistent with Section 7050.5 of the California Health and Safety Code and (CEQA Guidelines) Section 15064.5, if human remains of Native American origin are discovered during project construction, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Public Resources Code Sec. 5097). In the event of the accidental [that is, unanticipated] discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken: 1. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:	During construction	Daily or as needed throughout the construction period if suspicious resources are discovered	County of Tulare Solid Waste Division via field evaluation of the resource finds by a qualified archaeologist	A qualified archaeologist shall document the results of field evaluation and shall recommend further actions that shall be taken to mitigate for unique resource or human remains found, consistent with all applicable laws including CEQA.			

Table ES-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Conducting Monitoring / Reporting	Verification of Compliance		
a. The Tulare County Coroner/Sheriff must be contacted to determine that no investigation of the cause of death is required; and b. If the coroner determines the remains to be Native American: i. The coroner shall contact the Native American Heritage Commission within 24 hours. ii. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. iii. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code section 5097.98, or 2. Where the following conditions occur, the landowner or his/her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance. a. The Native American Heritage Commission is unable to identify a							

Table ES-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Conducting Monitoring / Reporting	Verification of Compliance		
most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission. b. The descendant fails to make a recommendation; or c. The landowner or his authorized representative rejects the recommendation of the descendent.							
3.5 GEOLOGY AND SOILS (PALEONTOLOGICAL RESOURCES)							
3.5-1 The property owner shall avoid and minimize impacts to paleontological resources. If a potentially significant paleontological resource is encountered during ground disturbing activities, all construction within a 100-foot radius of the find shall immediately cease until a qualified paleontologist determines whether the resources require further study. The owner shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. The paleontologist shall notify the Tulare County Resource Management Agency and the project proponent of the procedures that must be followed before construction is allowed to resume at the location of the find. If the find is determined to be significant and the Tulare County Resource Management Agency determines avoidance is not feasible, the paleontologist shall design and implement a data recovery plan consistent with applicable standards. The plan shall be submitted to the	During construction activities.	Daily or as needed throughout the construction period if suspicious resources are discovered	County of Tulare Solid Waste Division	County of Tulare Solid Waste Division			

Table ES-1 Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Monitoring Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Conducting Monitoring / Reporting**	**Verification of Compliance**		
Tulare County Resource Management Agency for review and approval. Upon approval, the plan shall be incorporated into the project.							
3.9 TRIBAL CULTURAL RESOURCES							
3.9-1 In the event that historical, archaeological or paleontological resources are discovered during site excavation, the County shall require that grading and construction work on the Project site be immediately suspended until the significance of the features can be determined by a qualified archaeologist or paleontologist. In this event, the property owner shall retain a qualified archaeologist/paleontologist to provide recommendations for measures necessary to protect any site determined to contain or constitute an historical resource, a unique archaeological resource, or a unique paleontological resource or to undertake data recover, excavation analysis, and curation of archaeological or paleontological materials. County staff shall consider such recommendations and implement them where they are feasible in light of Project design as previously approved by the County.	During construction	Daily or as needed throughout the construction period if suspicious resources are discovered	Tulare County Solid Waste Division / Planning Department	A qualified archaeologist shall document the results of field evaluation and shall recommend further actions that shall be taken to mitigate for unique resource or human remains found, consistent with all applicable laws including CEQA.			
3.9-2 Consistent with Section 7050.5 of the California Health and Safety Code and (CEQA Guidelines) Section 15064.5, if human remains of Native American origin are discovered during Project construction, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the	During construction	Daily or as needed throughout the construction period if suspicious resources are discovered	County of Tulare Solid Waste Division	A qualified archaeologist shall document the results of field evaluation and shall recommend			

Table ES-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Conducting Monitoring / Reporting	Verification of Compliance		
jurisdiction of the Native American Heritage Commission (Public Resources Code Sec. 5097). In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken: 1. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until: a. The Tulare County Coroner/Sheriff must be contacted to determine that no investigation of the cause of death is required; and b. If the coroner determines the remains to be Native American: i. The coroner shall contact the Native American Heritage Commission within 24 hours. ii. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely iii. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code section 5097.98, or				further actions that shall be taken to mitigate for unique resource or human remains found, consistent with all applicable laws including CEQA.			

Table ES-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Conducting Monitoring / Reporting	Verification of Compliance		
2. Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance. a. The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission. b. The descendant fails to make a recommendation; or c. The landowner or his authorized representative rejects the recommendation of the descendent.							

Chapter 1
Introduction

PROJECT SUMMARY

The County of Tulare is considering approval of the proposed Visalia Landfill – Compost and Biomass Conversion Facility (Project). The Project would develop and operate a covered aerated static pile compost facility and add a 2.0 mega-watt biomass conversion facility to produce electricity, heat and biochar using wood fuel. The intent of the Project is to comply with the upcoming SB 1383 regulations. The proposed Project would take up a 38-acre portion of the existing 634-acre Visalia Landfill site located at the northeast corner of Avenue 328 and Road 80, approximately one (1) mile north of the City of Visalia.

LOCAL REGULATORY CONTEXT

The Tulare County General Plan Update 2030 was adopted on August 28, 2012. As part of the General Plan, an EIR and an accompanying Background Report were also prepared. The General Plan Background Report contained contextual environmental analysis for the General Plan Update. The Housing Element for 2009-2014 was adopted on May 8, 2012, and certified by State of California Department of Housing and Community Development on June 1, 2012. The Health and Safety Element was amended November 15, 2016, under GPA 16-004.

SCOPE AND METHODOLOGY

An Initial Study was prepared by the County of Tulare which determined that the proposed Project could have potentially significant impacts in the areas of Air Quality, Biological Resources, Cultural Resources, Energy, Geology & Soils, Greenhouse Gases, Hydrology & Water Quality, Transportation, and Tribal Cultural Resources. The County of Tulare, therefore, determined that an EIR would be required for the Project. This EIR is a "Focused EIR" that concentrates on the potentially significant impacts of the project on nine environmental issue areas: Air Quality, Biological Resources, Cultural Resources, Energy, Geology & Soils, Greenhouse Gases, Hydrology & Water Quality, Transportation, and Tribal Cultural Resources. All other impact areas were determined to either have no impact or have a less than significant impact (with or without mitigation). This Focused EIR references the Notice of Preparation (included in Appendix "E") prepared for the Project for all other areas of impact analysis not provided in this Focused EIR

This document addresses environmental impacts to the level that they can be assessed without undue speculation (CEQA Guidelines Section 15145). This *Draft Focused Environmental Impact Report (Draft Focused EIR, Draft EIR, DEIR, or EIR)* acknowledges this uncertainty and incorporates these realities into the methodology to evaluate the environmental effects of the Plan, given its long term planning horizon. The degree of specificity in an EIR corresponds to the degree of specificity of the underlying activity being evaluated (CEQA Guidelines Section 15146). Also, the adequacy of an EIR is determined in terms of what is reasonably feasible, in light of factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project (CEQA Guidelines Sections 15151 and 15204(a)).

CEQA Guidelines Section 15002 (a) specifies that, "[t]he basic purposes of CEQA are to:

(1) Inform governmental decision makers and the public about the potential, significant environmental effects of proposed activities.

(2) Identify ways that environmental damage can be avoided or significantly reduced.

(3) Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.

(4) Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved."[1]

CEQA Guidelines Section 15002 (f) specifies that, "[a]n environmental impact report (EIR) is the public document used by the governmental agency to analyze the significant environmental effects of a proposed project, to identify alternatives, and to disclose possible ways to reduce or avoid the possible environmental damage… An EIR is prepared when the public agency finds substantial evidence that the project may have a significant effect on the environment… When the agency finds that there is no substantial evidence that a project may have a significant environmental effect, the agency will prepare a "Negative Declaration" instead of an EIR..."[2]

Pursuant to CEQA Guidelines Section 15021 Duty to Minimize Environmental Damage and Balance Competing Public Objectives:

"(a) CEQA establishes a duty for public agencies to avoid or minimize environmental damage where feasible.

  (1) In regulating public or private activities, agencies are required to give major consideration to preventing environmental damage.

  (2) A public agency should not approve a project as proposed if there are feasible alternatives or mitigation measures available that would substantially lessen any significant effects that the project would have on the environment.

(b) In deciding whether changes in a project are feasible, an agency may consider specific economic, environmental, legal, social, and technological factors.

(c) The duty to prevent or minimize environmental damage is implemented through the findings required by Section 15091.

(d) CEQA recognizes that in determining whether and how a project should be approved, a public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social factors and in particular the goal of providing a

[1] CEQA Guidelines, Section 15002 (a).
[2] Ibid. Section 15002 (f).

decent home and satisfying living environment for every Californian. An agency shall prepare a statement of overriding considerations as described in Section 15093 to reflect the ultimate balancing of competing public objectives when the agency decides to approve a project that will cause one or more significant effects on the environment."[3]

IDENTIFICATION OF POTENTIALLY SIGNIFICANT IMPACTS

CEQA Guidelines Section 15002 (h) addresses potentially significant impacts, to wit, "CEQA requires more than merely preparing environmental documents. The EIR by itself does not control the way in which a project can be built or carried out. Rather, when an EIR shows that a project could cause substantial adverse changes in the environment, the governmental agency must respond to the information by one or more of the following methods:

(1) Changing a proposed project;

(2) Imposing conditions on the approval of the project;

(3) Adopting plans or ordinances to control a broader class of projects to avoid the adverse changes;

(4) Choosing an alternative way of meeting the same need;

(5) Disapproving the project;

(6) Finding that changes in, or alterations, the project are not feasible.

(7) Finding that the unavoidable, significant environmental damage is acceptable as provided in Section 15093."[4] (See Chapter 7)

This *Draft Focused EIR* identifies potentially significant impacts that would be anticipated to result from implementation of the proposed Project. Significant impacts are defined as a "substantial or potentially substantial, adverse change in the environment."[5] Significant impacts must be determined by applying explicit significance criteria to compare the future plan conditions to the existing environmental setting.[6]

The existing setting is described in detail in each resource section of Chapter 3 of this document and represents the most recent, reliable, and representative data to describe current regional conditions. The criteria for determining significance are also included in each resource section in Chapter 3 of this document.

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[3] Ibid. Section 15021.
[4] CEQA Guidelines. Section 15002 (h).
[5] Public Resources Code. Section 21068.
[6] CEQA Guidelines .Section 15126.2(a).

CONSIDERATION OF SIGNIFICANT IMPACTS

Pursuant to CEQA Guidelines Section 15126.2, "[a]n EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected. For example, an EIR on a subdivision astride an active fault line should identify as a significant effect the seismic hazard to future occupants of the subdivision. The subdivision would have the effect of attracting people to the location and exposing them to the hazards found there. Similarly, the EIR should evaluate any potentially significant impacts of locating development in other areas susceptible to hazardous conditions (e.g., floodplains, coastlines, wildfire risk areas) as identified in authoritative hazard maps, risk assessments or in land use plans addressing such hazards areas."[7]

MITIGATION MEASURES

CEQA Guidelines Section 15126.4 specifies that:

"(1) An EIR shall describe feasible measures which could minimize significant adverse impacts, including where relevant, inefficient and unnecessary consumption of energy.

(A) The discussion of mitigation measures shall distinguish between the measures which are proposed by project proponents to be included in the project and other measures proposed by the lead, responsible or trustee agency or other persons which are not included but the lead agency determines could reasonably be expected to reduce adverse impacts if required as conditions of approving the project. This discussion shall identify mitigation measures for each significant environmental effect identified in the EIR.

(B) Where several measures are available to mitigate an impact, each should be discussed and the basis for selecting a particular measure should be identified. Formulation of mitigation measures should not be deferred until some future time. However, measures may specify performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way.

[7] CEQA Guidelines. Section 15126.2.

(C) Energy conservation measures, as well as other appropriate mitigation measures, shall be discussed when relevant. Examples of energy conservation measures are provided in Appendix F.

(D) If a mitigation measure would cause one or more significant effects in addition to those that would be caused by the project as proposed, the effects of the mitigation measure shall be discussed but in less detail than the significant effects of the project as proposed. (*Stevens v. City of Glendale* (1981) 125 Cal.App.3d 986.)

(2) Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally-binding instruments. In the case of the adoption of a plan, policy, regulation, or other public project, mitigation measures can be incorporated into the plan, policy, regulation, or project design.

(3) Mitigation measures are not required for effects which are not found to be significant.

(4) Mitigation measures must be consistent with all applicable constitutional requirements, including the following:

(A) There must be an essential nexus (i.e., connection) between the mitigation measure and a legitimate governmental interest. *Nollan v. California Coastal Commission*, 483 U.S. 825 (1987); and

(B) The mitigation measure must be "roughly proportional" to the impacts of the project. *Dolan v. City of Tigard*, 512 U.S. 374 (1994). Where the mitigation measure is an ad hoc exaction, it must be "roughly proportional" to the impacts of the project. *Ehrlich v. City of Culver City* (1996) 12 Cal.4th 854.

(5) If the lead agency determines that a mitigation measure cannot be legally imposed, the measure need not be proposed or analyzed. Instead, the EIR may simply reference that fact and briefly explain the reasons underlying the lead agency's determination."[8]

ORGANIZATION OF THE EIR

Executive Summary

The Executive Summary Chapter summarizes the analysis in this Draft Environmental Impact Report.

CHAPTER 1

Provides a brief introduction to the Environmental Analysis required by the California Environmental Quality Act (CEQA).

[8] 2013 CEQA Guidelines, Section 15126.4

CHAPTER 2

Describes the proposed Project. The chapter also includes the objectives of the proposed Project. The environmental setting is described and the regulatory context within which the proposed Project is evaluated is outlined.

CHAPTER 3

Includes the Environmental Analysis in response to each Checklist item that is covered in this EIR. Topics not analyzed in this EIR were discussed and determined to have no or less than significant impacts in the NOP (see Appendix "E"). Within each analysis the following is included:

Summary of Findings

Each chapter notes a summary of findings.

Introduction

Each chapter will begin with a summary of impacts, pertinent CEQA requirements, applicable definitions and/or acronyms, and thresholds of significance.

Environmental Setting

Each environmental factor analysis in Chapter 3 will outline the environmental setting for each environmental factor. In addition, methodology is explained when complex analysis is required.

Regulatory Setting

Each environmental factor analysis in Chapter 3 will outline the regulatory setting for that resource.

Project Impact Analysis

Each evaluation criteria will be reviewed for potential Project-specific impacts.

Cumulative Impact Analysis

Each evaluation criteria will be reviewed for potential cumulative impacts.

Mitigation Measures

Mitigation Measures will be proposed as deemed applicable.

Conclusion

Each conclusion will outline whether recommended mitigation measures will, based on the impact evaluation criteria, substantially reduce or eliminate potentially significant environmental impacts. If impacts cannot be mitigated, unavoidable significant impacts will be identified.

Definitions and/or Acronyms

Some sub-chapters of Chapter 3 will have appropriate definitions and/or acronyms.

References

Reference documents used in each chapter are listed at the end of each sub-chapter.

CHAPTER 4

Summarizes the cumulative impacts addressed in Chapter 3.

CHAPTER 5

Describes and evaluates alternatives to the proposed Project. The proposed Project is compared to each alternative, and the potential environmental impacts of each are analyzed.

CHAPTER 6

Evaluates or describes CEQA-required subject areas: Economic Effects, Social Effects, and Growth Inducement.

CHAPTER 7

Evaluates or describes CEQA-required subject areas: Environmental Effects That Cannot be Avoided, Irreversible Impacts, and Statement of Overriding Considerations.

CHAPTER 8

Provides a Mitigation Monitoring and Reporting Program that summarizes the environmental issues, the significant mitigation measures, and the agency or agencies responsible for monitoring and reporting on the implementation of the mitigation measures.

CHAPTER 9

Outlines persons preparing the EIR and sources utilized in the Analysis.

APPENDICES

Following the text of this *Draft EIR*, several appendices and technical studies have been included as reference material.

ENVIRONMENTAL REVIEW PROCESS

Pursuant to CEQA Guidelines §15082, the Notice of Preparation (NOP) for the Proposed Project was circulated for review and comment on February 2, 2021 and circulated for a 30-day comment period. Tulare County RMA received seven comments on the NOP. Comments were received from the following agencies, individuals, and/or organizations:

- California Department of Fish and Wildlife, March 5, 2021
- California Department of Resources Recycling and Recovery, March 3, 2021
- California Department of Transportation, District 6, February 16, 2021
- Native American Heritage Commission, February 3, 2021
- San Joaquin Valley Air Pollution Control District, March 5, 2021
- Tulare County Agricultural Commissioner, February 4, 2021
- Tulare County Health & Human Services Agency, March 8, 2021

A copy of the NOP is included in Appendix "E", along with copies of letters received in response to the NOP.

Consistent with CEQA Guidelines Section 15103, "Responsible and Trustee Agencies, and the Office of Planning and Research shall provide a response to a Notice of Preparation to the Lead Agency within 30 days after receipt of the notice. If they fail to reply within the 30 days with either a response or a well justified request for additional time, the lead agency may assume that none of those entitles have a response to make and may ignore a late response."[9]

A scoping meeting was duly noticed in a newspaper of general circulation and held on February 18, 2021. No comments were received during this meeting.

Section 15093 of the State CEQA Guidelines requires decision-makers to balance the benefits of a proposed project against any unavoidable adverse environmental effects of the project. If the benefits of the project outweigh the unavoidable adverse environmental effects, then the decision-makers may adopt a statement of overriding considerations, finding that the environmental effects are acceptable in light of the project's benefits to the public.

As noted in CEQA Guidelines § 15105 (a), a Draft EIR that is submitted to the State Clearinghouse shall have a minimum review period of 45 days. This *Draft EIR* was circulated publicly for comment beginning on December 3, 2021. Following completion of the 45-day public review period ending on January 17, 2022, staff will prepare responses to comments and a *Final EIR* will be prepared. The *Final EIR* will then be forwarded to the Tulare County Board of Supervisors for consideration of certification. Following adoption/certification by the Board of Supervisors, a

[9] CEQA Guidelines. Section 15103.

Notice of Determination will then be filed with the County of Tulare County Clerk and also forwarded to the State of California, Office of Planning and Research.

ORGANIZATIONS AND PERSONS CONSULTED

Federal, State, Regional Agencies

1) California Air Resources Board (CARB or ARB)
2) California Department of Conservation (DOC)
3) California Department of Fish and Wildlife Services (CDFW) - Region #4
4) California Department of Transportation (Caltrans) District 6
5) California Department of Toxic Substances Control (DTSC)
6) California Energy Commission (CEC)
7) California Integrated Waste Management Board (CalRecycle)
8) California Native American Heritage Commission (NAHC)
9) California Public Utilities Commission (PUC)
10) California State Water Resources Control Board (SWRCB)
11) Central Valley Regional Water Quality Control Board (RWQCB)– Region #5
12) San Joaquin Valley Unified Air Pollution Control District (SJVAPCD)
13) U.S. Fish and Wildlife Service (USFW)
14) U.S. Naval Facilities Engineering Command (NAVFAC)

Other Agencies

15) City of Visalia
16) Tulare County Agricultural Commissioner and Sealer
17) Tulare County Association of Governments
18) Tulare County Environmental Health and Human Services Agency, Environmental Health Division
19) Tulare County Farm Bureau
20) Tulare County Local Agency Formation Commission
21) Tulare County Office of Emergency Services
22) Tulare County Resource Conservation District
23) Tulare County Resource Management Agency:
    a. Tulare County Fire Warden
    b. Tulare County Flood Control
    c. Planning Branch (Environmental Planning, Project Review, Building and Housing Divisions)
    d. Public Works Branch
24) Tulare County Sheriff's Office
25) Tulare County U.C. Cooperative Extension

Chapter 2
Project Description

INTRODUCTION

In accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, Section 21000 et seq.), the County of Tulare Resource Management Agency (RMA) is preparing this Draft Focused Environmental Impact Report (DEIR or EIR) to evaluate the environmental effects associated with the development of the Visalia Landfill – Compost and Biomass Conversion Facility. The Project would develop and operate a covered aerated static pile compost facility and add a 2.0 mega-watt biomass conversion facility to produce electricity, heat and biochar using wood fuel to comply with the upcoming SB 1383 regulations.

PROJECT LOCATION

As noted earlier, the proposed Project will be located on the existing Visalia Landfill site on an approximately 36.0-acre portion of the site located at the northeast corner of Avenue 328 and Road 80 approximately one (1) mile north of the City of Visalia. The Visalia Landfill site (634 acres) is located entirely within an unincorporated area of Tulare County. Specifically, the proposed Project is located on APN: 077-020-030 with a physical address of 8614 Avenue 328, Visalia, California.

State Route 99 is proximate to the site thereby providing regional access to the proposed Project site via Betty Drive/Riggin Avenue; State Route 198 is located approximately two miles south of the site and could provide direct access via Plaza Drive/Road 80 or via the interchange with SR 99 (see Figure 1).

The site is flat with minimal slope and is currently used as the Visalia landfill. The site is zoned as AE-40 (Exclusive Agriculture-40 Acre minimum) and is proposed to remain as such pending approval of a Special Use Permit, which is the subject matter of this NOP and forthcoming Focused EIR. No expansion of the existing footprint is being proposed. The site is surrounded by intensive agricultural operations. An orchard (currently walnuts) is located north of the landfill property, while row crops are immediately to the east and south (south of Avenue 328). A dairy is located immediately to the west (west of Road 80).

COMPLIANCE WITH ORGANIC WASTE LAWS – UNFUNDED STATE MANDATES

AB 1826 (Chesbro, 2014) phased in mandatory commercial organic waste collection to 2020 following AB 341 (Chesbro, 2011) for mandatory commercial recycling collection; and SB 1383 (Lara, 2016) requires generators with local government and the local haulers within a shared responsibility framework to reduce 50% of all organics by 2020 and to reduce 75% of all organics by 2025 to mitigate methane. AB 876 (McCarty, 2015) requires the County to identify organic processing capacity to 2035 in their Annual Report, where all jurisdictions need to describe the progress made on AB 1826 in their Annual Report. AB 341 and AB 1826 placed the burden of mandatory collection on the generators with a local government planning effort. SB 1383 explicitly shares the responsibility with local government, where CalRecycle may add fines and penalties much like AB 939 (Sher, 1989), but with delayed enforcement until 2024. SB 1383 requires CalRecycle, in consultation with the California Air Resources Board (CARB), to adopt regulations that achieve the specified targets for reducing organic waste in landfills. SB 1383 regulations are slated for approval by CalRecycle in December 2019, becoming effective in 2022. SB 1383 would authorize local jurisdictions to charge and collect fees to recover the local jurisdiction's costs incurred in complying with the regulations.

The total targeted tons for reducing 50% of all organic waste by 2022 and 75% of all organic waste by 2025 for SB 1383 compliance is calculated based on current disposal, using 2014 waste characterization and tonnage amounts as the baseline.

In addition, to satisfy the jurisdiction's requirements under AB 876, the amount of organic waste that is generated up to 2035 was determined. This identifies 15 years of organic waste processing capacity using the CalRecycle Disposal Reporting System and Waste Characterization Studies. Based on the existing permits from CalRecycle's SWIS database, currently there is a maximum of 120,375 tons of identified organics processing capacity in Tulare County using current tons being diverted, mostly green waste and wood waste. This capacity would serve Tulare County's immediate need for 2020's requirements but would need to expand by 2022 to accommodate the new tons diverted when the SB 1383 regulations become effective. Tulare County needs a minimum of 137,000 tons of new capacity in 2022, 167,000 tons of new capacity in 2025, and up to 200,000 tons of new capacity by 2035.

PROJECT DESCRIPTION

The RMA intends to develop and operate a covered aerated static pile (CASP) compost facility to comply with the upcoming SB 1383 regulations. The compost facility will be located on the County's Visalia Landfill property that encompasses approximately 634 acres, of which the compost facility will occupy 36 acres, located in a soil borrow recessed approximately 20 feet below grade. The compost facility will be designed to accept up to 200,000 tons per year (TPY) in increments of 50,000 TPY technology modules and can store up to 200,000 cubic yards on-site of organic material that would have otherwise been landfilled. The compost facility would include installing processing and composting equipment, a 50,000 square foot processing building, compacted compost pads, and a lined pond.

The proposed 2.0 mega-watt (MW) biomass conversion facility will produce electricity, heat and biochar using wood waste as fuel. The facility will utilize approximately 18,000 bone dry tons (BDT) of wood chips per year or 25,000 tons of per year of wet recovered wood waste. The facility is anticipated to produce approximately 20-30 MM BTU of waste heat and approximately 300-600 pounds of biochar per hour and operate 24/7. However; due to maintenance requirements for the equipment it is anticipated that the gas production equipment and internal combustion engine "gensets" will likely operate between 80-90% capacity (or approximately 7,000 and 8,000 hours per year).

Operational details for the compost and biomass conversion facilities are presented below. See Figures 2-1 through 2-4 for maps and site plans illustrating the facility's location and features.

Project Construction

The 36-acre proposed site (approximately 36 acres for the CASP and two-acres for the biomass component) would be located in a soil borrow pit and would be designed to accommodate up to 200,000 tons per year (that can be built in phases of 50,000 tons per year in modular units), using CASP technology. The location of the CASP is recessed approximately 20 feet below grade and is currently vacant, graded, and would not need to be cleared and grubbed for the proposed compost facility. Construction at the site would last approximately five to six months for Phase 1, a 100,000 TPY CASP module, and would include installing processing and composting equipment, a 50,000 square foot processing building, a 10-acre concrete compost pad, and a 35.9 acre-foot (AF) lined pond to collect contact water.

Temporary construction equipment would include a grader, tractor, loader, backhoe, and rubber-tired bulldozer. The existing access to the landfill would be utilized to gain access to the compost facility. Site improvements would be required by the SWRCB as part of the approval process for this project. The landfill property currently has a site-specific WDR permit for water quality protection. This permit would need to be revised to reflect operational changes associated with the proposed compost facility and additional regulatory requirements imposed by the SWRCB for compacted compost pads and lined wastewater storage ponds. Alternatively, the compost facility may be placed under the General Order instead of revised site-specific WDRs. Regardless, site improvements include constructing a new lined wastewater storage pond, as well as making additional on-site drainage improvements to continue to direct stormwater and process water runoff into these detention pond(s), and improvements to working surfaces such as paving active composting and/or processing areas or amending/compacting the soil to meet the SWRCB's specifications.

Figure 2-1
Regional Location Map

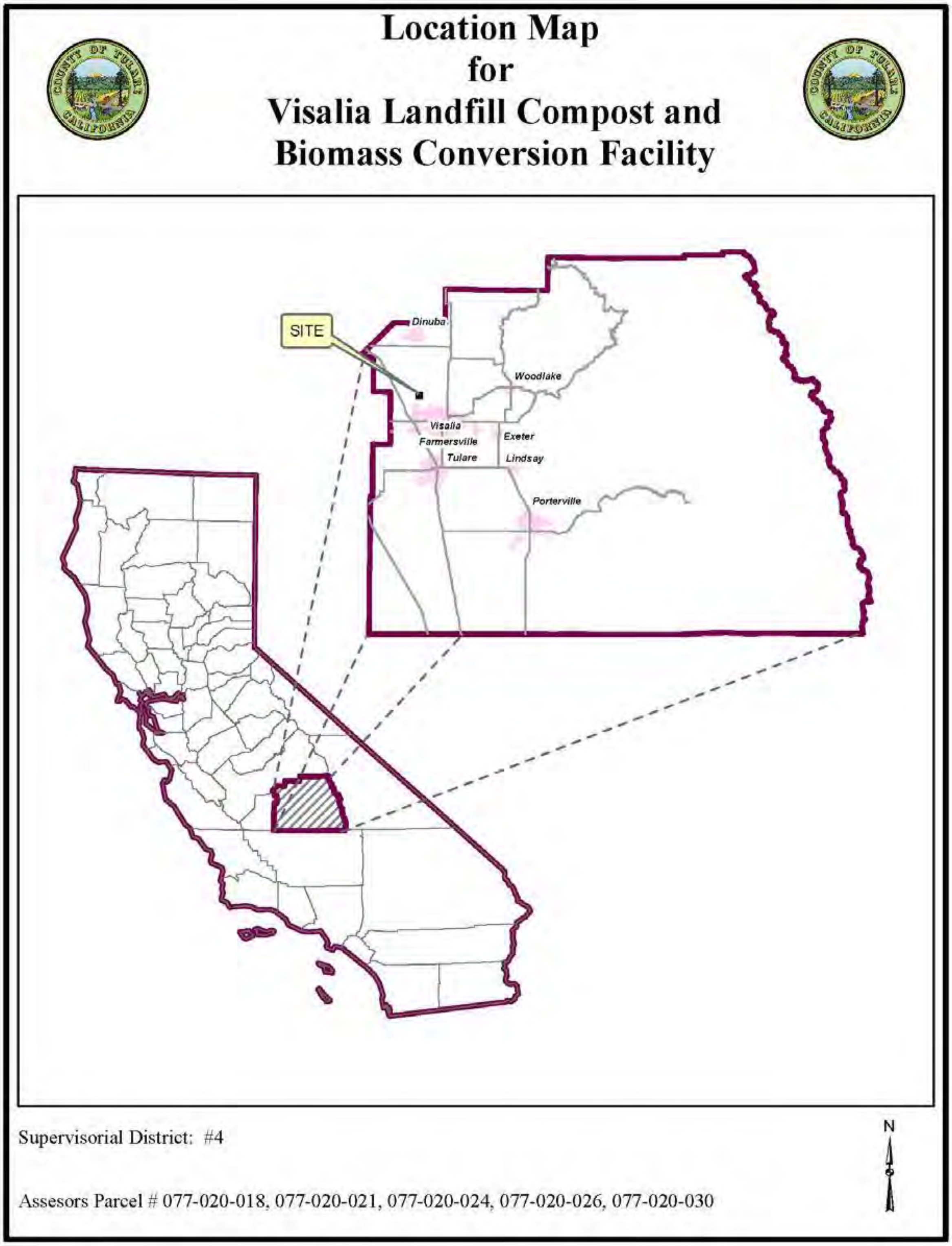


Figure 2-2

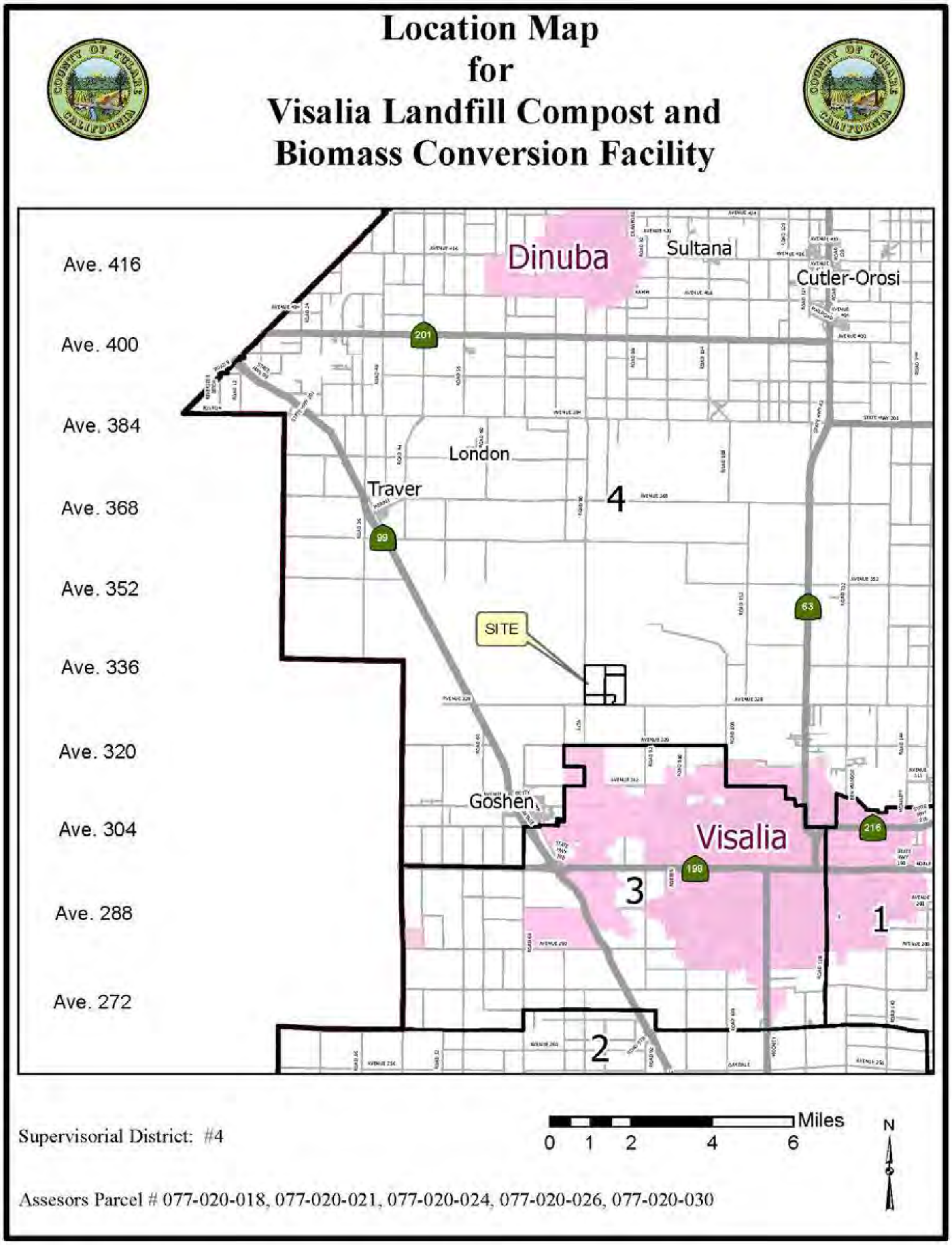

Location Map
for
Visalia Landfill Compost and
Biomass Conversion Facility
Ave. 416
Ave. 400
Ave. 384
Ave. 368
Ave. 352
Ave. 336
Ave. 320
Ave. 304
Ave. 288
Ave. 272
Dinuba
Sultana
Cutler-Orosi
201
London
Traver
4
99
63
SITE
Goshen
Visalia
216
198
3
1
2
Miles
0 1 2 4 6
N
Supervisorial District: #4
Assesors Parcel # 077-020-018, 077-020-021, 077-020-024, 077-020-026, 077-020-030

Figure 2-3

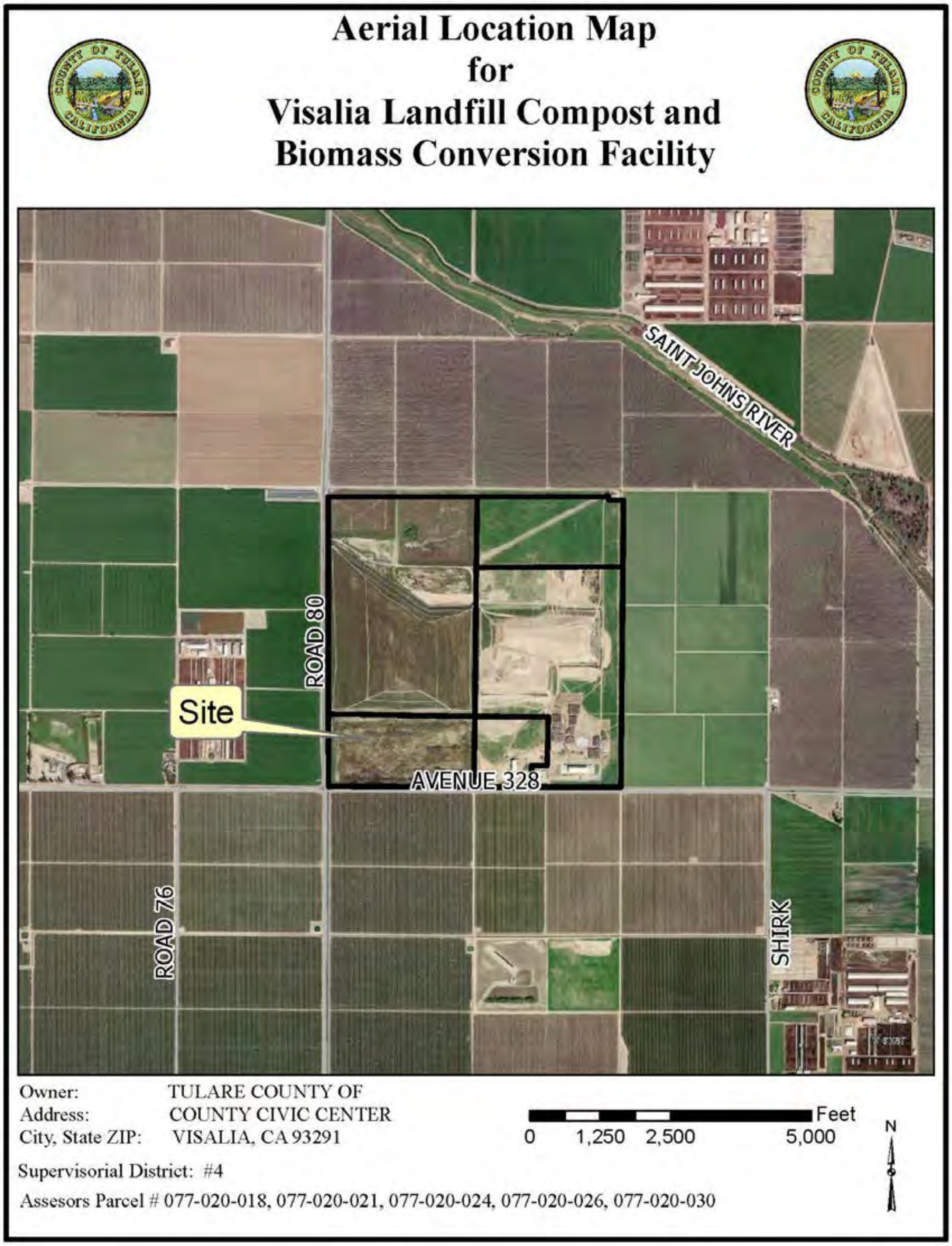

Aerial Location Map
for
Visalia Landfill Compost and
Biomass Conversion Facility
SAINT JOHNS RIVER
ROAD 80
Site
AVENUE 328
ROAD 76
SHIRK
Owner: TULARE COUNTY OF
Address: COUNTY CIVIC CENTER
City, State ZIP: VISALIA, CA 93291
Feet
0 1,250 2,500 5,000
N
Supervisorial District: #4
Assesors Parcel # 077-020-018, 077-020-021, 077-020-024, 077-020-026, 077-020-030

Figure 2-4
Entire Visalia Landfill Site Plan

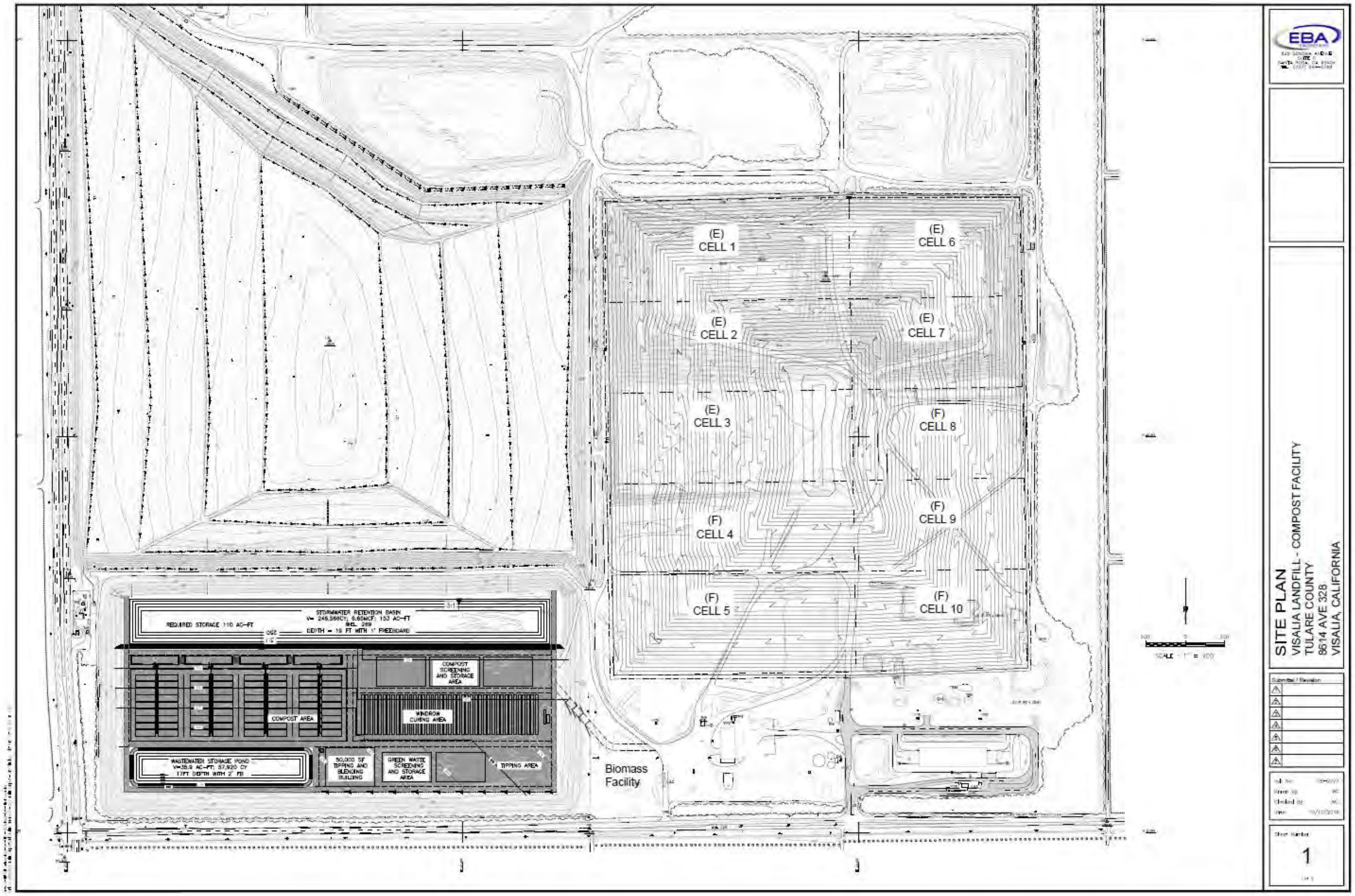
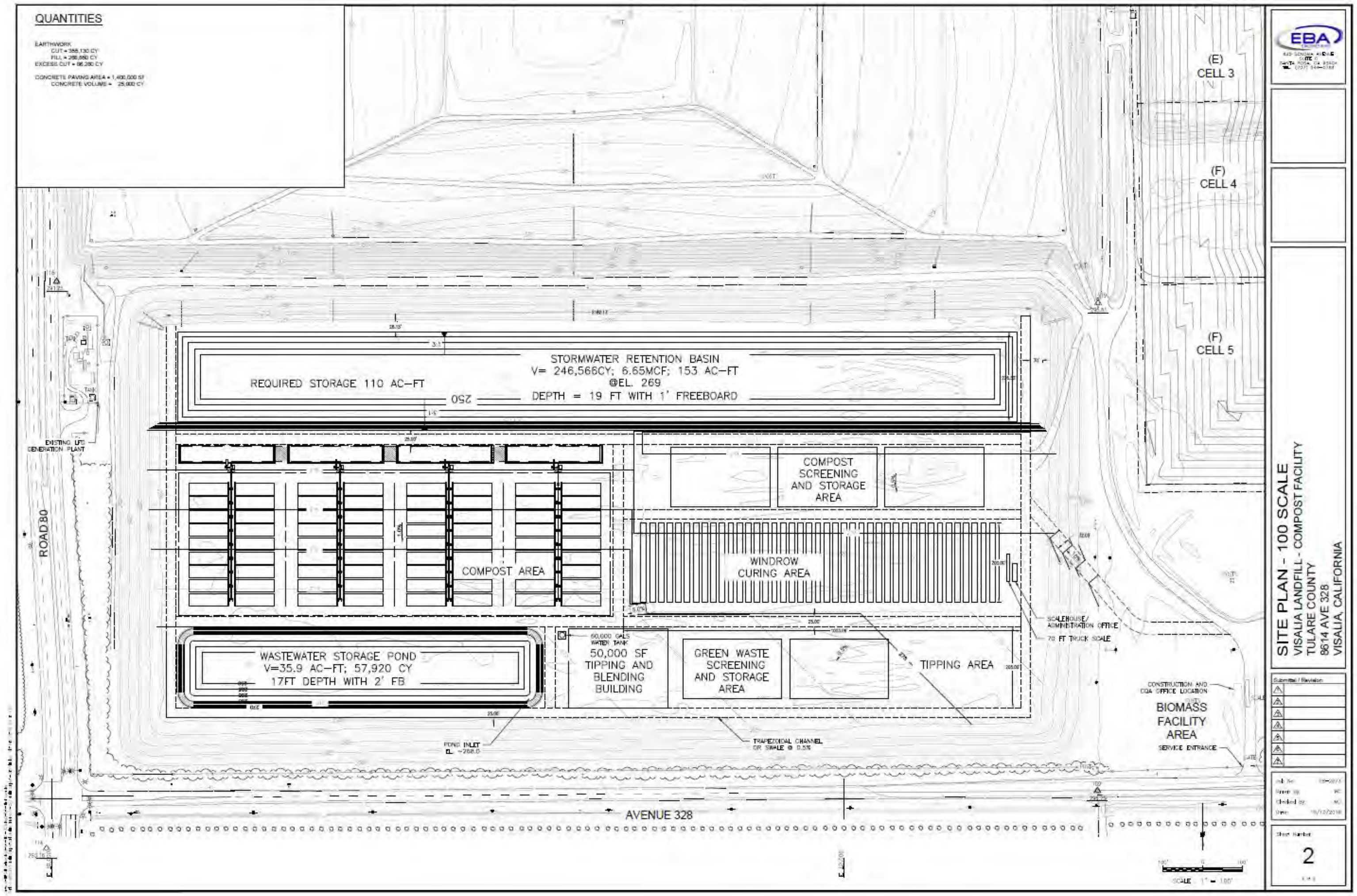


Figure 2-5
Visalia Landfill Site Plan with Composting and Biomass Facilities



Utilities

Utilities would be limited to those currently serving the Project area, as discussed below.

Water Supply

Two existing wells are available on the landfill property for water supply. The "Cotton Gin Well" is located in the south-central portion of the property and has a well yield ranging from approximately 400 to 900 gallons per minute (GPM). This well is currently used for the landfill operations. The average daily water use for the landfill operations is approximately 118,000 gallons per day (GPD). As for the composting operations, the typical summer day for an average 400 tons per day (TPD) CASP compost facility, or 100,000 TPY, is 168 TPD of water or 40,000 GPD or 56 GPM for 12 hours pumping per day, or 10 trips per day for a 4,000 gallon water truck. The typical summer day for an average 800 TPD CASP compost facility, or 200,000 TPY, is 336 TPD of water or 80,000 GPD or 112 GPM for 12 hours pumping per day or 20 trips per day for a 4,000 gallon water truck. These usages equate to an average daily demand for both the landfill operations and compost facility of approximately 158,000 to 198,000 GPD. The Cotton Gin Well's 400 to 900 GPM yield is sufficient to accommodate this demand. The second on-site well ("Northeast Well") is located in the northeast corner of the property and is currently used for contingency purposes only. No information is currently available with regard to its well yield characteristics. However, based on the local hydrogeologic depositional environment, it is reasonable to conclude that its yield is likely on the order of several hundred GPM, which would be sufficient to service the composting operations. A 60,000-gallon dedicated water tank for fire control purposes will be located within the compost facility operating area.

Sewer Service

There is no public wastewater service or septic system on the compost site or planned for development. Portable toilet facilities would be provided for employees. The employees would have access to the landfill facilities' gate for access.

Electrical Service

Service would be extended to the site and an electrical utility pole would be constructed on-site to provide power to run compost equipment, processing equipment, blowers, and an electric grinder.

Solid Waste Service

Residual waste from contamination that is delivered with the organic waste would be containerized on-site for up for 48 hours prior to disposal at the landfill.

Site Access, Circulation and Fire Safety

The compost project site would be accessed from Avenue 328 via an entry roadway that services the landfill. There would be no increase in the current tons traffic permit limits stated in the Solid

Waste Facility Permit for the landfill, as the current green waste and wood waste is being diverted now, and the new organic wastes tons would be diverted directly to the compost facility instead of to the landfill. A 20-foot-wide perimeter fire lane would surround the site. An additional 20-foot fire lane would be placed between the phased composting areas and distinct operational areas.

Project Operations

<u>Compost Facility</u>

The following operational procedures are planned for project operation for the proposed compost facility to comply with environmental permits and other regulatory requirements. Phase 1 would include construction of the compost pad for a 100,000 TPY CASP Module with a seasonal peak flow of 500 TPD and the 50,000 square-foot processing building, develop the rest of the site to receive and process materials, cure and store the finished compost, and install the lined pond. Phase 2 would add another 50,000 TPY compost pad and CASP module and Phase 3 would add the final compost pad and CASP module, bringing the total compost facility capacity to 200,000 TPY. Upon final build out, the average and seasonal peak flows would be 650 and 850 TPD, respectively.

Organic Waste and Material Types

The proposed Project would authorize the composting facility to accept organic waste and materials types of ‘mixed materials’ consistent with the new regulations (AB 1826 and SB 1383), which have changed the requirements for disposal of organic waste as well as expanding the list of organic wastes that can be accepted at a Compostable Materials Handling Facility. The additional types of ‘mixed materials’ and organic wastes would include all types of food material (including post-consumer food waste, food-soiled paper, compostable plastics), and digestate consistent with current regulations. Based on this, the CUP would list acceptable materials that can be received by the composting facility and includes:

- ‘Mixed Materials’ pursuant to 14 CCR
- ‘Food Material’ pursuant to 14 CCR; and
- ‘Organic Wastes’ pursuant to SB 1383 regulations.

The landfill currently accepts construction and demolition debris, green waste, wood waste, and agricultural waste for diversion operations, as well as municipal solid waste for landfill disposal. The landfill currently disposes of the organic waste within the municipal solid waste stream, which instead would be diverted from the landfill to the compost facility.

CASP technology can be permitted to receive a variety of composting feedstocks including all types of compostable organic wastes, green wastes, food wastes, and clean wood wastes. Many compost facilities receive feedstocks that are predominately composed of tree prunings, leaves, grass clippings, and contain a small percentage of food waste. Leaves generally have a high C/N ratio. Lawn clippings lack structure to maintain porosity for aeration but have a favorable C/N ratio and moisture content for composting, as does food waste. The CASP compost ‘recipe’ would vary over time as the participation in residential food waste collection programs increases over time, along with SB 1383 commercial organic wastes, however the recipe would be a balanced C/N ratio and would yield an excellent finished compost product.

The proposed Project would be authorized to receive and handle any ‘compostable material’ or ‘digestate’ as authorized under current regulations, such as agricultural materials, food material, green material, mixed material, organic wastes, and pre-processed feedstock-ready CASP materials. Some organic material may be delivered preprocessed and feedstock-ready from local material recovery facilities and may be deposited directly into the CASP unit without further processing. Any feedstocks approved to be processed at the facility would comply with all applicable regulations.

Under the proposed Project, the composting facility would obtain a Solid Waste Facility Permit where the following types of wastes would be prohibited at the compost facility:

- Hazardous, radioactive, designated, and medical wastes;
- Dead animals, septage, ash, painted or treated wood;
- Mixed (municipal) solid waste and mixed construction and demolition materials;
- Burning material;
- Manure from known infected herds or sources as monitored and reported by the California Department of Food and Agriculture (CDFA); and
- Biosolids or any type of sewage sludge.

Hours of Operation

The hours of operations for receiving waste material will harmonize with the landfill with the following hours of operations:

Monday – Friday 7:00 am to 4:00 pm
Saturday 8:00 am to 4:00 pm

The hours of operations of processing material will be 24 hours per day, 7 days per week. The waste material received in the processing building may be processed 24 hours per day to accommodate surge piles and process within a 48-hour holding time period from the time of receipt. The CASP piles will be provided moisture control and oxygen via the fans that are controlled electronically on a timer throughout the 24 hour day. CASP piles may be processed throughout the day to accommodate wind patterns that could limit processing during the calmer portions of the day.

Materials and Receiving

The facility would be designed to process organic waste that would be considered new tons to comply with SB 1383, as well as current tons that may be recycled on-site or at other at other facilities in the County. The organic waste would be delivered to the proposed compost facility by collection vehicles, transfer trailers and self-haul vehicles. Wood waste would be stored outdoors for up to 30 days in a designated area. Green waste would be stored outdoors for up to 7 days in a designated area. Co-collected residential organic wastes would be stored outdoors for up to 48 hours. Commercial organic waste would be delivered into the proposed processing building.

Pre-Processing Operations

The existing CUP for the Visalia landfill property allows for reception and storage of green waste and wood waste and the grinding process, which would be re-located from the current location near the landfill to the composting facility. This project would allow these wastes to continue to be ground; and will allow further processing through a screen or similar equipment to size separate and be blended with processed food waste in ratio of 10% to 25% food material to green and wood materials and be placed in the CASP composting area for composting. Additional equipment, such as a grinder, conveyors, and shaker deck, would be installed on the project site to complete these process operations.

Though education and awareness with monitoring and reporting, the County would work with the cities and their haulers to minimize contamination placed in the organic waste carts and bins. Once received the organic waste would be load-checked for non-compatible wastes and contamination, which would be removed by manual floor sort for outdoor operations or mechanical processing equipment within the processing building. The project allows for pre-processed feedstock-ready material to be placed directly into the CASP unit.

The equipment would be used for material handling, size reduction and residual/contamination removal (such as film plastic) from the materials, wastes, and finish compost. Non-compostable residual material would be sorted and containerized on-site and transported for disposal at the landfill within 48 hours of being generated.

The proposed equipment support the processes as follows with a list provided in **Table 2-1**:

1. Pre-processing to support receipt of green materials;
2. Pre-processing to support receipt of food material, mixed material, and organic waste;
3. Post-processing to size and classify compost; and
4. On-site conveyance connecting process areas to transport material.

In preparation for the active composting phase, feedstock materials are pre-processed by grinding. Grinding of the feedstock reduces the volume of material, increases the surface area to promote biological decomposition, and provides a relatively uniform mixture of material and particle size. Feedstock may consist of any organic materials including green waste, clean dimensional lumber, agricultural materials (such as grape pomace), and food wastes. The amounts of these materials which makeup the feedstock ‘recipe’ are critical for both C/N ratio and most importantly bulk density. Green waste materials, with small percentages of food waste introduced to the mixture are ideal for the CASP technology, based on experience with the materials generated in the region. High percentages of food waste or other similar high-density feedstocks of the total recipe may lead to a feedstock that is too dense and does not allow for proper airflow through the CASP.

Bulking materials, such as compost overs or wood waste can be added to increase the bulk density as required, however these materials also reduce the amount of capacity available for new inbound feedstocks. A typical recipe for CASP compost systems can vary from 10% to 25% food material to green and wood materials.

Table 2-1
Composing Facility Equipment List

Equipment	Process Used In	Power Source
Fuel Truck	Refueling Equipment (Off-road and On-Road Equipment)	Diesel
2 Tractors	Material Transfer (Off-road Equipment)	Diesel
Excavator	Material Transfer (Off-road Equipment)	Diesel
6 Loaders	Material Transfer (Off-road Equipment)	Diesel
Office Vehicle	Composting Process (Off-road Equipment)	Diesel
Sweeper Truck	Composting Process (Off-road Equipment)	Diesel
2 Water Trucks	Composting Process (Off-road Equipment)	Diesel
Shop Truck	Composting Process (Off-road Equipment)	Diesel
2 Grinders	Feedstock Products (Mulching)	Electric
2 Conveyors	Feedstock Products (Mulching)	Electric
Pre-Processing Line Shredders/Grinders	Compost Processing (Feedstock Pre-processing line)	Electric
Pre-Processing Line Conveyors	Compost Processing (Feedstock Pre-processing line)	Electric
Food Waste Processing Equipment	De-package and remove contaminates to produce slurry feedstock	Electric
2 Processing Trommel	Compost Processing (Finished Processing	Electric
1 Film Plastic Separator	Compost Processing (Finished Processing line)	Electric
Processing Line Sizing Screen	Compost Processing (Finished Processing line)	Electric
Processing Line Conveyors	Compost Processing (Finished Processing line)	Electric
Shop Truck	Composting Process (Off-road Equipment)	Diesel
2 Processing Trommel	Compost Processing (Finished Processing line)	Electric
1 Film Plastic Separator	Compost Processing (Finished Processing line)	Electric
Processing Line Sizing Screen	Compost Processing (Finished Processing	Electric
Processing Line Sizing Screen	Compost Processing (Finished Processing	Electric

Grinding Pre-Processing Operations

The existing CUP for the landfill property allows for reception and storage of green waste and wood waste and the grinding process, which would be re-located from the current location near the landfill to the compost operations. This project would allow these wastes to continue to be ground; and will allow further processing through a screen or similar equipment to further size separate and be blended with processed food waste in ratio of 10% to 25% food material to green and wood materials and be placed in the CASP unit for composting. Additional equipment, such as a grinder, conveyors, and shaker deck, would be installed on the project site to complete these process operations.

The co-collection of green waste with food material from residential sources (co-collected residential organics) is an emerging trend in California to meet SB 1383 objectives. The amount of residential food material varies from 3% to 7%, with seasonal peaks up to 10%, of the green waste volume, based on seasonal factors and special holiday events. The co-collected residential organics would be delivered to the site by local collection vehicles or from transfer trailers and would be received and processed outdoors in the tipping area and not within the processing building, unless later specified as part of an enhanced odor mitigation plan. A site-specific Odor Impact Minimization Plan will be prepared, which includes multiple design and operational measures to reduce odors, including an outdoor storage time limit of 48 hours for un-processed co-collected materials.

The outdoor organic waste processing area would have a capacity to store up to 10,000 cubic yards of received green waste and co-collected waste. Two stockpiles would be separated by fire lanes consistent with applicable fire district standards of 20 feet. The co-collected residential organics would be stockpiled on a pad for a maximum period of 48 hours and green waste and wood waste could be stored for up to 30 days. Chipping and grinding would generally occur on the day of receipt from co-collected residential organics, and up for 7 days for green waste. The processed co-collected organics material storage area would be constructed with a compacted all-weather pad equipped with a gravity drain to the lined wastewater storage pond.

Food Waste Pre-Processing

Adding pre-processing lines and processing equipment within the processing building could allow for adequate upfront processing of unprocessed material before beginning the composting process. The project would allow for reception and pre-processing of commercial organic waste and food material/mixed material pre-processing at the facility. Statistics on the comingled commercial loads materials indicate loads have an average of approximately 30% by-weight non-compostable contamination rate, even when the best management practices are followed at the source. Transfer trailers, collection trucks, or end dump vehicles would transport unprocessed commercial organic waste to the project site where it would weigh in across certified scales. The truck would travel to a dedicated receiving and storage area within a designated bunker, within the processing building, where the material would be offloaded. Vectors would be controlled by good housekeeping practices within the enclosed building.

The Project proposes to utilize state-of-the-art extruder-type food processing technology to preprocess commercial organic waste. Materials and organic waste would be loaded from the bunker, with a front-end loader, into an infeed bin to be mechanically separated from the residual waste. The resulting food waste, targeting less than 1% contamination by weight, would be blended with green waste either within the building or within the CASP unit. This material would be mixed with green waste and/or bulking agent into a compost feedstock unit with blends of 10% to 25% food material to green material.

Covered Aerated Static Pile (CASP) Technology

CASP technology is superior to traditional composting methods, such as windrows because air is mechanically added to the piles as needed, based on continuous temperature monitoring, and a biological 'cap' or 'cover' of compost is placed over the pile to significantly reduce the uncontrolled emissions. The proposed CASP composting process consists of multiple phases, with primary and secondary operations, with both positive and/or negative air. Integral to the CASP operations is feedstock receiving and pre-processing as previously described, active composting with aeration, curing, screening and storing finished compost prior to sale. There are approximately 36 acres available at the facility for composting activities. The active composting area would feature a 10-acre paved pad. Once active composting is complete, the materials are then moved to a curing area, then to final screening and finishing at the compost storage until products are sold.

Aeration System

The proposed CASP technology has been determined to be the best available control technology (BACT) by the SJVAPCD. The CASP system includes infrastructure to push air flow into the compost material ('positive aeration') and/or pull air flow from the compost material ('negative aeration') during the active compost phase, which may include both primary and secondary batch systems. The positive air heats up the composting process as needed and the negative air better controls odors and emissions during the active compost process.

An active aeration system, which can help provide more ideal conditions for the composting process, is expected—on a per ton of compost basis—to reduce system footprint and retention time for composting, reduce movement of material once on-site and the amount of off-road equipment needed compared to traditional windrow composting, and reduces odor and volatile organic compound (VOC) emissions. The system would be designed to satisfy the requirements of the SJVAPCD Rule 4566, which regulates organic material composting operations.

As described above, the aeration system would utilize either positive and/or negative pressure. An active aeration system that utilizes positive airflow utilizes a biocover. An active aeration system that utilizes negative airflow utilizes a biofilter (i.e., separate pile consisting of finished compost overs and/or wood chips). A push/pull system can switch between positive and negative air flow and would therefore utilize both a biocover and a biofilter. The CASP composting system would still use wet suppression/water sprays to help reduce fugitive dust during material receiving/mixing, active and curing phase composting, and finished compost storage and loadout.

Temperature & Moisture Control

The composting process produces heat as a result of bacteriological metabolism. Initially, the heat generated by mesophilic bacteria elevates the temperature to about 50°C (122°F) or more. As the mesophilic bacteria population decreases due to the high temperature, thermophilic bacteria take over and elevate the temperature up to 60°C (140°F) or more. Over time and under the proper environmental conditions (i.e., the presence of oxygen, water, and nutrients), the microorganisms are self-limiting and the temperature stabilizes at between 55°C (131°F) and 75°C (167°F).

Temperatures would be monitored to ensure that the prescribed regulatory period of 72 consecutive hours at no less than 55°C (131°F) are met for the Process to Further Reduce Pathogens (PFRP). Maintaining the proper moisture content for a composting pile is also important; for the composting operations, the optimum water content lies around 50%. If the pile is too dry, the microbes go dormant; therefore, moisture is added to the feedstock prior to inclusion into the CASP operation in order to maintain the proper water content. If the pile is too wet, saturated conditions can cause the pile to become anaerobic due to lack of oxygen circulation. The optimum pH for composting is between 6.0 and 7.5 (near neutral).

Composting

Following grinding, pre-processing and blending or receipt of feedstock-ready materials, the materials would be placed in static piles not exceeding 250 feet long by 100 feet wide and approximately 10 feet in height within the primary CASP unit as to meet Fire Code standards. The piles would be constructed using a loader to stack the material. Underlying the piles are perforated pipes (up to 32 pipes and 8 blowers per CASP unit, or fan group), which may be embedded in the concrete below or may be flexible pipes placed on grade within each static pile, which provide positive aeration to the bottom of the piles from adjacent air handling units or 'blowers' as part of the initial phases to heat up the mass. After the piles are constructed, they are covered with a minimum of 12 inches of compost material, which acts as a biofilter which reduces harmful emissions and potential odors. The compost cover itself is moisture conditioned through the active composting phase as needed to maintain its effectiveness in controlling emissions and odors.

The CASP aeration process is highly automated and controlled. The composting piles are instrumented with wireless automated temperature probes for ongoing temperature monitoring throughout the active composting process. Based on monitoring and operational protocol, the aeration system is activated to induce airflows through the CASP. The aeration timing and flow rates are varied as needed to optimize the composting process and minimize odors. A push/pull system can then switch from positive to negative air flow and would therefore utilize a biofilter to control emissions and minimize odors.

Composting piles remain on the primary CASP unit for 24 days prior to being moved by a bucket loader or conveyance system to the secondary CASP unit for another 24 days, with some variation in composting time depending on feedstock composition, temperature, moisture, season of the year, and stability of the compost at the end of the active phase. The secondary CASP serves to ensure that adequate decomposition is attained in the event uniform composting was not achieved during the primary CASP phase. After secondary CASP, the material is moved to the curing pad to mature.

Curing

When the active composting phase is complete, the curing phase begins. The composting piles are dismantled and hauled to the curing area. Curing allows the compost material to mature and is essential in the development of a high-quality product. Curing piles are constructed with front loaders and are approximately 20 feet wide, 250 feet long and 15 feet high. Material placed in the curing area will typically cure for 3 months or more. Moisture may also be added to the curing windrows as needed to maintain suitable curing conditions and control dust. After the curing process, the composted materials are screened based on customer demand, but typically to 3/8-inch and smaller, to remove oversize particles and contaminants (plastic, glass, etc.) and provide a final compost product specific for its end use.

Screening

Through this process an over-sized finished compost (>3/8-inch typically) is also produced through the screening effort. This material is typically referred to as 'overs' and they generally consist of composted pieces of woody material. There are many uses for 'overs' such as composted mulch, biofilter media, erosion control, compost bulking agent, and soil amendment, but due to the rather low nitrogen content and size of this material the value tends to be significantly less than the unders fraction. In addition, film plastic contaminants are a common problem in composting residential wastes and film plastics tend to be concentrated into the overs fraction of the finished compost process. Because of this contamination some end uses may be limited with regard to overs. Eventually, through additional processing and screening, contamination of overs may become so high that landfill alternative daily cover (ADC) will count as disposal starting 2020. Overs are not generally considered a residual; they are a valuable part of the finished compost. But depending on inbound feedstock contamination and the natural process of concentrating film plastics into the overs fraction through screening a portion of overs will generally end up as landfill ADC due to this contamination.

<u>Biomass Facility</u>

Tulare County Public Works is proposing to amend their CUP application to add a 2.0 mega-watt (MW) biomass conversion facility at their landfill. The facility will produce electricity, heat and biochar using wood fuel that will be provided by local activities to reduce landfill disposal to meet the mandates of SB 1383 to reduce 75% of all organic, which includes wood waste, from landfill disposal by 2025.

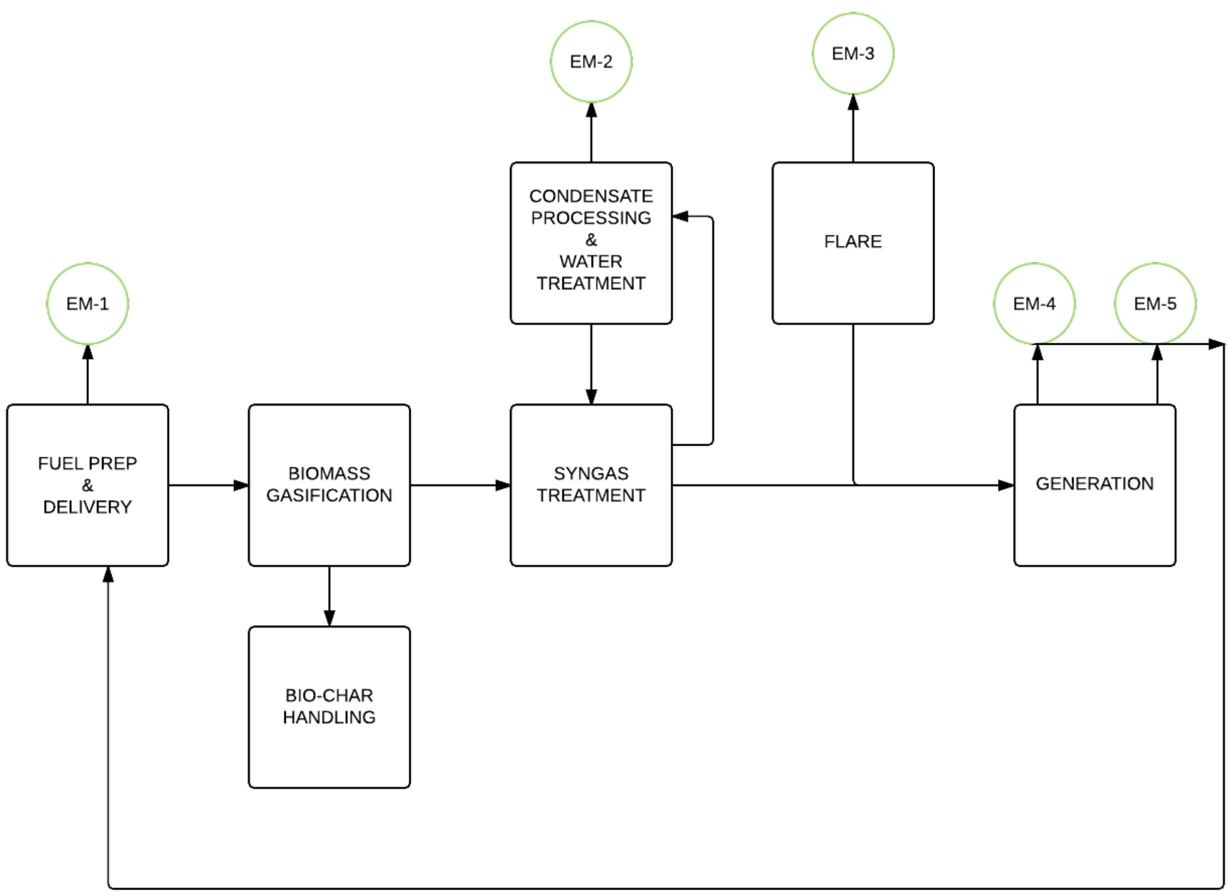
The facility will utilize approximately 18,000 bone dry tons (BDT) of wood chips per year or 25,000 tons of per year of wet recovered wood waste and produce approximately a net amount (after parasitic load) 2.0 MW of electrical energy per hour. In addition to this the facility will also produce approximately 20-30 MM BTU of waste heat and approximately 300-600 pounds of biochar per hour.

The facility is planned to operate 24/7, however given there will be maintenance requirements for the equipment it is anticipated that the gas production equipment and the GE Jenbacher internal combustion engine generator sets ("gensets") will likely only operate between 7,000 and 8,000 hours per year, or approximately 80-90% capacity.

Process Overview

Phoenix Energy system is the proposed vendor technology, or equivalent, which converts woody biomass into a synthesis gas ("syngas") through the process of thermo-chemical conversion. Essentially the process "bakes" the biomass in an oxygen-starved environment. By depriving the fuel of sufficient oxygen, the biomass does not convert to combustion products and pollutants, but rather gives off a hydrogen rich syngas. As the biomass gives off the syngas, it is transformed into biochar of approximately 6-9% of the weight of biomass fuel. The syngas is then captured, cleaned and conditioned before being sent as fuel to the genset to produce electricity. The gensets that have been selected for this project are two new *GE Jenbacher Model J-612* and the process is summarized in the figure below.

Figure 2-6
Process Overview

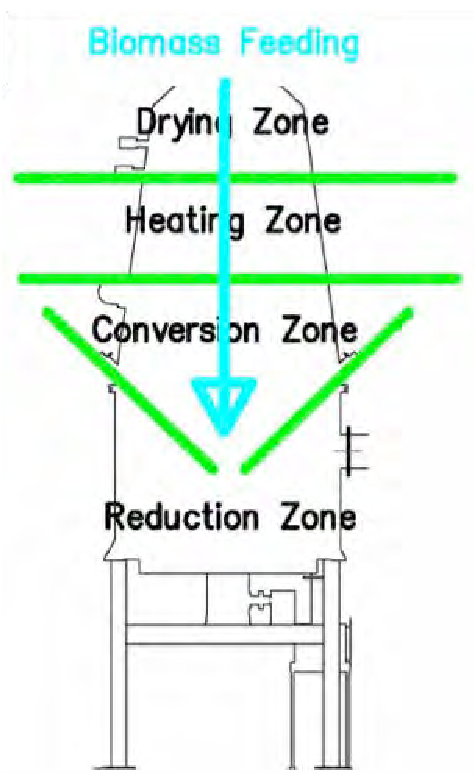


Fuel Preparation and Delivery

Fuel will be procured in accordance with the fuel eligibility criteria for the BioMAT tariff under SB1122 for urban-sourced fuel, or through the Marin Clean Energy Program. Deliveries to the facility will be generated from on-site MSS wood recovery and processing activity.

As the source for the fuel is either recovered from urban sources or from the forest-source biomass material to mitigate forest fires, it is anticipated that the in-bound fuel will arrive and could contain up to 50% moisture. Depending on final equipment selection, it is anticipated drying this material to approximately 10% moisture content through the use of a rotary drum dryer with a cyclone that will be powered by the waste heat from the system.

Biomass Conversion



The biomass conversion chamber is essentially a chemical reactor where various complex thermo-chemical processes take place. As it flows through the reactor, the biomass gets dried, heated, converted into gas and reduced into bio-char.

Although there is a considerable overlap, each process can be considered to be occupying a separate zone, in which fundamentally different chemical and thermal reactions take place. The fuel must pass through all of these zones to be completely converted.

For this Project, Phoenix Energy will utilize a downdraft gasifier. The essential characteristic of the downdraft design is that the tars given off in the heating zone are drawn through the conversion zone, where they will be broken down or oxidized. When this happens, the energy they contain is usefully recovered and the mixture of gases in the exit stream can be recovered for fuel use. The exit stream gas is moved through the gasifies to downstream treatment processes in an enclosed system and the only emission point for the gas stream prior to engine utilization is the emergency and maintenance process flare described as EM-3 in the process flow diagram.

Bio-char Handling

Biochar produced during this process is conveyed from the bottom of the gasifier in an enclosed water-cooled auger to a hopper from which it is packaged into 2 cubic yard supersacks.

Synagas Treatment

After the syngas has been extracted from the conversion chamber it is cleaned by a series of cyclones, scrubbers, and filters. First the gas passes through a series of scrubbers, which removes particulates and condensibles. Then the gas is passed through a series of filters to be conditioned for fuel use in the Jenbacher gensets.

Power Generation

Phoenix systems are based on a spark-ignited engine genset. In this case Phoenix will be using two new GE Jenbacher model J-612 that have been customized by the manufacturer for syngas fuel. The engines will be equipped with emissions control system to control air pollutants to meet SJVAPCD requirements. In case of engine shutdown or process upset, an emergency flare will be utilized for the syngas, until syngas generation is safely shutdown. Phoenix does not expect use of the flare to exceed 250 hours at 100% capacity. Phoenix Energy will provide standard paralleling switchgear for electrical output.

The two GE Jenbacher ICE gensets will meet Best Available Control Technology (BACT) per SJVAPCD District Guidelines. The flare will also meet SJVAPCD BACT.

Condensate Processing and Water Treatment

Water, which is entrained in the biomass fuel, is vaporized with the production of syngas. This water is then condensed out of the gas as it cools. This is very similar to the condensate found in natural gas or propane pipe and will contain trace amounts of hydrocarbons. Phoenix Energy and their technology partners utilize a suite of separation technologies including flocculation, settling, and other treatment, which will remove the majority of particulates and hydrocarbons in the water loop. This limits the need for make-up water in the systems cooling towers instead of solely utilizing fresh water for process needs. The water passed through the cooling tower will have trace amounts of hydrocarbons and as a result, the cooling tower will be a permitted emission point.

Vicinity and Surrounding Area

Land uses surrounding the site are characterized by intensive agricultural operations. Tree crops are to the north of the landfill property, while row crops are immediately to the east and south. A dairy is located to the west. The City of Visalia is approximately one (1) mile to the south.

Project Site Zoning and Land Use

The landfill property, contiguous parcels, and the surrounding area are designated by the Tulare County Zoning Ordinance No. 352 as AQ-40, Exclusive Agriculture Zoned. The proposed Project is located with the Visalia Urban Area Boundary.

PROJECT OBJECTIVES

The following are the objectives of the proposed Project.

- Provide compost capacity for a transformative organics diversion program in California as required by California legislation;
- Reduce methane emissions from landfills by removing organics from landfills and by composting new feedstocks and reducing greenhouse gasses (GHG) by sequestering nutrient rich compost in soils;
- Modify an existing, strategically integrated waste management facility (Visalia Landfill) to accommodate the growing regulatory demand for mixed materials, organic waste, and food waste composting;
- Receive and compost food wastes derived from commercial and residential sources, increase diversion of organic materials from landfills by expanding the approved feedstock list to include digestates that can be received and processed;
- List the organics waste feedstocks for the facility, using terms and definitions consistent with new State composting regulations (14 CCR) and the adopted SB 1383 regulations;
- Allow pre-processing food waste operations at the facility;
- Continue to provide economic benefits to Tulare County through employment of local residents, by the expansion of operational solid waste management activities and construction of new processing equipment;
- Compliance with SJVAPCD rules and regulations;
- Facilitate the accomplishment of AB 341, which directs CalRecycle to increase statewide diversion from landfills to 75% by 2020;
- Enhance the business community's ability to comply with AB 1826, which as of April 1, 2016 requires businesses that generate a specific amount of organic waste per week must arrange for recycling services for that organic waste in a specified manner (such as composting), to substantially reduce landfill disposal of food wastes; and
- Create water saving opportunities by using compost to enhance agricultural soil.

PUBLIC AGENCY REQUIRED APPROVAL

- Tulare County Health and Human Services Agency
- CalRecycle
- San Joaquin Valley Air Pollution Control District (SVJAPCD)
- California Regional Water Quality Control Board, Central Valley Region

In addition to applying to the Tulare County Resources Management Agency for a Conditional Use Permit (CUP), regulatory oversight of compost facilities is provided by CalRecycle [formerly the California Integrated Waste Management Board (CIWMB)] and the Local Enforcement Agency (LEA), Tulare County Environmental Health Department. The project would also be subject to SJVAPCD requirements.

CalRecycle requires that the project applicant meet design, operation, record keeping, environmental health standards, and employee training requirements for a Compostable Materials Handling Facility, apply for and maintain permit conditions, and be inspected at least monthly. A "Compostable Materials Handling Operation" is defined in Title 14 of the California Code of Regulations (14 CCR), section 17852, as follows:

> (a)(12) "Compostable Materials Handling Operation" or "Facility" means an operation or facility that processes, transfers, or stores compostable material. Handling of compostable materials results in controlled biological decomposition. Handling includes composting, screening, chipping and grinding, and storage activities related to the production of compost, compost feedstocks, and chipped and ground materials. "Compostable Materials Handling Operation or Facility" also includes:
> (A) agricultural material composting operations;
> (B) green material composting operations and facilities;
> (C) research composting operations; and
> (D) chipping and grinding operations and facilities.

Site improvements will be required by the State Water Resources Control Board (SWRCB) as part of the approval process for this project. The facility currently has a site-specific permit, called Waste Discharge Requirements (WDRs), to water quality for the disposal operations. The permit would need to be revised to reflect operational changes associated with this project and additional regulatory requirements imposed by the SWRCB. Alternatively, the facility may be put under the General Waste Discharge Requirements for Composting Operations (General Order) instead of revised site-specific WDRs. Site improvements include constructing a new lined detention pond, as well as making additional onsite drainage improvements to continue to direct stormwater and process water runoff into these detention pond(s), and improvements to working surfaces such as paving active composting and/or processing areas or compacting the soil to meet the SWRCB's specifications.

Chapter 3.1
Air Quality

SUMMARY OF FINDINGS

Based on the impact analysis below, potential impacts to air quality as a result of the proposed Project are determined to be ***Less Than Significant With Mitigation***. The impact determinations in this chapter are based upon the *"Air Quality and GHG Technical Report for the Tulare County Solid Waste Department Compost and Bioenergy Facilities"* Report (AQ & GHG Report). prepared by Yorke Engineering, LLC for this project. The report in its entirety is provided in Appendix "A". A detailed review of potential impacts is provided in the analysis below.

INTRODUCTION

California Environmental Quality Act (CEQA) Requirements

This section of the Subsequent Environmental Impact Report (SEIR) addresses potential impacts to Air Quality. As required in CEQA Guidelines Section 15126, all phases of the proposed Project will be considered as part of the potential environmental impact.

As noted in Section 15126.2 (a), "[a]n EIR shall identify and focus on the significant effects of the proposed project on the environment. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected. For example, the EIR should evaluate any potentially significant direct, indirect, or cumulative environmental impacts of locating development in areas susceptible to hazardous conditions (e.g., floodplains, coastlines, wildfire risk areas), including both short-term and long-term conditions, as identified in authoritative hazard maps, risk assessments or in land use plans addressing such hazards areas."[1]

[1] California Environmental Quality Act (CEQA) Guidelines., Section 15126.2 (a). Accessed October 2021 at: https://resources.ca.gov/-/media/CNRA-Website/Files/Programs-and-Projects/CEQA/CEQA-Homepage/2019_CEQA_Statutes_and_Guidelines.pdf?la=en&hash=28D5D3CF051762486FC0A43BB50921F85E30E8CC

The "Environmental Setting" provides a description of the Air Quality in the County. The "Regulatory Setting" provides a description of applicable Federal, State and Local regulatory policies that were developed in part from information contained in the Tulare County General Plan 2030 Update (General Plan), Tulare County General Plan 2030 Update Background Report (Background Report), and/or Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (RDEIR) incorporated by reference and summarized below. Additional documents utilized are noted as appropriate. A description of the potential impacts of the Project is provided and includes the identification of feasible mitigation measures (if necessary and feasible) to avoid or lessen the impacts.

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item questions and by the San Joaquin Valley Unified Air Pollution Control District (Air District or SJVAPCD) significance thresholds identified in their guidance document *Guidance for Assessing and Mitigating Air Quality Impacts* (GAMAQI).[2] The following are potential thresholds for significance.

- Conflict with or obstruct implementation of the applicable air quality plan.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
- Expose sensitive receptors to substantial pollutant concentrations.
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Environmental Setting

San Joaquin Valley Air Basin (SJVAB)

"Tulare County falls within the southern portion of the San Joaquin Valley Air Basin (SJVAB), which is bordered on the east by the Sierra Nevada range, on the west by the Coast Ranges, and on the south by the Tehachapi Mountains. These features restrict air movement through and out of the SJVAB.

The topography of Tulare County significantly varies in elevation from its eastern to western borders, which results in large climatic variations that ultimately affect air quality. The western portion of the County is within the low-lying areas of the SJVAB. This portion of the County is much dryer in comparison to the eastern portion that is located on the slopes of the Sierra Nevada Mountains. The higher elevation contributes to both increased precipitation and a cooler climate.

[2] San Joaquin Valley Unified Air Pollution Control District (Air District). Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI). February 19, 2015. Accessed August 2021 at: https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF.

Wind direction and velocity in the eastern section varies significantly from the western portion of the County. The western side receives northwesterly winds. The eastern side of the County exhibits more variable wind patterns, but the wind direction is typically up-slope during the day and down-slope in the evening. Generally, the wind direction in the eastern portion of the County is westerly; however terrain differences can create moderate directional changes."[3]

Generally, the temperature of air decreases with height, creating a gradient from warmer air near the ground to cooler air at elevation. This gradient of cooler air over warm air is known as the environmental lapse rate. Inversions occur when warm air sits over cooler air, trapping the cooler air near the ground. These inversions trap pollutants from dispersing vertically and the mountains surrounding the San Joaquin Valley trap the pollutants from dispersing horizontally. Strong temperature inversions occur throughout the San Joaquin Valley Air Basin in the summer, fall, and winter. Daytime temperature inversions occur at elevations of 2,000 to 2,500 feet above the San Joaquin Valley floor during the summer and at 500 to 1,500 feet during the winter. The result is a relatively high concentration of air pollution in the valley during inversion episodes. These inversions cause haziness, which in addition to moisture may include suspended dust, a variety of chemical aerosols emitted from vehicles, particulates from wood stoves, and other pollutants. In the winter, these conditions can lead to carbon monoxide "hotspots" along heavily traveled roads and at busy intersections. During summer's longer daylight hours, stagnant air, high temperatures, and plentiful sunshine provide the conditions and energy for the photochemical reaction between reactive organic gases (ROG) and oxides of nitrogen (NOx), which results in the formation of ozone.[4]

"The SJVAB is highly susceptible to pollutant accumulation over time due to the transport of pollutants into the SJVAB from upwind sources. Stationary emission sources in the County include the use of cleaning and surface coatings and industrial processes, road dust, local burning, construction/demolition activities, and fuel combustion. Mobile emissions are primarily generated from the operation of vehicles. According to air quality monitoring data, the SJVAB has been in violation for exceeding ozone and PM10 emission standards for many years."[5] As of October 2021 the SJVAB is in nonattainment for federal and state ozone and $PM_{2.5}$ standards, attainment for federal PM_{10} standards, and nonattainment for state PM_{10} standards.[6]

Existing Conditions Overview

"Unlike other air basins in California, the pollution in the San Joaquin Valley Air Basin (SJVAB) is not produced by large urban areas. Instead, emissions are generated by many moderate sized communities and rural uses. Emission levels in the Central Valley have been decreasing overall

[3] Tulare County General Plan 2030 Update RDEIR. Page 3.3-9.

[4] Air District, GAMAQI. Chapter 2; and Air Quality Guidelines for General Plans, Chapter 2. Accessed August 2021 at: https://www.valleyair.org/notices/Docs/priorto2008/8-2-05/Entire-AQGGP.pdf#:~:text=Air%20Quality%20Guidelines%20for%20General%20Plans%20(Air%20Quality,to%20address%20air%20quality%20in%20their%20general%20plans.

[5] Tulare County General Plan 2030 Update RDEIR. Page 3.3-9.

[6] Air District, Ambient Air Quality Standards & Valley Attainment Status. Accessed October 2021 at: http://www.valleyair.org/aqinfo/attainment.htm.

since 1990. This can be primarily attributed to motor vehicle emission controls that reduce the amount of vehicle emissions and controls on industrial/stationary sources. In spite of these improvements, the San Joaquin Valley is still identified as having some of the worst air quality in the nation.

The main source of CO and NO_x emissions is motor vehicles. The major contributors to ROG emissions are mobile sources and agriculture. ROG emissions from motor vehicles have been decreasing since 1985 due to stricter standards, even though the vehicle miles have been increasing. Stationary source regulations implemented by the SJVAPCD have also substantially reduced ROG emissions. ROG from natural sources (mainly from trees and plants) is the largest source of this pollutant in Tulare County. Atmospheric modeling accomplished for recent ozone planning efforts has found that controlling NO_x is more effective at reducing ozone concentrations than controlling ROG. However, controls meeting RACT and BACT are still required for SJVAPCD plans.

The SJVAB has been ranked the 2nd worst in the United States for O_3 levels, even though data shows that overall O_3 has decreased between 1982 and 2001.

Direct PM10 emissions have decreased between the years 1975 and 1995 and have remained relatively constant since 2000. The main sources of PM_{10} in the SJVAB are from vehicles traveling on unpaved roads and agricultural activities. Regional Transportation Planning Agencies must implement BACM for sources of fine particulate matter (PM10) to comply with federal attainment planning requirements for PM10."[7]

<u>SJVAB Attainment Status</u>

The United States Environmental Protection Agency (EPA) and the California Air Resources Board (ARB or CARB) designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." The federal non-attainment designation is subdivided into five categories (listed in order of increasing severity): marginal, moderate, serious, severe, and extreme. The degree of an area's non-attainment status reflects the extent of the pollution and the expected time period required in order to achieve attainment.

Designated non-attainment areas are generally subject to more stringent review by ARB and EPA. In the endeavor to improve air quality to achieve the standards, projects are subject to more stringent pollution control strategies and requirements for mitigation measures (such as mobile source reduction measures). If the National Ambient Air Quality Standards (NAAQS) are not achieved within the specified timeframe, federal highway funding penalties (and a federally administered implementation plan incorporating potentially harsh measures to achieve the NAAQS) will result.

[7] Tulare County 2030 General Plan 2030 Update. Part 1 Goals and Policies Report. Pages 9-4 to 9-5.

Table 3.1-1 identifies the current federal and state attainment designations for the SJVAB while **Table 3.1-2** summarizes the ambient air quality standards from which the federal and state attainment status are derived. **Table 3.1-3** summarizes the common sources, health effects, and methods for prevention and control of criteria pollutant emissions.

Table 3.1-1
SJVAB Attainment Status

	Designation Classification	
Pollutant	**Federal Standards**	**State Standards**
Ozone – one hour	No Federal Standard[1]	Nonattainment/Severe
Ozone – eight hour	Nonattainment/Extreme[2]	Nonattainment
PM_{10}	Attainment[3]	Nonattainment
$PM_{2.5}$	Nonattainment[4]	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead (Particulate)	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Vinyl Chloride	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified

1 Effective June 15, 2005, the U.S. Environmental Protection Agency (EPA) revoked the federal 1-hour ozone standard, including associated designations and classifications. However, EPA had previously classified the SJVAB as extreme nonattainment for this standard. Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.

2 Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010)

3 On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM_{10} National Ambient Air Quality Standard (NAAQS) and approved the PM_{10} Maintenance Plan.

4 The Valley is designated nonattainment for the 1997 PM2.5 NAAQS. EPA designated the Valley as nonattainment for the 2006 PM2.5 NAAQS on November 13, 2009 (effective December 14, 2009).

Source: San Joaquin Valley Unified Air Pollution Control District. Ambient Air Quality Standards & Valley Attainment Status. Accessed August 2021at: http://www.valleyair.org/aqinfo/attainment.htm.

Table 3.1-2
State and Federal Ambient Air Quality Standards

Pollutant	**Averaging Time**	**California Standards[1]**		**National Standards[2]**		
		Concentration[3]	**Method[4]**	**Primary[3,5]**	**Secondary[3,6]**	**Method[7]**
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM_{10})[9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		-		

Table 3.1-2
State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	**Method[4]**	**Primary[3,5]**	**Secondary[3,6]**	**Method[7]**
Fine Particulate Matter ($PM_{2.5}$)[9]	24 Hour	---	---	35 $\mu g/m^3$	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 $\mu g/m^3$	Gravimetric or Beta Attenuation	12 $\mu g/m^3$	15.0 $\mu g/m^3$	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	---	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 $\mu g/m^3$ (10 mg/m^3)	---	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		---	---	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 $\mu g/m^3$)	Gas Phase Chemilumi-nescence	100 ppb (188 $\mu g/m^3$)	Same as Primary Standard	Gas Phase Chemilumi-nescence
	Annual Arithmetic Mean	0.030 ppm (57 $\mu g/m^3$)		0.053 ppm (100 $\mu g/m^3$)		
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 $\mu g/m^3$)	Ultraviolet Fluorescence	75 ppb (196 $\mu g/m^3$)	---	Ultraviolet Flourescence; Spectrophoto-metry (Pararo-saniline Method)
	3 Hour	---		---	0.5 ppm (1300 $\mu g/m^3$)	
	24 Hour	0.04 ppm (105 $\mu g/m^3$)		0.14 ppm (for certain areas)	---	
	Annual Arithmetic Mean	---		0.030 ppm (for certain areas)	---	
Lead[12, 13]	30 Day Average	1.5 $\mu g/m^3$	Atomic Absorption	---	---	High Volume Sampler and Atomic Absorption
	Calendar Quarter	---		1.5 $\mu g/m^3$ (for certain areas)	Same as Primary Standard	
	Rolling 3-Month Average	---		0.15 $\mu g/m^3$		
Visibility Reducing Particles[14]	8 Hour	ARB converted visibility standards to instrumental equivalents in 1989	Beta Attenuation and Transmittance through Filter Tape	**No National Standards**		
Sulfates	24 Hour	25 µg/m3	Ion Chromatography			
Hydrogen Sulfide (H_2S)	1 Hour	0.03 ppm (42 $\mu g/m^3$)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 $\mu g/m^3$)	Gas Chromatography			

Table 3.1-2
State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]

1 California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, 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.

2 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 PM2.5, 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 U.S. EPA for further clarification and current national policies.

3 Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4 Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5 National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health

6 National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7 Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm

9 On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m3 to 12.0 µg/m3. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 µg/m3, as was the annual secondary standard of 15 µg/m3. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

10 To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

11. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

12 The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

13 The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

14 In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: California Air Resources Board. Ambient Air Quality Standards. Accessed August 2021 at: https://ww2.arb.ca.gov/sites/default/files/2020-03/aaqs2_0.pdf.

Table 3.1-3
Air Pollutant Sources, Effects and Control

Pollutant	Sources	Effects	Prevention and Control
Ozone (O_3)	Formed when reactive organic gases (ROG) and nitrogen oxides react in the presence of sunlight. ROG sources include any source that burns fuels, (e.g., gasoline, natural gas, wood, oil) solvents, petroleum processing and storage and pesticides.	Breathing Difficulties, Lung Tissue Damage, Damage to Rubber and Some Plastics	Reduce motor vehicle reactive organic gas (ROG) and nitrogen oxide emissions through emissions standards, reformulated fuels, inspections programs, and reduced vehicle use. Limit ROG emissions from commercial operations and consumer products. Limit ROG and NOx emissions from industrial sources such as power plants and refineries. Conserve energy.
Respirable Particulate Matter (PM_{10})	Road Dust, Windblown Dust (Agriculture) and Construction (Fireplaces) Also formed from other pollutants (acid rain, NOx, SOx, organics). Incomplete combustion of any fuel.	Increased Respiratory Disease, Lung Damage, Cancer, Premature Death, Reduced Visibility, Surface Soiling	Control Dust Sources, Industrial Particulate Emissions, Wood Burning Stoves and Fireplaces Reduce secondary pollutants which react to form PM_{10}. Conserve energy.
Fine Particulate Matter ($PM_{2.5}$)	Fuel Combustion in Motor Vehicles, Equipment and Industrial Sources, Residential and Agricultural Burning. Also formed from reaction of other pollutants (acid rain, NOx, SOx, organics).	Increases Respiratory Disease, Lung Damage, Cancer, Premature Death, Reduced Visibility, Surface Soiling	Reduces Combustion Emissions from Motor Vehicles, Equipment, Industries and Agriculture and Residential Burning. Precursor controls, like those for ozone, reduce fine particle formation in the atmosphere.
Carbon Monoxide (CO)	Any source that burns fuel such as automobiles, trucks, heavy construction equipment, farming equipment and residential heating.	Chest Pain in Heart Patients, Headaches, Reduced Mental Alertness	Control motor vehicle and industrial emissions. Use oxygenated gasoline during winter months. Conserve energy.
Nitrogen Dioxide (NO_2)	See Carbon Monoxide	Lung Irritation and Damage. Reacts in the atmosphere to form ozone and acid rain	Controls motor vehicle and industrial combustion emissions. Conserve energy.
Lead	Metal Smelters, Resource Recovery, Leaded Gasoline, Deterioration of Lead Paint	Learning Disabilities, Brain and Kidney Damage	Control metal smelters, no lead in gasoline. Replace leaded paint with non-lead substitutes.
Sulfur Dioxide (SO_2)	Coal or Oil Burning Power Plants and Industries, Refineries, Diesel Engines	Increases lung disease and breathing problems for asthmatics. Reacts in the atmosphere to form acid rain.	Reduces the use of high sulfur fuels (e.g., use low sulfur reformulated diesel or natural gas). Conserve energy.
Visibility Reducing Particles	See $PM_{2.5}$	Reduces visibility (e.g., obscures mountains and other scenery), reduced airport safety, lower real estate value, discourages tourism.	See $PM_{2.5}$
Sulfates	Produced by the reaction in the air of SO_2 (see SO_2 sources), a component of acid rain.	Breathing Difficulties, Aggravates Asthma, Reduced Visibility	See SO_2
Hydrogen Sulfide	Geothermal Power Plants, Petroleum Production and Refining, Sewer Gas	Nuisance Odor (Rotten Egg Smell), Headache and Breathing Difficulties (Higher Concentrations)	Control emissions from geothermal power plants, petroleum production and refining, sewers, sewage treatment plants.

Sources: California Air Resources Board. Common Air Pollutants. Accessed August 2021 at: https://ww2.arb.ca.gov/resources/common-air-pollutants.

Toxic Air Contaminants

"Toxic pollutants in California are identified as toxic air contaminates (TACs) and are listed in the AB2588 Air Toxic "Hot Spots" and Assessment Act's "Emissions Inventory Criteria and Guideline Regulation." A subset of these pollutants has been listed by the Office of Environmental Health Hazard Assessment (OEHHA) as having acute, chronic, and/or carcinogenic effects, as defined by California Health and Safety Code (CH&SC) §39655. Toxic pollutants used for modeling should not be confused with the 189 Hazardous Air Pollutants (HAP) listed by EPA in the Clean Air Act. The California TAC list has ~700 plus pollutants listed."[8]

Air Quality Conditions in Tulare County

Tulare County lies within the southern portion of the SJVAB. Topography and climate are unusually favorable for the development of air pollution, especially in the southern portion of the air basin where pollutants build up against the Tehachapi Mountains. Due to the SJVAB's light wind patterns, long periods of warm and sunny days, and surrounding mountains, air quality problems can occur at any time of the year.

Existing local air quality conditions can be characterized by reviewing air pollution concentration data near the Project area for comparison with the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). Air samples are collected continuously for some pollutants and periodically for other pollutants depending on the type of monitoring equipment installed. Monitoring sites are usually chosen to be representative of the emissions in a community. There are currently 37 air monitoring stations in the SJVAB, which include 23 stations operated by the Air District, one (1) station operated jointly by the Air District and the ARB, nine (9) stations operated by the ARB, two (2) stations operated by the National Park Service, and two (2) stations operated on Native American tribal lands.[9] Of these, there are currently four (4) stations in Tulare County: Visalia–Church; Porterville; Sequoia National Park–Lower Kaweah; and Sequoia National Park–Ash Mountain. However, CO and SO_2 are not collected in these four (4) stations, so the next closest monitor with those emissions must be identified.

Table 3.1-4 identifies the approximate distance from the monitoring station to the community and the air pollutants monitored at each station in the County.

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[8] Air District. GAMAQI. Page 10.

[9] Air District. 2020 Air Monitoring Network Plan. Figure 1-1, Page 2. Accessed August 2021 at: http://www.valleyair.org/aqinfo/Docs/2020-Air-Monitoring-Network-Plan.pdf.

Table 3.1-4
Air Quality Monitoring Stations (as of 2020)

Monitoring Station	Approximate Distance and Direction from Project Site	Pollutants Monitored
Porterville	30 miles southeast	O_3, $PM_{2.5}$
Ash Mountain	31 miles northeast	O_3, $PM_{2.5}$
Lower Kaweah	46 miles northeast	O_3
Visalia-Church St.	6.5 miles southeast	NO_2, O_3, PM_{10}, $PM_{2.5}$
Fresno-Garland	30 miles northwest	NO_2, O_3, PM_{10}, $PM_{2.5}$, SO_2, CO, Toxics

** This station measures temperature, humidity, wind direction, wind speed, barometric pressure and solar radiation; no criteria pollutants are measured.*

Sources:
San Joaquin Valley Unified Air Pollution Control District. 2020 Air Monitoring Network Assessment., Figures 1-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, and 2-9. http://www.valleyair.org/aqinfo/Docs/2020-Air-Monitoring-Network-Assessment.pdf;
California Air Resources Board. Air Monitoring Site Interactive Map. https://ww3.arb.ca.gov/qaweb/mapdemo/map_module.php.

For the purposes of background data and this air quality assessment, this analysis relied on data collected in the last available three-year period for the monitoring station that is located in the closest proximity to the Project site (Visalia-N Church Station). **Table 3.1-5** provides the background concentrations for ozone, particulate matter of 10 microns (PM_{10}), particulate matter of less than 2.5 microns ($PM_{2.5}$), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb) as of August 2021. No data is available for carbon monoxide, hydrogen sulfide, vinyl chloride or other toxic air contaminants in Tulare County or any nearby counties.

Based on the air monitoring data from this station, two measured air pollutants, ozone and particulate matter, have generally exceeded state air quality standards. The amount over the standards and the number of days each year that the standards were exceeded provide an indicator of the severity of the air quality problems in the local area.

The health impacts of the various air pollutants of concern can be presented in a number of ways. The clearest in comparison is to the state and federal ozone standards. If concentrations are below the standard, it is safe to say that no health impact would occur to anyone. When concentrations exceed the standard, impacts will vary based on the amount the standard is exceeded. The EPA developed the Air Quality Index (AQI) as an easy to understand measure of health impact compared to concentrations in the air. As the SJVAB is in nonattainment at the federal level for ozone and PM2.5, the discussion below includes only those emissions with respect to the AQI. **Table 3.1-6** and **Table 3.1-7** provide a description of the health impacts of ozone and $PM_{2.5}$, respectively, at different concentrations.

Table 3.1-5
Air Quality Monitoring Summary 2018 - 2020

Air Pollutant	Averaging Time	Item	2018	2019	2020
Ozone (O_3) [1]	1-hour	Max 1-hour (ppm)	0.112	0.093	
		Days > State Standard (0.10 ppm)	8	0	
	8-hour	State Max 8-hour (ppm)	0.095	0.082	
		Days > State Standard (0.07 ppm)	58	26	
		National Max 8-hour (ppm)	0.094	0.082	
		Days > National Standard (0.07 ppm)	53	22	
Inhalable coarse particles (PM_{10}) [1]	Annual	National Annual Average (μg/m^3)	52.5	45.7	
	24-hour	State Max 24-hour (μg/m^3)	159.6	418.5	
		Est. Days > State Standard (50 μg/m3)	164.4	115.8	
		National Max 24-hour (μg/m^3)	153.4	411.1	
		Est. Days > National Standard (150 μg/m^3)	0	5	
Fine particulate matter ($PM_{2.5}$) [1]	Annual	National Annual Average (μg/m^3)	17.3	12.9	
	24-hour	National Max 24-hour (μg/m^3)	86.8	47.2	
		Est. Days > National Standard (35 μg/m^3)	42.3	19.9	
Carbon monoxide (CO) [2]	8-hour	Max 8-hour (ppm)	---	---	
		Days > State and National Standards (9 ppm)	---	---	
Nitrogen dioxide (NO_2) [1]	Annual	State Annual Average (ppm)	0.010	0.009	
	1-hour	National Max 1-hour (ppm)			
		Days > State Standard (0.18 ppm)	0	0	0
		Days > National Standard (0.10 ppb)	0	0	0
Sulfur dioxide (SO_2) [3]	Annual	Annual Average (ppm)	---	---	---
	24-hour	Max 24-hour (ppm)	---	---	---

Abbreviations: ppm = parts per million; > = exceeded; μg/m^3= micrograms per cubic meter; ID = insufficient data; max = maximum

State Standard = CAAQS; National Standard = NAAQS

[1] data from Visalia-N Church station

[2] 2012 was the last year of data available for this pollutant.

[3] 2013 was the last year of data available for this pollutant

Sources: California Air Resources Board. Top 4 Summary. http://www.arb.ca.gov/adam/topfour/topfour1.php. Accessed August 2021.

Table 3.1-6
Air Quality Index and Health Effects of Ozone

Air Quality Index/ Ozone Concentration	Health Effects Description
AQI 0-50 – Good Concentration 0-54 ppb	Sensitive Groups: Children and people with asthma are the groups most at risk.
	Health Effects Statements: None
	Cautionary Statements: None
AQI 51-100 – Moderate Concentration 55-70 ppb	Sensitive Groups: Children and people with asthma are the groups most at risk.
	Health Effects Statements: Unusually sensitive individuals may experience respiratory symptoms.
	Cautionary Statements: Unusually sensitive people should consider limiting prolonged outdoor exertion.
AQI 101-150 – Unhealthy for Sensitive Groups Concentration 71-85 ppb	Sensitive Groups: Children and people with asthma are the groups most at risk.
	Health Effects Statements: Increasing likelihood of respiratory symptoms and breathing discomfort in active children and adults and people with respiratory disease, such as asthma.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.
AQI 151-200 – Unhealthy Concentration 86-105 ppb	Sensitive Groups: Children and people with asthma are the groups most at risk.
	Health Effects Statements: Greater likelihood of respiratory symptoms and breathing difficulty in active children and adults and people with respiratory disease, such as asthma; possible respiratory effects in general population.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.
AQI 201-300 – Very Unhealthy Concentration 106-200 ppb	Sensitive Groups: Children and people with asthma are the groups most at risk.
	Health Effects Statements: Increasingly severe symptoms and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma; increasing likelihood of respiratory effects in general population.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion.
AQI 301-500 – Hazardous* Concentration ≥405 ppb	Sensitive Groups: Children and people with asthma are the groups most at risk.
	Health Effects Statements: Severe respiratory effects and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma; increasingly severe respiratory effects likely in general population.
	Cautionary Statements: Everyone should avoid all outdoor exertion.

* AQI greater than 300 are calculated using 1-hr ozone data (under 1-hr ozone concentrations 375-404 ppb are identified as Very Unhealthy)

Sources: U.S. Environmental Protection Agency. AirNow. Air Quality Index Basics. https://www.airnow.gov/aqi/aqi-basics/ and AirNow. AQI Calculator, https://www.airnow.gov/aqi/aqi-calculator-concentration/ Accessed August 2021.

Table 3.1-7
Air Quality Index and Health Effects of $PM_{2.5}$

Air Quality Index/ $PM_{2.5}$ Concentration	Health Effects Description
AQI 0-50 – Good Concentration 0-12.0 μg/m^3	Sensitive Groups: People with respiratory or heart disease, the elderly and children are the groups most at risk.
	Health Effects Statements: None
	Cautionary Statements: None
AQI 51-100 – Moderate Concentration 12.1-35.4 μg/m^3	Sensitive Groups: People with respiratory or heart disease, the elderly and children are the groups most at risk.
	Health Effects Statements: Unusually sensitive people should consider reducing prolonged or heavy exertion.
	Cautionary Statements: Unusually sensitive people should consider reducing prolonged or heavy exertion.
AQI 101-150 – Unhealthy for Sensitive Groups Concentration 35.5-55.4 μg/m^3	Sensitive Groups: People with respiratory or heart disease, the elderly and children are the groups most at risk.
	Health Effects Statements: Increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly.
	Cautionary Statements: People with respiratory or heart disease, the elderly and children should limit prolonged exertion.
AQI 151-200 – Unhealthy Concentration 55.5-150.4 μg/m^3	Sensitive Groups: People with respiratory or heart disease, the elderly and children are the groups most at risk.
	Health Effects Statements: Increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; increased respiratory effects in general population.
	Cautionary Statements: People with respiratory or heart disease, the elderly and children should avoid prolonged exertion; everyone else should limit prolonged exertion.
AQI 201-300 – Very Unhealthy Concentration 150.5-250.4 μg/m^3	Sensitive Groups: People with respiratory or heart disease, the elderly and children are the groups most at risk.
	Health Effects Statements: Significant aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; significant increase in respiratory effects in general population.
	Cautionary Statements: People with respiratory or heart disease, the elderly and children should avoid any outdoor activity; everyone else should avoid prolonged exertion.
AQI 301-500 – Hazardous Concentration ≥250.5 μg/m^3	Sensitive Groups: People with respiratory or heart disease, the elderly and children are the groups most at risk.
	Health Effects Statements: Serious aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; serious risk of respiratory effects in general population.
	Cautionary Statements: Everyone should avoid any outdoor exertion; people with respiratory or heart disease, the elderly and children should remain indoors.

Sources: U.S. Environmental Protection Agency. AirNow. Air Quality Index Basics. https://www.airnow.gov/aqi/aqi-basics/ and AirNow. AQI Calculator, https://www.airnow.gov/aqi/aqi-calculator-concentration/ Accessed August 2021.

REGULATORY SETTING

Federal Agencies & Regulations

Federal Clean Air Act

"The Federal Clean Air Act (CAA), adopted in 1970 and amended twice thereafter (including the 1990 amendments), establishes the framework for modern air pollution control. The act directs the Environmental Protection Agency (EPA) to establish ambient air standards, the National Ambient Air Quality Standards (NAAQS)… for six pollutants: ozone, carbon monoxide, lead, nitrogen dioxide, particulate matter (less than 10 microns in diameter [PM_{10}] and less than 2.5 microns in diameter [$PM_{2.5}$]), and sulfur dioxide. The standards are divided into primary and secondary standards; the former are set to protect human health with an adequate margin of safety and the latter to protect environmental values, such as plant and animal life.

Areas that do not meet the ambient air quality standards are called "non-attainment areas." The Federal CAA requires each state to submit a State Implementation Plan (SIP) for non-attainment areas. The SIP, which is reviewed and approved by the EPA, must demonstrate how the federal standards will be achieved. Failing to submit a plan or secure approval could lead to the denial of federal funding and permits for such improvements as highway construction and sewage treatment plants. For cases in which the SIP is submitted by the State but fails to demonstrate achievement of the standards, the EPA is directed to prepare a federal implementation plan or EPA can "bump up" the air basin in question to a classification with a later attainment date that allows time for additional reductions needed to demonstrate attainment, as is the case for the San Joaquin Valley.

SIPs are not single documents. They are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations and federal controls. The California SIP relies 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. California State law makes the California Air Resources Board (CARB) the lead agency for all purposes related to the SIP. Local Air Districts and other agencies, such as the Bureau of Automotive Repair and the Department of Pesticide Regulation, prepare SIP elements and submit them to CARB for review and approval. The CARB forwards SIP revisions to the EPA for approval and publication in the Federal Register."[10]

State Agencies & Regulations

California Clean Air Act

"The California CAA of 1988 establishes an air quality management process that generally parallels the federal process. The California CAA, however, focuses on attainment of the State ambient air quality standards (see Table 3.3-1 [of the General Plan RDEIR]), which, for certain pollutants and averaging periods, are more stringent than the comparable federal standards.

[10] Tulare County General Plan 2030 Update RDEIR. Pages 3.3-1 to 3.3-2.

Responsibility for meeting California's standards is addressed by the CARB and local air pollution control districts (such as the eight county SJVAPCD, which administers air quality regulations for Tulare County). Compliance strategies are presented in district-level air quality attainment plans.

The California CAA requires that Air Districts prepare an air quality attainment plan if the district violates State air quality standards for criteria pollutants including carbon monoxide, sulfur dioxide, nitrogen dioxide, $PM_{2.5}$, or ozone. Locally prepared attainment plans are not required for areas that violate the State PM_{10} standards. The California CAA requires that the State air quality standards be met as expeditiously as practicable but does not set precise attainment deadlines. Instead, the act established increasingly stringent requirements for areas that will require more time to achieve the standards."[11]

"The air quality attainment plan requirements established by the California CAA are based on the severity of air pollution caused by locally generated emissions. Upwind air pollution control districts are required to establish and implement emission control programs commensurate with the extent of pollutant transport to downwind districts."[12]

California Air Resources Board

"The CARB is responsible for establishing and reviewing the State ambient air quality standards, compiling the California State Implementation Plan (SIP) and securing approval of that plan from the U.S. EPA. As noted previously, federal clean air laws require areas with unhealthy levels of ozone, inhalable particulate matter, carbon monoxide, nitrogen dioxide, and sulfur dioxide to develop SIPs. SIPs are comprehensive plans that describe how an area will attain NAAQS. The 1990 amendments to the Federal CAA set deadlines for attainment based on the severity of an area's air pollution problem. State law makes CARB the lead agency for all purposes related to the SIP. The California SIP is periodically modified by the CARB to reflect the latest emission inventories, planning documents, and rules and regulations of various air basins. The CARB produces a major part of the SIP for pollution sources that are statewide in scope; however, it relies on the local Air Districts to provide emissions inventory data and additional strategies for sources under their jurisdiction. The SIP consists of the emission standards for vehicular sources and consumer products set by the CARB, and attainment plans adopted by the local air agencies as approved by CARB. The EPA reviews the air quality SIPs to verify conformity with CAA mandates and to ensure that they will achieve air quality goals when implemented. If EPA determines that a SIP is inadequate, it may prepare a Federal Implementation Plan for the nonattainment area, and may impose additional control measures.

In addition to preparation of the SIP, the CARB also regulates mobile emission sources in California, such as construction equipment, trucks, automobiles, and oversees the activities of air quality management districts and air pollution control districts, which are organized at the county or regional level. The local or regional Air Districts are primarily responsible for regulating

[11] Tulare County General Plan 2030 Update RDEIR. Pages 3.3-2 to 3.3-3.
[12] Ibid. 3.3-5.

stationary emission sources at industrial and commercial facilities within their jurisdiction and for preparing the air quality plans that are required under the Federal CAA and California CAA."[13]

CARB Low-Emission Vehicle Program

"CARB adopted the first Low-Emission Vehicle (LEV) regulations in 1990, requiring automobile manufacturers to introduce progressively cleaner light- and medium-duty vehicles with more durable emission controls from the 1994 through 2003 model years. By adopting these regulations, CARB established the most stringent criteria pollutant exhaust regulations ever for light- and medium-duty vehicles.

The regulations, now referred to as the LEV I regulations, included three primary elements: 1) tiers of exhaust emission standards for increasingly more stringent categories of low-emission vehicles, 2) a mechanism requiring each auto manufacturer to phase-in a progressively cleaner mix of vehicles from year to year with the option of credit banking and trading, and 3) a requirement that a specified percentage of passenger cars and light-duty trucks be zero-emission vehicles (ZEVs) with no exhaust or evaporative emissions. Building on LEV I, the second-generation LEV II regulations continued to reduce criteria pollutant emissions from new light- and medium-duty vehicles starting with the 2004 model year.

In 2004, CARB approved the landmark Pavley regulations to require automakers to control greenhouse gas emissions from new vehicles for the 2009 through 2016 model years. These were the first regulations in the nation to control greenhouse gas emissions from motor vehicles. Upon adoption of federal greenhouse gas standards by the United States Environmental Protection Agency (U.S. EPA) that preserved the benefits of the Pavley regulations, the Pavley regulations were revised to accept compliance with the federal standards as compliance with California's standards in the 2012 through 2016 model years. This is referred to as the "deemed to comply" option.

In 2012, CARB adopted the LEV III regulations as part of the Advanced Clean Cars rulemaking package that also includes the state's ZEV regulation. The LEV III regulations include increasingly stringent emission standards for criteria pollutants and greenhouse gases for new passenger vehicles through the 2025 model year."[14]

CARB On-Road Heavy-Duty Vehicle Program

"The On-Road Heavy-Duty Certification Program is responsible for the certification of new vehicles with gross vehicle weight ratings greater than 8,500lbs and engines installed in such vehicles to the applicable emissions standards and other requirements contained in the California regulations and test procedures for heavy-duty engines and vehicles. Vehicles with gross vehicle weight ratings 8,500-14,000lbs and engines installed in such vehicles may be certified using the heavy-duty engine or light-duty chassis certification procedures. The certification process ensures

[13] Op. Cit. 3.3-6 to 3.3-7.

[14] CARB. Low-Emission Vehicle Program. About. Accessed August 2021 at: https://ww2.arb.ca.gov/our-work/programs/low-emission-vehicle-program/about.

that new heavy-duty engines and vehicles produced in California meet current emissions standards."[15]

CARB Truck and Bus Regulation

"The Truck and Bus Regulation is necessary to meet federal attainment standards. This regulation requires heavy-duty diesel vehicles that operate in California to reduce toxic air contaminants (TACs) emissions from their exhaust. Diesel exhaust is responsible for 70% of the cancer risk from airborne toxics. Therefore, by January 1, 2023, nearly all trucks and buses will be required to have 2010 or newer model year engines to reduce particulate matter (PM) and oxides of nitrogen (NOx) emissions. To help ensure that the benefits of this regulation are achieved, starting in 2020, only vehicles compliant with this regulation will be registered by the California Department of Motor Vehicles (DMV).

All CARB regulations on trucks and off-road vehicles, including the Truck and Bus Regulation, continue to be California law. There have been no direct federal law changes to any other rule.

As heavy-duty on-road vehicles are such a significant source of pollutants, the Truck and Bus Regulation is one of the most far-reaching and important tools to reduce smog-forming and toxic emissions and protect public health in disadvantaged communities. It is a key element in CARB's Diesel Risk reduction plan and the State Implementation Plan, both of which are designed to provide clean air for Californians by helping to meet state and federal health-protective standards. Starting January 1, 2020, SB1 only allows vehicles compliant with this regulation to be registered by the California Department of Motor Vehicles (DMV)."[16]

CARB Regulation for In-Use Off-Road Diesel Vehicles

"The goal of the In-Use Off-Road Diesel-Fueled Fleets Regulation is to reduce particulate matter (PM) and oxides of nitrogen (NOx) emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. The regulation covers a wide scope of vehicle types used in (but not limited to) industries as diverse as construction, air travel, manufacturing, landscaping, and ski resorts."[17]

ARB Airborne Toxic Control Measure for Asbestos

"The California Air Resources Board (CARB) and the United States Environmental Protection Agency (U.S. EPA) identified asbestos [asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite (amosite), tremolite, actinolite, and anthophyllite] as a toxic air contaminant (TAC) and hazardous air pollutant, respectively. CARB identified asbestos as a TAC in 1986. Subsequently, CARB adopted two Airborne Toxic Control Measures (ATCM) to address some of the health concerns associated with exposure to asbestos:

[15] CARB. On-Road Heavy-Duty Certification Program, About. Accessed February 2021 at: https://ww2.arb.ca.gov/our-work/programs/road-heavy-duty-certification-program/about.

[16] CARB. Truck and Bus Regulation, About. Accessed February 2021 at: https://ww2.arb.ca.gov/our-work/programs/truck-and-bus-regulation/about.

[17] CARB. In-Use Off-Road Diesel-Fueled Fleets Regulation, About. Accessed February 2021 at: https://ww2.arb.ca.gov/our-work/programs/use-road-diesel-fueled-fleets-regulation/about.

- ATCM for Surfacing Applications (adopted in 1990)
- ATCM for Construction, Grading, Quarrying, and Surface Mining Operations (adopted in 2001)

The two asbestos regulations address minimizing the placement of asbestos-containing materials on unpaved surfaces and requiring work practices to minimize asbestos emissions from such activities where naturally-occurring asbestos is found or is likely to be found. The ATCMs were intended to minimize the release of asbestos fibers during activities involving the handling of asbestos.

The U.S. EPA requires specific work practices to control the release of asbestos fibers relating to a renovation and/or demolition activity. The U.S. EPA delegates enforcement authority to state and local agencies for renovation and/or demolition activities that involve the handling of asbestos. CARB and the states 35 local air districts are delegated the authority to enforce the U.S. EPA's National Emission Standards for Hazardous Air Pollutants regulations for asbestos."[18]

<u>CARB Airborne Toxic Control Measures for Diesel Engines</u>

"Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot." In 1998, following a 10-year scientific assessment process, ARB identified diesel PM as a toxic air contaminant based on its potential to cause cancer and other health problems, including respiratory illnesses, and increased risk of heart disease. Subsequent to this action, research has shown that diesel PM also contributes to premature deaths. Health risks from diesel PM are highest in areas of concentrated emissions, such as near ports, railyards, freeways, or warehouse distribution centers. Exposure to diesel PM is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems.

Both private businesses and public agencies operating stationary prime and emergency standby diesel engines in California are subject to the ATCM. Emergency standby engines are those that are used only when normal power or natural gas service fails or when needed for fire suppression or flood control. Prime engines are those that are not used for emergency standby purposes. Examples of businesses that are affected include private schools and universities, private water treatment facilities, hospitals, power generation, communications, broadcasting, building owners, agricultural production, banks, hotels, refiners, resorts, recycling centers, quarries, wineries, dairies, food processing, and manufacturing entities. A variety of public agencies are also affected including military installations, prisons and jails, public schools and universities, and public water and wastewater treatment facilities."[19]

[18] CARB. Naturally Occurring Asbestos. About. Accessed August 2021 at: https://ww2.arb.ca.gov/our-work/programs/naturally-occurring-asbestos/about.

[19] CARB. Frequently Asked Questions. Airborne Toxic Control Measure for Stationary Compression Ignition Engines, Requirements for Stationary Engines Use in Non-Agricultural Applications. https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/atcmfaq.pdf. Accessed August 2021.

"The ATCM for stationary diesel engines was originally adopted by the Air Resources Board (ARB or Board) at the February 26, 2004, Board Hearing. On November 8, 2004, the Final Regulation Order for the ATCM was approved by the Office of Administrative Law (OAL) and filed with the Secretary of State. The rulemaking became effective December 8, 2004. Among other provisions, the ATCM established emission standards and fuel use requirements for new and in-use stationary engines used in prime and emergency back-up applications (non-agricultural) and for new stationary engines used in agricultural applications.

A modification of the 2004 action was necessary to address the required PM emission standard for new agricultural engines. Therefore, an Emergency Regulatory Amendment was heard at the March 17, 2005 Board Hearing. On April 4, 2005, the Office of Administrative Law approved the amendments to the ATCM which removed the requirement that new stationary agriculture pump engines meet the 0.15g/bhp-hr PM standard. Instead, such engines must meet the appropriate Tier 2 emissions standard. The Board approved a temporary emergency action (Resolution 05-29) to replace the 0.15 g/bhp-hr PM standard for these engines with the appropriate ARB and federal new off-road/nonroad engine certification standards. Following this emergency rulemaking proceeding, ARB conducted another rulemaking in accordance with all procedural requirements of the California Administrative Procedure Act to make a modified version of the emergency amendments permanent at the May 26, 2005 Board Hearing. The final rulemaking package was approved by OAL and filed with the Secretary of the State on September 9, 2005. The regulation became effective that same day.

In November 2006, the Board approved amendments to the ATCM to include requirements for stationary in-use agricultural engines. Additional amendments addressed implementation and compliance issues primarily involving non-agricultural emergency standby and prime engines. These issues included streamlining certain fuel reporting requirements, updating electricity tariff schedules, modifying the definitions of California (CARB) diesel fuel and alternative diesel fuel, an alternative compliance demonstration option to the 0.01 g/bhp-hr diesel PM standard, and a "sell-through" provision to allow stationary diesel-fueled engine wholesalers and retailers to sell (and owners or operators to use) stock engines that do not meet new, more stringent emissions standards when they become effective. The amendments also authorized the Executive Officer or local air district to allow the sale, purchase, or installation of a new stock engine from the previous model year to meet new stationary diesel-fueled engine emission standards, if verifiable information is provided documenting that current mode year engines meeting the new emission standards are not available in sufficient numbers or in a sufficient range of makes, models, and horsepower ratings. The OAL approved the amendments on September 18, 2007, which became effective October 18, 2007.

In October 2010, the Board approved amendments to the ATCM to more closely align with the emission standards for new stationary diesel-fueled emergency standby engines, including direct-drive fire pump engines, and new prime engines with the federal Standards of Performance for Stationary Compression- Ignition Internal Combustion Engines (NSPS) promulgated July 11,

2006. Amendments to help clarify provisions in the ATCM and address new information, and to remove provisions no longer needed were also approved."[20]

Regional Agencies & Regulations

San Joaquin Valley Air Pollution Control District

The San Joaquin Valley Air Pollution Control District (Air District) is made up of eight counties in California's Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Tulare Counties, and the San Joaquin Valley portion of Kern County.

"The San Joaquin Valley Air District is a public health agency whose mission is to improve the health and quality of life for all Valley residents through efficient, effective and entrepreneurial air quality-management strategies."[21] The Air District's 11 core values include: protection of public health; active and effective air pollution control efforts with minimal disruption to the San Joaquin Valley's economic prosperity; outstanding customer service; ingenuity and innovation; accountability to the public; open and transparent public process; recognition of the uniqueness of the San Joaquin Valley; continuous improvement; effective and efficient use of public funds; respect for the opinions and interests of all San Joaquin Valley residents; and robust public outreach and education on Valley air quality progress and continuing air quality efforts. To achieve these core values the Air District has adopted air quality plans pursuant to the California CAA and a comprehensive list of rules to limit air quality impacts. The air plans currently in effect in the SJVAB and specific rules that apply to the Project are listed and described further below.

Ozone Plans[22]

"The SJVAB has severe ozone problems. The EPA has required the Air District to demonstrate in a plan, substantiated with modeling, that the ozone NAAQS could be met by the November 15, 2005 deadline. However, the district could not provide this demonstration for several reasons, including that its achievement would require regulation of certain source categories not currently under the jurisdiction of the district. According to the district, in order to meet the standard the SJVAB must reduce the total emissions inventory by an additional 30 percent (300 tons per day). Because attainment by the deadline could not be demonstrated by the mandated deadlines, the federal sanction clock was started. The clock was to be stopped if the Air District SIP could demonstrate compliance with specified federal requirements by November 15, 2005. However, the district recognized that it could not achieve demonstration in time. Therefore, the district, through petition by the State on behalf of SJVAPCD, sought a change in the federal nonattainment classification from "severe" to "extreme" nonattainment with the ozone standard. An extreme nonattainment designation would effectively move the compliance deadline to year 2010 before federal sanctions would begin.

[20] Ibid. 1 and 2.

[21] Air District. About the Air District. The Air District's Mission. Accessed August 2021 at: http://www.valleyair.org/General_info/aboutdist.htm#Mission.

[22] Air District. The various ozone plans can be found on the Air District's website at: http://www.valleyair.org/Air_Quality_Plans/Ozone_Plans.htm. Accessed August 2021.

On February 23, 2004, EPA publicly announced its intention to grant the request by the State of California to voluntarily reclassify the SJVAB from a "severe" to an "extreme" 1-hour ozone nonattainment area. The EPA stated that, except for a demonstration of attainment of the ozone standard by 2005, the Air District has submitted all of the required severe area plan requirements and they were deemed complete. The CARB submitted the 2004 Extreme Ozone Attainment Demonstration Plan to EPA on November 15, 2004. On August 21, 2008, the District adopted Clarifications for the 2004 Extreme Ozone Attainment Demonstration Plan for 1-hour Ozone, and on October 16, 2008, EPA proposed to approve the District's 2004 Extreme Ozone Attainment Demonstration Plan for 1-hour Ozone."[23]

The planning requirements for the 1-hour plan remain in effect until replaced by a federal 8-hour ozone attainment plan. The Air District adopted the *2004 Extreme Ozone Attainment Demonstration Plan* in October 2004. However, since EPA revoked the federal 1-hour standard effective June 15, 2005. EPA did not act on this plan until 2010, when a court decision required EPA action. The EPA approved the plan, including revisions to the plan, on March 8, 2010. EPA's action approved the plan, but subsequent litigation led to a court finding that EPA had not properly considered new information available since the District adopted the plan in 2004. EPA thus withdrew its plan approval in November 2012, and the Air District and ARB withdrew this plan from consideration. The Air District developed a new plan for the revoked standard and adopted the *2013 Plan for the Revoked 1-Hour Ozone Standard* in September 2013. While this plan does not establish new emissions reductions strategies, it builds upon the District's 8-hour ozone and particulate matter strategies. Under these combined efforts, the SJVAB 1-hour ozone concentrations have been and will continue to improve. The modeling contained in the plan confirms that the SJVAB will attain the revoked 1-hour ozone standard by 2017.

EPA originally classified the Air Basin as serious nonattainment for the 1997 federal 8-hour ozone standard with an attainment date of 2013. On April 30, 2007, the District's Governing Board adopted the *2007 Ozone Plan*, which contained analysis showing a 2013 attainment target to be infeasible. This plan details the Air District's plan for achieving attainment on schedule with an "extreme nonattainment" deadline of 2024. At its adoption of the plan, the District also requested a reclassification to extreme nonattainment. ARB approved the plan in June 2007, and EPA approved the request for reclassification to extreme nonattainment on April 15, 2010. The plan contains measures to reduce ozone and particulate matter precursor emissions to bring the SJVAB into attainment with the federal 8-hour ozone standard. The plan calls for a 75-percent reduction of NO_x and a 25-percent reduction of ROG. The plan, with innovative measures and a "dual path" strategy, assures expeditious attainment of the federal 8-hour ozone standard for all Basin residents. The Air District adopted the plan on April 30, 2007 and the ARB approved the plan on June 14, 2007. The *2007 Ozone Plan* requires yet to be determined "Advanced Technology" to achieve additional reductions after 2021 to attain the standard at all monitoring stations in the Basin by 2024 as allowed for areas designated extreme nonattainment by the federal CAA.

The EPA revised the federal 8-hour ozone standard in 2008. To address this standard on June 16, 2016, the Air District adopted the *2016 Ozone Plan for 2008 8-hour Ozone Standard*, which the

[23] Tulare County General Plan 2030 Update RDEIR. Pages 3.3-12 to 3.3-13.

SJVAB must attain by 2031. This plan demonstrates that the Air District's attainment strategy satisfies all federal CAA requirements and ensures expeditious attainment of the 75 parts per billion 8-hour ozone standard. The plan includes a "black box" provision to satisfy the contingency requirements under the federal CAA. The "black box" represents reductions that would be needed to attain the standard for which specific measures or technologies are not currently available. The strategy in this plan will reduce NOx emissions by over 60% between 2012 and 2031.

In October 2015, the EPA again revised and lowered the federal 8-hour ozone standard to 70 parts per billion effective December 28, 2018. Addressing the 2015 8-hour ozone standard will pose a tremendous challenge for the San Joaquin Valley, given the naturally high background ozone levels and ozone transport into the San Joaquin Valley. The Air District will be required to prepare a new plan to address the 2015 standard.

"The County continues to evaluate and consider a variety of Federal, State, and Air District programs in order to respond to the non-attainment designation for Ozone that the SJVAB has received, and will continue to adopt resolutions to implement these programs. The Tulare County Board of Supervisor resolutions are described below. These resolutions were adopted in 2002 and 2004, respectively.

Resolution 2002-0157. Resolution 2002-0157, as adopted on March 5, 2002, requires the County to commit to implementing the Reasonably Available Control Measures included in the Resolution. The following Reasonably Available Control Measures were included in the resolution:

- Increasing transit service to the unincorporated communities of Woodville, Poplar and Cotton Center;
- Purchase of three new buses and installation of additional bicycle racks on buses;
- Public outreach to encourage the use of alternative modes of transportation;
- Providing preferential parking for carpools and vanpools;
- Removing on-street parking and providing bus pullouts in curbs to improve traffic flow;
- Supporting the purchase of hybrid vehicles for the County fleet;
- Mandating that the General Plan 2030 Update implement land use policies supporting public transit and vehicle trip reduction; and
- Programming $13,264,000 of highway widening projects.

Resolution 2004-0067. As part of a follow up effort to Resolution 2002-0157 and to address the federal reclassification to Extreme non-attainment for ozone, the County Board of Supervisors adopted Resolution 2004-067. The resolution contains additional Reasonably Available Control Measures as summarized below:

- Encouraging land use patterns which support public transit and alternative modes of transportation;
- Exploring concepts of Livable Communities as they address housing incentives and transportation;

- Consideration of incentives to encourage developments in unincorporated communities that are sensitive to air quality concerns; and
- Exploring ways to enhance van/carpool incentives, alternative work schedules, and other Transportation Demand Management strategies."[24]

Particulate Matter Plans[25]

The SJVAB was designated nonattainment of state and federal health-based air quality standards for PM_{10}. However, as discussed below, the SJVAB has demonstrated attainment of the federal PM_{10} standards and currently remains in nonattainment only for the state standards. The SJVAB is also designated nonattainment of state and federal standards for $PM_{2.5}$.

To meet CAA requirements for the PM_{10} standard, the Air District adopted a PM10 Attainment Demonstration Plan (Amended 2003 PM10 Plan and 2006 PM10 Plan), which had an attainment date of 2010. The Air District adopted the *2007 PM10 Maintenance Plan* in September 2007 to assure the San Joaquin Valley's continued attainment of the EPA's PM_{10} standard. The EPA designated the San Joaquin Valley as an attainment/maintenance area for PM_{10} on September 25, 2008. Although the San Joaquin Valley has exceeded the standard since then, those days were considered exceptional events that are not considered a violation of the standard for attainment purposes.

On April 30, 2008, the Air District adopted the *2008 PM2.5 Plan* satisfying federal implementation requirements for the 1997 federal $PM_{2.5}$ standard. However, on the verge of the demonstration of attainment with the standard the SJVAB was plagued with extreme drought, stagnation, strong inversions, and historically dry conditions and could not achieve attainment by the 2015 deadlines. The *2015 Plan for the 1997 PM2.5 Standard* (2015 PM2.5 Plan) was adopted by the Air District on April 16, 2015, and is a continuation of the Air District's strategy to improve the air quality in the SJVAB. The 2015 PM2.5 Plan contains stringent measures, best available control measures, additional enforceable commitments for further reductions in emissions, and ensures attainment of the 1997 federal 24-hour standard (65 $\mu g/m^3$) by 2018 and the annual standard (15 $\mu g/m^3$) by 2020.

In December 2012, the Air District adopted the *2012 PM2.5 Plan* to bring the San Joaquin Valley into attainment of the EPA's 2006 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$. The ARB approved the Air District's 2012 PM2.5 Plan for the 2006 standard at a public hearing on January 24, 2013. This plan seeks to bring the San Joaquin Valley into attainment with the standard by 2019, with the expectation that most areas will achieve attainment before that time.

EPA lowered the annual $PM_{2.5}$ standard in 2012 to 12 $\mu g/m^3$. The Air District adopted the *2016 Moderate Area Plan for the 2012 PM2.5 Standard* on September 15, 2016. This plan addresses the federal annual $PM_{2.5}$ standard established in 2012 and includes an attainment impracticability demonstration and request for reclassification of the Valley from Moderate nonattainment to Serious nonattainment.

[24] Ibid. 3.3-13.

[25] Air District. The various particulate matter plans can be found on the Air District's website at: http://www.valleyair.org/Air_Quality_Plans/PM_Plans.htm. Accessed August 2021.

The Air District adopted the *2018 Plan for the 1997, 2006, and 2012 PM2.5 Standards* on November 15, 2018. This plan addresses the EPA federal 1997 annual $PM_{2.5}$ standard of 15 µg/m³ and 24-hour $PM_{2.5}$ standard of 65 µg/m³; the 2006 24-hour $PM_{2.5}$ standard of 35 µg/m³; and the 2012 annual $PM_{2.5}$ standard of 12 µg/m³. This plan demonstrates attainment of the federal $PM_{2.5}$ standards as expeditiously as practicable. The Air District continues to work with EPA on issues surrounding these plans, including EPA implementation updates.

The County continues to evaluate and consider Federal, State, and Air District programs in order to respond to the non-attainment designation for state PM10 standards that the SJVAB has received. "On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM10 NAAQS and approved the PM10 Maintenance Plan. However, prior to this redesignation, Tulare County Board of Supervisors adopted the following resolution (Resolution 2002-0812) on October 29, 2002. Although now designated in attainment of the federal PM10 standard, all requirements included in the AIR DISTRICT PM10 Plan are still in effect. The resolution contains the following Best Available Control Measures (BACMs) to be implemented in order to reduce PM10 emissions in the County:

- Paving or stabilizing of unpaved roads and alleys;
- Paving, vegetating, chemically stabilizing unpaved access points onto paved roads;
- Curbing, paving, or stabilizing shoulders on paved roads;
- Frequent routine sweeping or cleaning of paved roads;
- Intensive street cleaning requirements for industrial paved roads and streets providing access to industrial/ construction sites; and
- Debris removal after wind and rain runoff when blocking roadways."[26]

<u>Criteria Pollutant Emissions</u>

To assess air quality impacts, the Air District has established significance thresholds to assist Lead Agencies in determining whether a project may have a significant air quality impact.[27] The Air District's thresholds of significance for criteria pollutants, which are based on Air District Rule 2201 (New and Modified Stationary Source Review) offset thresholds, are provided in **Table 3.1-8** (Table 4-1 in the *"Air Quality and GHG Technical Report for the Tulare County Solid Waste Department Compost and Bioenergy Facilities"* Report. (AQ & GHG Report). As shown in the Table, the Air District has three sets of significance thresholds for each pollutant based on the source of the emissions. According to the Air District's Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), "The District identifies thresholds that separate a project's short-term emissions from its long-term emissions. The short-term emissions are mainly related to the construction phase of a project and are recognized to be short in duration. The long-term emissions are mainly related to the activities that will occur indefinitely as a result of project operations."[28]

[26] Tulare County General Plan 2030 Update RDEIR. Page 3.3-14.
[27] Air District. GAMAQI. Page 74.
[28] Ibid. 75.

Table 3.1-8 Air Quality Thresholds of Significance – Criteria Pollutants			
Pollutant/ Precursor	**Construction Emissions**	**Operational Emissions**	
		Permitted Equipment and Activities	**Non- Permitted Equipment and Activities**
	Emissions (tpy)	**Emissions (tpy)**	**Emissions (tpy)**
CO	100	100	100
NOx	10	10	10
ROG	10	10	10
SOx	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15
Source: Air District, GAMAQI. Table 2. Page 80.			

Operational emissions are further separated into permitted and non-permitted equipment and activities. Stationary (permitted) sources that comply or will comply with Air District rules and regulations are generally not considered to have a significant air quality impact. Specifically, the GAMAQI states, "District Regulation II ensures that stationary source emissions will be reduced or mitigated to below the District's significance thresholds. However, the Lead Agency can, and should, make an exception to this determination if special circumstances suggest that the emissions from any permitted or exempt source may cause a significant air quality impact. For example, if a source may emit objectionable odors, then odor impacts on nearby receptors should be considered a potentially significant air quality impact. District implementation of New Source Review (NSR) ensures that there is no net increase in emissions above specified thresholds from New and Modified Stationary Sources for all nonattainment pollutants and their precursors. Furthermore, in general, permitted sources emitting more than the NSR Offset Thresholds for any criteria pollutant must offset all emission increases in excess of the thresholds. However, under certain circumstances, the District may be precluded by state law or other District rule requirements from requiring a stationary source to offset emissions increases."[29]

Air District Rules and Regulations[30]

The SJVAPCD is responsible for establishing and enforcing air quality rules and regulations. SJVAPCD regulations applicable or potentially applicable to the proposed Project are presented in this section. Federal regulations have been incorporated into many SJVAPCD rules, and the applicability of each federal program is described.

[29] Op. Cit. 76.

[30] "*Air Quality and GHG Technical Report for the Tulare County Solid Waste Department Compost and Bioenergy Facilities"* Report (AQ & GHG Report). July 2021. Prepared by Yorke Engineering, LLC. Page 2-17. Included in Appendix "A" of this document.

Rule 2010 – Permits Required. Rule 2010 requires that an Authority to Construct (ATC) and a Permit to Operate (PTO) (an NSR permit) be obtained prior to constructing, altering, replacing, or operating any device which emits or may emit air contaminants.

Rule 2201 – New and Modified Stationary Source Review. Rule 2201 provides for the review of new and modified stationary sources of air pollution and provides mechanisms, including emissions offsets, by which ATCs of such sources may be granted without interfering with the attainment or maintenance of an AAQS. The SJVAPCD NSR rule applies to all new stationary sources and all modifications to existing stationary sources which are subject to SJVAPCD permit requirements. The rule generally requires that new or modified equipment include BACT and that emission increases above specified thresholds be offset.

- *Best Available Control Technology*

  Pursuant to Section 4.1 of Rule 2201, BACT is triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. The proposed Project results in an increase in VOC emissions over 2 pounds per day and will trigger BACT for VOCs.

  The compost facility will be constructed with CASP technology for aerating the compost piles and operated with a biofilter layer of cured compost to control emissions. Aerated piles with a biofilter satisfy BACT for composting.

  The bioenergy facility internal combustion (genset) engines will operate with SCR for NO_x emissions control and oxidation catalyst for VOC and CO emissions control. The flare will be designed with a low-NO_x burner. These emission control measures meet BACT requirements.

- *Offsets*

  Pursuant to Section 4.5.3 of Rule 2201, offsets are triggered on a pollutant-by-pollutant basis and are required if the post-Project stationary source potential to emit (PTE) is equal to or greater than the emissions offset threshold levels listed in Rule 2201.

  Based on the emissions estimates for the project (see Section 3), VOC emission offsets will be required for the compost facility due to emissions exceeding the offset threshold of 20,000 pounds per year. The compost facility emissions from permitted sources will not exceed the offset threshold for any other criteria pollutant.

  The bioenergy facility emissions will not exceed the offset threshold for any pollutant, thus offsets will not be required per Rule 2201.

- *Public Notification*

  Pursuant to Section 5.4 of Rule 2201, public notification and publication are required for the following types of applications:

- New Major Sources, Federal Major Modifications, and SB 288 Major Modification;
- Any new emissions unit with a potential to emit greater than 100 pounds during any one day for any one affected pollutant;
- Modifications that increase the Stationary Source Potential to Emit (SSPE1) from a level below the emissions offset threshold level to a level exceeding the emissions offset threshold level for one or more pollutants;
- New stationary sources with SSPE2 exceeding the emissions offset threshold level for one or more pollutants; and
- Any permitting action resulting in a Stationary Source Increase in Permitted Emissions (SSIPE) exceeding 20,000 pounds per year for any one pollutant.
- The compost facility will be a new major source due to emissions of VOC exceeding the major source threshold of 20,000 pounds per year. Therefore, public notification will be required.

The bioenergy facility will not trigger public notification requirements, as it would not satisfy any of the criteria listed above.

- *Ambient Air Quality Analysis (AAQA)*

  Rule 2201 requires an AAQA to determine whether a new or modified stationary source will cause or make worse a violation of an air quality standard.

  An AAQA has been prepared in support of this Project. The AAQA confirms that the proposed Project will not have an adverse impact on regional air quality. AAQA modeling results are provided in Appendix "A".

Rule 2520 – Federally Mandated Operating Permits. Operating permits are required for major sources with a PTE over specific thresholds based on the attainment status of the area, major sources of hazardous air pollutants (HAPs), or sources which are subject to certain federal regulations. This requirement comes from Title V of the CAA Amendments of 1990. Consequently, these types of operating permits are called Title V permits.

In the San Joaquin Valley, Title V permits are issued by the SJVAPCD pursuant to Rule 2520. The VOC PTE for from the proposed compost facility is expected to exceed the SJVAPCD major source threshold of 10 TPY; thus, the proposed compost facility would be subject to Title V permitting requirements. The rule requires a completed application to be filed within 12 months of becoming subject to the rule.

Emissions from the proposed bioenergy facility are not expected to exceed the SJVAPCD major source threshold for any pollutant and, thus, the facility would not be subject to Title V permitting requirements.

Rule 4001 – New Source Performance Standards. This rule incorporates NSPS from 40 CFR Part 60 and applies to new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60 which meet the applicability requirements.
Compost facilities are not subject to any federal NSPS.

The syngas-fired internal combustion (IC) engines proposed for operation in the bioenergy facility will be subject to 40 CFR Part 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. Subpart JJJJ establishes emission limits for NO_x, hydrocarbons (i.e., VOC), and CO. Compliance with the BACT emission standards in the SJVAPCD ensures compliance with Subpart JJJJ standards. Subpart JJJJ requires pre-construction notification, which is satisfied by the SJVAPCD permitting process, along with periodic monitoring, reporting, and recordkeeping. Subpart JJJJ requirements will be incorporated into the operating permits for the IC engines by the SJVAPCD.

Rule 4002 – National Emission Standards for Hazardous Air Pollutants. This rule incorporates the NESHAPs from 40 CFR Parts 61 and 63 and applies to sources of HAPs as defined in each subpart. Compost facilities are not subject to any federal NESHAPs.

The syngas-fired IC engines proposed for operation in the bioenergy facility will be subject to 40 CFR Part 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. Subpart ZZZZ requires only that the engines comply with Subpart JJJJ. As discussed above, compliance with Subpart JJJJ is assured through SJVAPCD BACT standards and permit requirements.

Rule 4101 – Visible Emissions. Rule 4101 prohibits visible air contaminant discharge into the atmosphere for a period or periods aggregating more than 3 minutes in any 1 hour, with 20% opacity or greater.

Paved working surfaces, the use of street sweepers, and the application of water for dust suppression will ensure compliance with this rule.

Rule 4102 – Nuisance. Rule 4102 prohibits discharge of air contaminants which could cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; endanger the comfort, repose, health, or safety of any such person or the public; or cause or have a natural tendency to cause injury or damage to business or property.
Paved working surfaces, the use of street sweepers, and the application of water for dust suppression will ensure compliance with this rule.

Rule 4201 – Particulate Matter Concentration. Rule 4201 applies to sources which emit or may emit dust, fumes, or total suspended particulate. The rule prohibits discharge of dust, fumes, or total particulate into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot (dscf).

The expected PM emission concentrations are less than 0.1 grain per dscf, and compliance with this rule is expected.

Rule 4202 – Particulate Matter Emission Rate. Rule 4202 limits PM emissions by establishing allowable emission rates. PM emissions from any source operation shall not exceed the allowable hourly emission rate as determined by the Rule 4202. Compliance with Rule 4202 is expected.

Rule 4565 – Biosolids, Animal Manure, and Poultry Litter Operations. Receipt of biosolids and animal waste material is proposed as part of this Project. Therefore, the requirements of this rule apply to the handling and processing of these materials. For compost operations processing more than 100,000 wet tons per year, the rule requires that the facility implement mitigation measures as specified in the rule.

The proposed compost facility is expected to be in compliance with the applicable rule requirements for biosolids and animal waste disposal and composting. he rule is not applicable to the bioenergy facility.

Rule 4566 – Composting Operations. The proposed compost facility would be subject to the provisions of this rule. The rule requires that active composting be initiated within 3 days following receipt of the organic material, covered with a waterproof material, or removed from the site. While composting, the facility must implement mitigation measures as specified in the rule. The compost facility is expected to be in compliance with the applicable rule requirements. The rule is not applicable to the bioenergy facility.

Rule 4801 – Sulfur Compounds. This rule limits the emissions of sulfur compounds. The rule applies to any discharge to the atmosphere of sulfur compounds which would exist as a liquid or a gas at standard conditions. The rule prohibits the discharge into the atmosphere of sulfur compounds in concentrations greater than 2,000 parts per million by volume (ppmv) as SO_2 on a dry basis averaged over 15 consecutive minutes. Use of CARB diesel fuel in the operating equipment will ensure compliance at the compost facility. The bioenergy facility is expected to operate in compliance with this rule.

Rule 8011 – General Requirements. The purpose of Regulation VIII (Fugitive PM_{10} Prohibitions) is to reduce ambient concentrations of PM_{10} by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. The rules contained in Regulation VIII have been developed pursuant to EPA guidance for serious PM_{10} nonattainment areas. The rules are applicable to specified anthropogenic fugitive dust sources. Fugitive dust contains PM_{10} and particles larger than PM_{10}. Paved working surfaces, the use of street sweepers, and the application of water for dust suppression will ensure compliance with this rule.

Rule 8021 – Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities. This rule limits fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities. This rule applies to any such activity and other earthmoving activities, including, but not limited to, land clearing, grubbing, scraping, travel on-site, and travel on access roads to and from the site.

Rule 8031 – Bulk Materials. The purpose of the rule is to limit fugitive dust emissions from outdoor handling, storage, and transport of bulk materials. The rule applies to the outdoor handling, storage, and transport of any bulk material.

Paved working surfaces, the use of street sweepers, and the application of water for dust suppression will ensure compliance with this rule.

Rule 8041 – Carryout and Track-Out. This rule limits fugitive dust emissions from carryout and track-out. The rule applies to all sites that are subject to any of the following rules where carryout or track-out has occurred or may occur on paved public roads or the paved shoulders of a paved public road: Rules 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities), 8031 (Bulk Materials), 8061 (Paved and Unpaved Roads), and 8071 (Unpaved Vehicle and Equipment Traffic Areas).

Paved working surfaces, the use of street sweepers, and the application of water for dust suppression will ensure compliance with this rule.

Rule 8051 – Open Areas. The purpose of this rule is to limit fugitive dust emissions from open areas. This rule applies to any open area having 0.5 acres or more within urban areas or 3.0 acres or more within rural areas that contains at least 1,000 square feet of disturbed surface area.

Rule 8061 – Paved and Unpaved Roads. This rule limits fugitive dust emissions from paved and unpaved roads by implementing control measures and design criteria. This rule applies to any new or existing public or private paved or unpaved road, road construction project, or road modification project.

Paved working surfaces, the use of street sweepers, and the application of water for dust suppression will ensure compliance with this rule.

Rule 8071 – Unpaved Vehicle/Equipment Traffic Areas. The purpose of this rule is to limit fugitive dust emissions from unpaved vehicle and equipment traffic areas. This rule applies to any unpaved vehicle/equipment traffic area.
The compost and bioenergy facilities are expected to have paved work and travel surfaces.

Rule 9110 – General Conformity. This rule specifies the criteria and procedures for determining the conformity of federal actions with the SJVAPCD's air quality implementation plan. The rule generally applies to federal actions (federal approval of projects) which would result in regionally significant emissions increases or a major increase in emissions of nonattainment pollutants that are not otherwise subject to NSR.

This Project is not subject to federal approval (i.e., is not a "federal action") and does not trigger requirements for conducting a general conformity analysis.

Rule 9510 – Indirect Source Review. The purpose of Indirect Source Review (ISR) is to reduce emissions of NO_x and PM_{10} from new development projects. New development projects may contribute to the air pollution problem in the valley by increasing the number of vehicles and vehicle miles traveled.

Rule 9510 applies to development projects that have not yet gained discretionary approval. However, there are several sources that are exempt. These include transportation projects that meet certain conditions, reconstruction projects that result from a natural disaster, and development projects on a facility whose primary functions are subject to Rule 2201 (New and Modified Stationary Source Review Rule) or Rule 2010 (Permits Required), including solid waste landfills.

This Project is not subject to ISR. The Project is exempt from ISR requirements pursuant to Rule 9510, Section 4.4.3, because the sources are subject to NSR.

Air District's CEQA Role

As a public agency, the District takes an active part in the intergovernmental review process under CEQA. In carrying out its duties under CEQA, the District may act as a Lead Agency, a Responsible Agency, or a Trustee/Commenting Agency depending on the approvals required by the District and other land use agencies.

"The District is always the Lead Agency for projects such as the development of District rules and regulations. The District may be Lead Agency for projects subject to District permit requirements. As discussed above, for projects triggering BACT, the District has discretionary approval in deciding how to permit the project. For projects subject to BACT, the District serves as Lead Agency when no other agency has principal responsibility for approving the project."[31]

"As a Responsible Agency, the District assists Lead Agencies by providing technical expertise in characterizing project-related impacts on air quality and is available to provide technical assistance in addressing air quality issues in environmental documents. When commenting on a Lead Agency's environmental analysis, the District reviews the air quality section of the analysis and other sections relevant to assessing potential impacts on air quality, i.e. sections assessing public health impacts. At the conclusion of its review the District may submit to the Lead Agency comments regarding the project air quality analysis. Where appropriate, the District will recommend feasible mitigation measures."[32]

[31] Air District. GAMAQI. Page 50.
[32] Ibid. 51.

"As a Trustee Agency, the District assists Lead Agencies by providing technical expertise or tools in characterizing project-related impacts on air quality and identifying potential mitigation measures, and is available to provide technical assistance in addressing air quality issues in environmental documents. At the conclusion of its review the District may submit to the Lead Agency comments regarding the project air quality analysis. Where appropriate, the District will recommend feasible mitigation measures. The process is subject to change due to the District's continuous improvements efforts." [33]

Provisional guidance, as well as CEQA air quality and GHG analyses thresholds, are outlined by the District. The overall condition of the Air Basin is benefitted as a result of this guidance, in addition to state regulations to control air pollution. In particular, the District's 2015 GAMAQI states the following:

"The District's Air Quality Attainment Plans include measures to promote air quality elements in county and city general plans as one of the primary indirect source programs. The general plan is the primary long-range planning document used by cities and counties to direct development. Since air districts have no authority over land use decisions, it is up to cities and counties to ensure that their general plans help achieve air quality goals. Section 65302.1 of the California Government Code requires cities and counties in the San Joaquin Valley to amend appropriate elements of their general plans to include data, analysis, comprehensive goals, policies, and feasible implementation strategies to improve air quality in their next housing element revisions.

The Air Quality Guidelines for General Plans (AQGGP), adopted by the District in 1994 and amended in 2005, is a guidance document containing goals and policy examples that cities and counties may want to incorporate into their General Plans to satisfy Section 65302.1. When adopted in a general plan and implemented, the suggestions in the AQGGP can reduce vehicle trips and miles traveled and improve air quality. The specific suggestions in the AQGGP are voluntary. The District strongly encourages cities and counties to use their land use and transportation planning authority to help achieve air quality goals by adopting the suggested policies and programs."[34]

Local Policy & Regulations

Tulare County General Plan Policies

In August 2012, Tulare County published its 2030 General Plan Update. The plan expresses the County's intention to comply with State law requirements and pursue goals and policies that enhance the quality of life and public welfare of County residents. To this end, a number of the goals and policies seek to reduce the impacts of air pollution, air pollution sources, and GHG emissions. Some of the featured policies and implementation measures direct growth into compact areas, such as urban development boundaries or corridors; incorporate smart growth and healthy community principles; encourage energy efficiency; and promote development of renewable energy sources and use of energy conservation measures. Additional Policies and Implementation

[33] Op. Cit. 52.
[34] Op. Cit. 41.

Measures include promoting green building practices in design, construction, and renovation and incorporating efficiency in transportation and circulation design to reduce or minimize vehicle trips. The Policies and Implementation Measures relevant to the proposed Project are identified below:

AQ-1.1 Cooperation with Other Agencies - The County shall cooperate with other local, regional, Federal, and State agencies in developing and implementing air quality plans to achieve State and federal Ambient Air Quality Standards. The County shall partner with the SJVAPCD, Tulare County Association of Governments (TCAG), and the California Air Resource Board to achieve better air quality conditions locally and regionally.

AQ-1.2 Cooperation with Local Jurisdictions - The County shall participate with cities, surrounding counties, and regional agencies to address cross-jurisdictional transportation and air quality issues.

AQ-1.3 Cumulative Air Quality Impacts - The County shall require development to be located, designed, and constructed in a manner that would minimize cumulative air quality impacts. Applicants shall be required to propose alternatives as part of the State CEQA process that reduce air emissions and enhance, rather than harm, the environment.

AQ-1.4 Air Quality Land Use Compatibility - The County shall evaluate the compatibility of industrial or other developments which are likely to cause undesirable air pollution with regard to proximity to sensitive land uses and wind direction and circulation in an effort to alleviate effects upon sensitive receptors.

AQ-1.5 California Environmental Quality Act (CEQA) Compliance - The County shall ensure that air quality impacts identified during the CEQA review process are consistently and reasonably mitigated when feasible.

AQ-1.7 Support Statewide Climate Change Solutions - The County shall monitor and support the efforts of Cal/EPA, CARB, and the SJVAPCD under AB 32 (Health and Safety Code §38501 et seq.) to develop a recommended list of emission reduction strategies. As appropriate, the County will evaluate each new project under the updated General Plan to determine its consistency with the emission reduction strategies.

AQ-1.8 Greenhouse Gas Emissions Reduction Plan/Climate Action Plan - The County will develop a Greenhouse Gas Emissions Reduction Plan (Plan) that identifies greenhouse gas emissions within the County as well as ways to reduce those emissions. The Plan will incorporate the requirements adopted by the California Air Resources Board specific to this issue. In addition, the County will work with the Tulare County Association of Governments and other applicable agencies to include the following key items in the regional planning efforts.

1. Inventory all known, or reasonably discoverable, sources of greenhouse gases in the County,
2. Inventory the greenhouse gas emissions in the most current year available, and those projected for year 2020, and

3. Set a target for the reduction of emissions attributable to the County's discretionary land use decisions and its own internal government operations.

AQ-1.9 Support Off-Site Measures to Reduce Greenhouse Gas Emissions - The County will support and encourage the use of off-site measures or the purchase of carbon offsets to reduce greenhouse gas emissions.

AQ-2.2 Indirect Source Review - The County shall require major development projects, as defined by the SJVAPCD, to reasonably mitigate air quality impacts associated with the project. The County shall notify developers of SJVAPCD Rule 9510 – Indirect Source Review requirements and work with SJVAPCD to determine mitigations, as feasible, that may include, but are not limited to the following:

1. Providing bicycle access and parking facilities,
2. Increasing density,
3. Encouraging mixed use developments,
4. Providing walkable and pedestrian-oriented neighborhoods,
5. Providing increased access to public transportation,
6. Providing preferential parking for high-occupancy vehicles, car pools, or alternative fuels vehicles, and
7. Establishing telecommuting programs or satellite work centers.

AQ-4.1 Air Pollution Control Technology - The County shall utilize the Best Available Control Measure (BACM) and Reasonably Available Control Measure (RACM) as adopted by the County to support SJVAPCD air quality attainment plans to achieve and maintain healthful air quality and high visibility standards. These measures shall be applied to new development approvals and permit modifications as appropriate.

AQ-4.2 Dust Suppression Measures - The County shall require developers to implement dust suppression measures during excavation, grading, and site preparation activities consistent with SJVAPCD Regulation VIII – Fugitive Dust Prohibitions. Techniques may include, but are not limited to, the following:

1. Site watering or application of dust suppressants;
2. Phasing or extension of grading operations;
3. Covering of stockpiles;
4. Suspension of grading activities during high wind periods (typically winds greater than 25 miles per hour); and
5. Revegetation of graded areas.

IMPACT ANALYSIS

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

a) Conflict with or obstruct implementation of the applicable air quality plan?

<u>Project Impact Analysis</u>: ***Less Than Significant Impact***

The analysis contained in the AQ & GHG Report (prepared by qualified consultant Yorke Engineering, LLC) provides expert opinion and substantial evidence to conclude that the Project will result in a less than significant impact to this resource Item. As noted earlier, the Project is located within the San Joaquin Valley Unified Air Pollution Control District (SJVAPCD) and, as such, it is compelled to comply with applicable air quality plans, rules, permits, regulations, thresholds, etc.; as determined by the Air District (which is a responsible agency in regard to this Project). The SJVAPCD GAMAQI does not list specific criteria for evaluating this impact area so a qualitative approach is used to compare the project design and emissions to applicable air quality plans.

As discussed previously in this Chapter, the SJVAPCD has prepared AQAPs for ozone and $PM_{2.5}$ and a maintenance plan for PM_{10}. An attainment plan must be prepared for pollutants which exceed the NAAQS, and a maintenance plan has been prepared for pollutants for which the valley is designated as attainment or unclassifiable with respect to the NAAQS. A maintenance plan is prepared to ensure that additional emissions of the attainment/unclassified pollutants will not adversely affect air quality to the extent that it would result in a violation of the applicable air quality standard.

Rule 2201, *New Source Review*, is a major component of the SJVAPCD's attainment strategy. NSR provides mechanisms, including emissions trade-offs, by which ATCs/PTOs may be granted without interfering with the attainment or maintenance of the AAQS. SJVAPCD implementation of NSR ensures that there is no net increase in emissions above specified thresholds from new and modified stationary sources for all nonattainment pollutants and their precursors. Permitted emissions above offset thresholds must be offset to below the rule threshold, adjusted for the distance of the source of ERCs to the project, and also adjusted by a factor to provide a net air quality benefit for ozone precursors. Furthermore, the SJVAPCD's NSR program is designed to ensure that project-specific emissions increases that are below NSR offset thresholds will not prevent the SJVAPCD from achieving attainment. The SJVAPCD's attainment plans demonstrate that this level of emissions increase will not interfere with attainment or maintenance of the AAQS. Consequently, emissions impacts from sources permitted consistent with NSR requirements are consistent with the SJVAPCD's AQAPs, and hence are not individually or cumulatively significant.

The SJVAPCD's attainment plans must account for emissions from existing projects and also provide for future growth. The attainment plans must ensure that on a valley-wide basis (i.e., cumulative basis), there is no increase in emissions of nonattainment pollutants or precursors (NO_x, VOC, and $PM_{2.5}$). District plans must treat future growth as actual "in the air" emissions, and the plans must include control measures that achieve reductions needed to offset (mitigate) such growth and ensure reasonable further progress toward attainment of the AAQS.

The 2018 Integrated $PM_{2.5}$ AQAP accounts for current and projected future growth of waste management-related emissions. For example, the plan includes 0.3 TPD of $PM_{2.5}$ emissions for the Waste Management category starting in 2020. As shown in Table 3-9, the $PM_{2.5}$ net emissions increase for the proposed compost and bioenergy facilities is 6.67 pounds per day (0.003 TPD), which is about 1.1% of the emissions accounted for in the $PM_{2.5}$ AQAP. Therefore, it is reasonable to assume that both the permitted and non-permitted emissions associated with the proposed Project are accounted for and do not conflict with or obstruct implementation of the applicable air quality plan.

Many design features will be implemented for the proposed Project that will minimize and mitigate emissions, including a dust control plan. The ATCs and PTOs that will be issued by the SJVAPCD will require BACT on new sources subject to permitting, will require that ERCs are provided, and will impose permit conditions that ensure compliance with federal NSPS, CARB regulations, and SJVAPCD rules and regulations. As such, the proposed Project will not conflict with or obstruct implementation of the applicable air quality plan and will have a ***Less Than Significant Impact*** to this resource.

Cumulative Impact Analysis: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is the San Joaquin Valley Air Basin. As discussed below, Project-related criteria pollutant emissions would not exceed Air District significance thresholds with mitigation and, as such, the Project is consistent with and would not obstruct the applicable air quality attainment plans. Furthermore, the Project would be required to comply with all applicable Air District rules and regulations. Therefore, the Project would result in a ***Less Than Significant Impact*** related this Checklist Item.

Mitigation Measure(s): ***None Required.***

Conclusion: ***Less Than Significant Impact***

As previously noted, the Project is consistent with all applicable air quality plans, it will comply with required control measures (including permits, rule, regulations, etc. as required by the San Joaquin Valley Air Pollution Control District and Tulare County conditions of approval as applicable), and it will not contribute substantially to an existing or projected air quality violation. Therefore, the Project would result in a ***Less Than Significant Impact*** related to this Checklist Item.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Project Impact Analysis: ***Less Than Significant Impact With Mitigation***

A project would be cumulatively significant if it was determined to be significant by itself, or cumulatively significant in consideration of regional plans. In this section, the Project is evaluated to determine if it is significant by itself based on mass emissions and ambient air quality significance thresholds, or cumulatively significant based on regional plans.

Mass Emissions

The SJVAPCD's thresholds of significance for criteria pollutant emissions and their application are presented in **Table 3.1-8** (Table 4-1 in the AQ & GHG Report).

As noted previously, daily emissions are compared to the 100 pounds per day screening level to determine if ambient air quality modeling is required for a proposed project. Project permitted and non-permitted source emissions are compared to the SJVAPCD daily AAQA screening threshold in **Table 3.1-9** (Table 4-2 in the AQ & GHG Report). As shown, the anticipated daily construction VOC emissions will exceed the threshold of 100 pounds per day. However, modeling is not required for VOC emissions because there are no AAQS for VOC; therefore, modeling for construction activities is not required. The mass daily operating emissions for permitted sources exceed the 100 pounds per day threshold for VOC and CO. Therefore, ambient air quality modeling is required for operating emissions.

Table 3.1-9
Project Emissions Compared to Daily AAQA Screening Level[35]

Category	NO_x (lbs./day)	VOC (lbs./day)	CO (lbs./day)	SO_x (lbs./day)	PM_{10} (lbs./day)	$PM_{2.5}$ (lbs./day)
Project Construction Emissions	54.99	225.83	50.73	0.12	3.34	4.06
AAQA Construction Screening Level	100	100	100	100	100	100
Exceed Level?	*No*	***Yes***	*No*	*No*	*No*	*No*
Project Permitted Source Emissions	31.01	225.74	141.55	2.92	10.37	4.75
AAQA Permitted Source Screening Level	100	100	100	100	100	100
Exceed Threshold?	*No*	***Yes***	***Yes***	*No*	*No*	*No*
Project Non-Permitted Source Emissions	22.19	2.52	43.94	0.17	9.59	1.91
AAQA Non-Permitted Source Screening Level	100	100	100	100	100	100
Exceed Threshold?	***No***	***No***	***No***	***No***	***No***	***No***

Annual Project emissions are compared to the SJVAPCD mass annual CEQA significant thresholds in **Table 3.1-10** (Table 4-3 in the AQ & GHG Report). As shown, neither the construction emissions nor the non-permitted operational emissions exceed the significance threshold for any criteria pollutant.

[35] AQ & GHG Report. July 2021. Prepared by Yorke Engineering, LLC. Page 4-4. Included in Appendix "A" of this document.

With respect to operational emissions, with the application of 27.3 TPY ERCs as required by SJVAPCD Rule 2202 for the compost facility (i.e., compost facility emissions exceeding the 10-ton offset threshold), the proposed Project would not exceed the significance thresholds for any pollutant.

Table 3.1-10
Project Emissions Compared to Annual CEQA Emissions Thresholds[36]

Category	NO_x (TPY)	VOC (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)
Project Construction Emissions	3.4	2.1	3.0	0.01	0.3	0.2
CEQA Construction Threshold	10	10	100	27	15	15
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*
Project Permitted Source Emissions	4.0	37.3	26.6	0.5	1.8	0.9
SJVAPCD Rule 2202 ERCs	NR	(27.4)[1]	NA	NA	NR	NA
Net Emissions After Offsets	4.0	9.9	26.6	0.5	1.8	0.9
CEQA Permitted Source Threshold	10	10	100	27	15	15
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*
Project Non-Permitted Source Emissions	3.5	0.4	6.9	0.03	1.5	0.3
CEQA Non-Permitted Source Threshold	10	10	100	27	15	15
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

Notes:
1. It is anticipated that the compost area and bioenergy facility will be permitted separately. Only the VOC emissions over 10 TPY for the compost area will be subject to NSR ERCs.
NR: Not required (below SJVAPCD NSR offset thresholds).
NA: Not Applicable (not subject to offsets).

Ambient Air Quality

When assessing the significance of project-related impacts on air quality, the SJVAPCD recommends that an AAQA be performed when on-site emissions increases from construction activities or operational activities exceed the 100 pounds per day screening level for any criteria pollutant after implementation of all enforceable mitigation measures. The AAQA would evaluate project emissions against the CAAQS and NAAQS that are listed in **Table 3.1-2.**

The SJVAPCD's GAMAQI allows for a traffic study to be substituted for a modeling analysis to evaluate CO impacts (the "CO Hotspots" analysis). Because conventional ambient air quality modeling was conducted to evaluate the air quality impacts of criteria pollutants, including CO emissions, the CO Hotspots analysis was not conducted.

[36] Ibid. 4-5.

An AAQA for the proposed Project was prepared to evaluate impacts to ambient air quality due to operational emissions. Air dispersion models calculate the atmospheric transport and fate of pollutants from the emissions source. The models calculate the concentrations of selected pollutants at specific downwind ground-level points, such as residential or off-site workplace receptors. The transformation (fate) of an airborne pollutant, its movement with the prevailing winds (transport), its crosswind and vertical movement due to atmospheric turbulence (dispersion), and its removal due to dry and wet deposition are influenced by the pollutant's physical and chemical properties and meteorological and environmental conditions. Factors such as distance from the source to the receptor, meteorological conditions, intervening land use and terrain, pollutant release characteristics, and background pollutant concentrations affect the predicted air concentration of an air pollutant. Air dispersion models take all of these factors into consideration when calculating downwind ground-level pollutant concentrations.

The AAQA demonstrates that the Project will not cause an exceedance of the NO_2, SO_2, or CO NAAQS or CAAQS. (The modeling results are presented in **Tables 3.1-11** and **3.1-12**. A detailed modeling report is provided in Appendix F of the AAQA included in Appendix "A" of this Draft Focused EIR.)

Since background PM_{10} and $PM_{2.5}$ concentrations are greater than the NAAQS and CAAQS, the modeled concentrations were compared to the Significant Impact Level (SILs). The predicted PM_{10} and $PM_{2.5}$ concentrations from all on-site exhaust sources are less than the SILs. Calculated maximum emissions from the on-site fugitive dust sources resulted in model-predicted concentrations of PM_{10} and $PM_{2.5}$ that are less than the fugitive dust SILs. Therefore, the proposed Project will not have a significant adverse impact to air quality.

Conclusion

As demonstrated in **Table 3.1-10**, with the surrender of ERCs for VOC emissions, criteria pollutant emissions from the proposed Project would be less than the defined CEQA significance criteria. Therefore, Project construction emissions, permitted stationary source emissions, and non-permitted (mobile source) emissions would be ***Less Than Significant*** for all criteria pollutants.

An AAQA was performed which demonstrated that the proposed Project would not be expected to cause a violation of the NAAQS or CAAQS or contribute substantially to an existing air quality violation; the results are summarized in **Tables 3.1-11** (Table 4-4 in the AQ & GHG Report) and **3.1-12** (Table 4-5 in the AQ & GHG Report).

Based on the analyses conducted, the proposed Project is not expected to result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable NAAQS or CAAQS. Therefore, the Project will have a ***Less Than Significant Cumulative Impact*** on air quality.

Table 3.1-11
AAQA Modeling Results[37]

Pollutant	Averaging Time	Federal or State Standard	Modeled Concentration (µg/m³)	Background Concentration (µg/m³)	Modeled + Background Concentration (µg/m³)	AAQS (µg/m³)	Exceed Standard?
NO_2	1-Hour	Federal	32.4	104.3	136.6	188	No
		California	34.4	133.9	168.3	339	No
	Annual	Federal	3.9	21.0	24.9	100	No
		California	3.9	19.1	23.0	57	No
CO	1-Hour	Federal	520.7	2,725.5	3,246	40,000	No
		California	520.7	2,725.5	3,246	23,000	No
	8-Hour	Federal	394.8	2,329.5	2,724	10,000	No
		California	394.8	2,329.5	2,724	10,000	No
SO_2	1-Hour	Federal	0.9	14.1	15.0	196	No
		California	0.9	23.7	24.6	655	No
	3-Hour	Federal Secondary	0.8	13.6	14.4	1,300	No
	24-Hour	California	0.4	13.6	13.9	105	No
PM_{10}	24-Hour	Federal	See SIL Analysis	411.1	–	150	Background Over the CAAQS and/or NAAQS, Go To Step 2 SIL Analysis
		California	See SIL Analysis	418.5	–	50	
	Annual	California	See SIL Analysis	52.0	–	20	
$PM_{2.5}$	24-Hour	Federal	See SIL Analysis	86.8	–	35	
	Annual	Federal	See SIL Analysis	17.3	–	12	
		California	See SIL Analysis	17.4	–	12	

[37] Op. Cit. 4-7.

Table 3.1-12
PM_{10} and $PM_{2.5}$ SIL Modeling Results for Project

Pollutant	Averaging Time	Modeled Concentration (μg/m³)	SIL (μg/m³)	Exceed SIL?
PM_{10}	24-Hour	0.47	5.0	No
	Annual	0.13	1.0	No
$PM_{2.5}$	24-Hour	0.47	1.2	No
	Annual	0.13	0.2	No
Fugitive PM_{10}	24-Hour	6.55	10.4	No
	Annual	1.12	2.1	No
Fugitive $PM_{2.5}$	24-Hour	1.03	2.5	No
	Annual	0.19	0.6	No

Cumulative Impact Analysis: ***Less Than Significant Impact With Mitigation***

The geographic area of this cumulative analysis is San Joaquin Valley Air Basin. This cumulative analysis is based on the information provided in the *"Air Quality and GHG Technical Report for the Tulare County Solid Waste Department Compost and Bioenergy Facilities."* (AQ & GHG Report), which is included in Appendix "A" of this DEIR.

When assessing whether there is a new significant cumulative effect, the Lead Agency shall consider whether the incremental effects of the project are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects [14 CCR Section 15064(h)(1)].

Per CEQA Guidelines Section 15064(h)(3), a Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including but not limited to an air quality attainment or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located [14 CCR Section 15064(h)(3)].

The proposed Project will not have cumulative impacts during construction, as there are no known projects within two miles of the Project site that would be constructed or operated concurrent with Project construction. Because the compost and bioenergy facilities will operate as permitted stationary sources, the SJVAPCD's NSR program ensures that the emissions will not be cumulatively significant, per SJVAPCD policy. The Project's incremental contribution to a cumulative effect is ***not cumulatively considerable.***

Mitigation Measure(s): ***See Mitigation Measure 3.1-1***

Mitigation Measure 3.1-1 is a contingency mitigation measure to reduce project-related ozone precursor emissions and diesel particulate matter emissions levels if emissions reductions cannot be realized through implementation of applicable Air District rules/regulations.

3.1-1 The Tulare County Solid Waste Department shall mitigate 29.44 TPY (or other amount determined by the SJVUAPCD) of VOC emissions through the use of NSR requirements for ERCs (or other means acceptable to the SJVUAPCD), to ensure criteria pollutant thresholds are not exceeded.[38]

Conclusion: ***Less Than Significant Impacts With Mitigation***

As noted earlier, the Project construction- and operations-related emissions would not exceed the Air District's thresholds of significance and would not contribute substantially to an existing or projected air quality violation. Therefore, the Project would result in ***Less Than Significant Project-specific and Cumulative Impacts With Mitigation*** related to this Checklist Item.

c) Expose sensitive receptors to substantial pollutant concentrations?

Project Impact Analysis: ***Less Than Significant Impact***

The SJVAPCD's significance thresholds for TAC emissions from the operations of both permitted and non-permitted sources are combined and presented in **Table 3.1-13** (Table 4-6 in the AQ & GHG Report).

Carcinogenic (cancer) risk is expressed as excess cancer cases per one million exposed persons. Non-carcinogenic (acute and chronic) hazard indices (HI) are expressed as a ratio of expected exposure levels to acceptable (reference) exposure levels.

Table 3.1-13
Air Quality Thresholds of Significance – Toxic Air Contaminants[39]

Category	Significance Threshold
Carcinogens	Maximally Exposed Individual risk equals or exceeds 20 in one million
Non-Carcinogens	Acute: HI equals or exceeds 1 for the Maximally Exposed Individual
	Chronic: HI equals or exceeds 1 for the Maximally Exposed Individual

[38] Op. Cit.
[39] Op. Cit.

- The CAPCOA guidelines outline a technique for calculating a prioritization score that helps air districts identify priority facilities for risk assessment, which involves consideration of potency, toxicity, quantity of emissions, and proximity to sensitive receptors such as hospitals, daycare centers, schools, worksites, and residences. If the prioritization score exceeds the high risk level or intermediate risk level after consideration of additional factors, a refined HRA is recommended to determine if the Project's potential health risks are significant. The Prioritization Score hierarchy is explained below:
- Low Score: Projects having a TS less than 1 are low risk and are not likely to have an adverse health risk.
- Intermediate Score: Projects having a TS at least 1 and less than 10 need to evaluate additional factors to determine if the project's TAC emissions will have a less than significant health risk.
- High Score: Projects having a TS equal to or over 10 may have high risk. A refined HRA may be necessary to demonstrate that the project's TAC emissions will have a less than significant health risk.

To assess the potential acute, chronic, and carcinogenic health risks from a project, a two-step process can be followed, where initially a screening risk prioritization is conducted. If the potential for high health risks is found, then an HRA may be required.

A risk prioritization analysis is presented in Appendix "A" and summarized in **Table 3.1-14** (Table 4-7 in the AQ & GHG Report). It assesses the potential health risk from the proposed Project by calculating a prioritization score at the nearest residential and business receptors. The prioritization score was determined to be an intermediate risk. Since there are no sensitive receptors within 0.5 miles of the Project site, and there is a low population density in the vicinity of the Project, the proposed Project's TAC emissions would not have significant health risk impacts.

Table 3.1-14
Prioritization Score[40]

Project Phase	Acute	Chronic	Cancer	Prioritization Score
Construction	—	0.0048	3.23	Intermediate
Operations	0.76	0.061	2.95	Intermediate

Based on the intermediate prioritization score, the absence of any nearby sensitive receptors, and low population density in the vicinity of the Project, it is reasonable to conclude that the construction and operation of the proposed Project will not expose sensitive receptors to

[40] Op. Cit.

substantial pollutant concentrations or health risks. Therefore, the Project will have a ***Less Than Significant Project-specific Impact*** on sensitive receptors.

Cumulative Impact Analysis: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is the San Joaquin Valley Air Basin. There are no sensitive receptors within 0.5 miles of the project and as such, it is anticipated that the Project would not expose sensitive receptors to substantial pollutant concentrations. Therefore, based on the above analysis and projected emissions from the Project's construction phase, the Project would result in a ***Less Than Significant Cumulative Impact*** related to this Checklist Item.

Mitigation Measure(s): ***None Required.***

Conclusion: ***Less Than Significant Impact***

As noted earlier, the Project would result in ***Less Than Significant Project-specific and Cumulative Impacts*** related to this Checklist Item.

d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?

Project Impact Analysis: ***Less Than Significant Impact***

The Project should be evaluated to determine the likelihood that the Project would result in nuisance odors. Any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact. Nuisance odors may be assessed qualitatively, considering the design elements and proximity to off-site receptors that potentially would be exposed to objectionable odors.

Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact and the variety of odor sources, there are no quantitative or formulaic methodologies to determine if potential odors would have a significant impact. Rather, projects must be assessed on a case-by-case basis.

The SJVAPCD GAMAQI establishes the screening level for potential odor sources as a 1-mile setback for composting facilities. The GAMAQI also recommends reviewing the odor complaint history for the facility.

The proposed Project would potentially be new sources of odors. The proposed compost and bioenergy facilities are new facilities that have no odor history. The nearest sensitive receptor to Project site is a residence approximately 0.5 miles to the west of the compost facility and more than a mile from the bioenergy facility.

The CASP with a biofilter layer will reduce VOC and NH_3 emissions from the composting activity by at least 81% and 45%, respectively, compared to uncontrolled decomposition (e.g., in the landfill).[41] These are the primary malodorous compounds emitted from composting activities.

The composting facility will prepare and maintain a site-specific OIMP as required by 14 CCR Section 17863.4 to reduce potential odors. The OIMP will be designed to provide guidance to on-site operations personnel by describing, at a minimum, the following items:

- An odor monitoring and data collection protocol for on-site odor sources, which describes the proximity of possible odor receptors and a method for assessing odor impacts at the locations of the possible odor receptors;
- A description of meteorological conditions affecting migration of odors and/or transport of odor-causing material off-site, including seasonal variations that affect wind velocity and direction;
- A complaint response and recordkeeping protocol;
- A description of design considerations and/or projected ranges of optimal operation to be employed in minimizing odor, including method and degree of aeration, moisture content of materials, feedstock characteristics, airborne emission production, process water distribution, pad and site drainage and permeability, equipment reliability, personnel training, weather event impacts, utility service interruptions, and site-specific concerns as applicable; and
- A description of operating procedures for minimizing odor, including aeration, moisture management, feedstock quality, drainage controls, pad maintenance, wastewater pond controls, storage practices (e.g., storage time and pile geometry), contingency plans (i.e., equipment, water, power, and personnel), biofiltration, and tarping as applicable.

Based on the design features that will be implemented at the compost facility (i.e., aeration, biofilter layer, implementation of the OIMP, limited storage duration for unprocessed materials), the distance to sensitive receptor, and the low population density in the vicinity of the Project, the composting facility is not expected to create objectionable odors affecting a substantial number of people.

The bioenergy facility would use wood waste as the feedstock, emit small amounts of VOC from the wood dryer, and combust the produced syngas in IC engines. Wood waste is not known to produce objectionable odors. The VOC emissions from the dryer are expected to contain naturally occurring hydrocarbons from the wood. The byproducts from the combustion of syngas in the engines are not expected to cause objectionable odors. Given the relatively low levels of emissions, the distance to a sensitive receptor of over one mile, and the low population density, objectionable odors are not expected to impact a significant number of people.

[41] Op. Cit. 4-12.

The proposed Project will reduce odorous emissions from the landfill, and thus will not have an adverse impact to a substantial number of people due to changes in landfill operation. Based on the odor minimization design features that will be implemented at the compost facility and the distance to sensitive receptors, the Project is not expected to create objectionable odors affecting a substantial number of people. Given the relatively low levels of emissions from the bioenergy facility and the distance to sensitive receptors, objectionable odors are not expected to impact a substantial number of people. [42] Therefore, the proposed Project will have a ***Less Than Significant Project-specific*** impact related to emissions which cause odors.

Cumulative Impact Analysis: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is the San Joaquin Valley Air Basin. This cumulative analysis is based on the information provided in the AQ & GHG Report (included in Appendix "A" of this Draft SEIR). As such, the Project would result in ***Less Than Significant Cumulative Impacts*** related to this Checklist Item.

Mitigation Measure(s): ***None Required.***

Conclusion: ***Less Than Significant Impact***

As previously noted, the Project would result in ***Less Than Significant Project-specific and Cumulative Impacts*** related to this Checklist Item.

[42] Op. Cit.

DEFINITIONS AND/OR ACRONYMS

Definitions

Ambient Air Quality Standards, These standards measure outdoor air quality. They identify the maximum acceptable average concentrations of air pollutants during a specified period of time. These standards have been adopted at a State and Federal level.

Best Available Control Measures (BACM), A set of programs that identify and implement potentially best available control measures affecting local air quality issues.

Best Available Control Technologies (BACT), The most stringent emission limitation or control technique of the following: 1.) Achieved in practice for such category and class of source 2.) Contained in any State Implementation Plan approved by the Environmental Protection Agency for such category and class of source. A specific limitation or control technique shall not apply if the owner of the proposed emissions unit demonstrates to the satisfaction of the APCO that such a limitation or control technique is not presently achievable 3.) Contained in an applicable federal New Source Performance Standard or 4.) Any other emission limitation or control technique, including process and equipment changes of basic or control equipment, found by the APCO to be cost effective and technologically feasible for such class or category of sources or for a specific source.

Carbon Dioxide (CO_2) - A naturally occurring gas, and also a by-product of burning fossil fuels and biomass, as well as land-use changes and other industrial processes. It is the principal anthropogenic greenhouse gas that affects the Earth's radiative balance. It is the reference gas against which other greenhouse gases are measured and therefore has a Global Warming Potential of 1.

Carbon Monoxide (CO), Carbon monoxide is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels and is emitted directly into the air (unlike ozone).

Climate Change - Climate change refers to a statistically significant variation in either the mean state of the climate or in its variability, persisting for an extended period (typically decades or longer). Climate change may be due to natural internal processes or external forcings, or to persistent anthropogenic changes in the composition of the atmosphere or in land use.

Global Warming - Global warming is an average increase in the temperature of the atmosphere near the Earth's surface and in the troposphere, which can contribute to changes in global climate patterns. Global warming can occur from a variety of causes, both natural and human induced. In common usage, "global warming" often refers to the warming that can occur as a result of increased emissions of greenhouse gases from human activities.

Greenhouse Effect - Trapping and build-up of heat in the atmosphere (troposphere) near the Earth's surface. Some of the heat flowing back toward space from the Earth's surface is absorbed by water vapor, carbon dioxide, ozone, and several other gases in the atmosphere and then reradiated back toward the Earth's surface. If the atmospheric concentrations of these greenhouse gases rise, the average temperature of the lower atmosphere will gradually increase.

Greenhouse Gas - Any gas that absorbs infrared radiation in the atmosphere. Greenhouse gases include, but are not limited to, water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrochlorofluorocarbons (HCFCs), ozone (O_3), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Hydrogen Sulfide (H_2S), Hydrogen sulfide is a highly toxic flammable gas. Because it is heavier than air, it tends to accumulate at the bottom of poorly ventilated spaces.

Lead (Pb), Lead is the only substance which is currently listed as both a criteria air pollutant and a toxic air contaminant. Smelters and battery plants are the major sources of the pollutant "lead" in the air. The highest concentrations of lead are found in the vicinity of nonferrous smelters and other stationary sources of lead emissions. The EPA's health-based national air quality standard for lead is 1.5 micrograms per cubic meter ($\mu g/m_3$) [measured as a quarterly average].

Metropolitan Planning Organization (MPO), Tulare County Association of Governments (TCAG) is the MPO for Tulare County. MPO's are responsible for developing reasonably available control measures (RACM) and best available control measures (BACM) for use in air quality attainment plans and for addressing Transportation Conformity requirements of the federal Clean Air Act.

Mobile Source, A mobile emission source is a moving object, such as on-road and off-road vehicles, boats, airplanes, lawn equipment, and small utility engines.

Nitrogen Oxides (Oxides of Nitrogen, NO_x), NO_x are compounds of nitric oxide (NO) and nitrogen dioxide (NO_2). NO_x are primarily created from the combustion process and are a major contributor to ozone smog and acid rain formation. NOx also forms ammonium nitrate particulate in chemical reactions that occur when NOx forms nitric acid and combines with ammonia. Ammonium nitrate particulate is an important contributor to PM10 and PM2.5.

Ozone (O_3), Ozone is a pungent, colorless, toxic gas created in the atmosphere rather than emitted directly into the air. O_3 is produced in complex atmospheric reactions involving oxides of nitrogen, reactive organic gases (ROG), and ultraviolet energy from the sun in a photochemical reaction. Motor vehicles are the major sources of O_3 precursors.

Ozone Precursors, Chemicals such as non-methane hydrocarbons, also referred to as ROG, and oxides of nitrogen, occurring either naturally or as a result of human activities, which contribute to the formation of ozone, which is a major component of smog.

Photochemical, Some air pollutants are direct emissions, such as the CO produced by an automobile's engine. Other pollutants, primarily O_3, are formed when two or more chemicals react (using energy from the sun) in the atmosphere to form a new chemical. This is a photochemical reaction.

Particulate Matter 2.5 Micrometers ($PM_{2.5}$), The federal government has recently added standards for smaller dust particulates. $PM_{2.5}$ refers to dust/particulates/aerosols that are 2.5 microns in diameter or smaller. Particles of this size can be inhaled more deeply in the lungs and the chemical compositions of some particles are toxic and have serious health impacts.

Particulate Matter 10 Micrometers (PM_{10}), Dust and other particulates exhibit a range of particle sizes. Federal and State air quality regulations reflect the fact that smaller particles are easier to inhale and can be more damaging to health. PM_{10} refers to dust/particulates that are 10 microns in diameter or smaller. The fraction of PM between $PM_{2.5}$ and PM_{10} is comprised primarily of fugitive dust. The particles between PM_{10} and $PM_{2.5}$ are primarily combustion products and secondary particles formed by chemical reactions in the atmosphere.

Reactive Organic Gas (ROG), A photo chemically reactive gas, composed of non-methane hydrocarbons that may contribute to the formation of smog. Also sometimes referred to as Volatile Organic Compounds (VOCs).

Reasonable Available Control Measures (RACM), A broadly defined term referring to technologies and other measures that can be used to control pollution. They include Reasonably Available Control Technology and other measures. In the case of PM_{10}, RACM refers to approaches for controlling small or dispersed source categories such as road dust, woodstoves, and open burning. Regional Transportation Planning Agencies are required to implement RACM for transportation sources as part of the federal ozone attainment plan process in partnership with the Air District.

Reasonable Available Control Technologies (RACT), Devices, systems, process modifications, or other apparatuses or techniques that are reasonably available, taking into account: the necessity of imposing such controls in order to attain and maintain a national ambient air quality standard; the social, environmental, and economic impact of such controls; and alternative means of providing for attainment and maintenance of such a standard.

San Joaquin Valley Air Basin (SJVAB), An air basin is a geographic area that exhibits similar meteorological and geographic conditions. California is divided into 15 air basins to assist with the statewide regional management of air quality issues. The SJVAB extends in the Central Valley from San Joaquin County in the north to the valley portion of Kern County in the south.

San Joaquin Valley Unified Air Pollution Control District (Air District), The Air District is the regulatory agency responsible for developing air quality plans, monitoring air quality, developing air quality regulations, and permitting programs on stationary/industrial sources and agriculture and reporting air quality data for the SJVAB. The Air District also regulates indirect sources and has limited authority over transportation sources through the implementation of transportation control measures (TCM).

Sensitive Receptors, Sensitive receptors are defined as land uses that typically accommodate sensitive population groups such as long-term health care facilities, rehabilitation centers, retirement homes, convalescent homes, residences, schools, childcare centers, and playgrounds.

Sensitive Population Groups, Sensitive population groups are a subset of the general population that is at a greater risk than the general population to the effects of air pollution. These groups include the elderly, infants and children, and individuals with respiratory problems, such as asthma.

Sulfur Dioxide (SO_2), Sulfur dioxide belongs to the family of SOx. These gases are formed when fuel containing sulfur (mainly coal and oil) is burned, and during metal smelting and other industrial processes.

Stationary Source, A stationary emission source is a non-mobile source, such as a power plant, refinery, or manufacturing facility.

Sulfates, Sulfates occur as microscopic particles (aerosols) resulting from fossil fuel and biomass combustion. SOx can form sulfuric acid in the atmosphere that in the presence of ammonia forms ammonium sulfate particulates, a small but important component of PM_{10} and $PM_{2.5}$. Sulfates increase the acidity of the atmosphere and form acid rain.

Transportation Conformity, A federal requirement for transportation plans and projects to demonstrate that they will not result in emissions that exceed attainment plan emission budgets or exceed air quality standards.

Transportation Control Measures (TCMs), Any measure that is identified for the purposes of reducing emissions or concentrations of air pollutants from transportation sources by reducing vehicle use or changing traffic flow or congestion conditions.

Transportation Management Agencies, Transportation Management Agencies are private, non-profit, member-controlled organizations that provide transportation services in a particular area, such as a commercial district, mall, medical center, or industrial park. Transportation Management Agencies are appropriate for any geographic area where there are multiple employers or businesses clustered together that can benefit from cooperative transportation management or parking brokerage services. Regional and local governments, business associations, and individual businesses can all help establish Transportation Management Agencies.

Transportation Management Associations (TMAs), Groups of employers uniting together to work collectively to manage transportation demand in a particular area.

Tulare County Association of Governments (TCAG), TCAG is the Transportation Planning Agency (TPA) for Tulare County. TCAG is also designated as a Metropolitan Planning Organization (MPO), the agency responsible for preparing long range Regional Transportation Plans and demonstrating Transportation Conformity with air quality plans.

Wood-burning Devices, Wood-burning devices are designed to burn "solid fuels" such as cordwood, pellet fuel, manufactured logs, or any other non-gaseous or non-liquid fuels.

Acronyms

AB	Assembly Bill (in California)
ACM	Asbestos Containing Materials
AIR DISTRICT	San Joaquin Valley Unified Air Pollution Control District
ARB	California Air Resources Board
AQ	Air Quality
AQI	Air Quality Index
ATCM	Airborne Toxic Control Measure
BACM	Best Available Control Measures
BACT	Best Available Control Technologies
CAA	Federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal EPA	California Environmental Protection Agency
CARB or ARB	California Air Resources Board
CCAA	California Clean Air Act
CEQA	California Environmental Quality Act
CH_4	Methane
CO	Carbon Monoxide
DPM	Diesel Particulate Matter
EPA	United States Environmental Protection Agency
GAMAQI	Guide for Assessing and Mitigating Air Quality Impacts
GVWR	Gross Vehicle Weight Rate
HCFCs	Hydrochlorofluorocarbons
HFCs	Hydrofluorocarbons
HI	Hazard Index
H_2S	Hydrogen Sulfide
LEV	Low-Emissions Vehicle
NAAQS	National Ambient Air Quality Standards
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NO_2	Nitrogen Dioxide
NSPS	Standards of Performance for Stationary Compression- Ignition Internal Combustion Engines
NSR	New Source Review
MPO	Metropolitan Planning Organization
O_3	Ozone
OAL	Office of Administrative Law
Pb	Lead
PFCs	Perfluorocarbons
$PM_{2.5}$	Particulate Matter 2.5 Micrometers
PM_{10}	Particulate Matter 10 Micrometers
RACM	Reasonable Available Control Measures

RACT	Reasonable Available Control Technologies
RDEIR	Recirculated Draft Environmental Impact Report
ROG	Reactive Organic Gases
SB	Senate Bill (in California)
SEKI	Sequoia and Kings Canyon National Park
SIL	Significant Impact Level
SIP	State Implementation Plan
SF_6	Sulfur Hexafluoride
SO_2	Sulfur Dioxide
SJVAPCD	San Joaquin Valley Unified Air Pollution Control District
SJVAB	San Joaquin Valley Air Basin
TAC	Toxic Air Contaminants
TCAG	Tulare County Association of Governments
TCM	Transportation Control Measures
VOC	Volatile Organic Compound
WWTP	Waste Water Treatment Plant

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Chapter 3.2
Biological Resources

SUMMARY OF FINDINGS

The proposed Project will result in ***Less Than Significant Impacts with Mitigation*** to Biological Resources. A detailed review of potential impacts is provided in the following analysis. A Biological Evaluation included in the Visalia Landfill Master Development Plan, Final Environmental Impact Report (SCH# 2000051098, adopted/certified by the Tulare County Board of Supervisors on October 23, 2001), Visalia Landfill Waste Management Unit-1 Closure Construction Negative Declaration (SCH#2013081024, adopted/certified by the Tulare County Board of Supervisors on September 24, 2013), a search by Tulare County Resource Management Agency (RMA) staff of the California Natural Diversity Database (CNDDB, on September 25, 2021), RareFind 5, Biogeographic Information and Observation System (BIOS, a mapping application accessed to obtain current biological species data for the Project vicinity), and a Biological Technical Memorandum prepared by RMA staff (included in Appendix "B" of this document) were used as the basis for determining this Project will result in less than significant impacts.

INTRODUCTION

California Environmental Quality Act (CEQA) Requirements

"Whenever possible, public agencies are required to avoid or minimize environmental impacts by implementing practical alternatives or mitigation measures. According to Section 15382 of the CEQA Guidelines, a significant effect on the environment means a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."[1]

The California Environmental Quality Act (CEQA; California Public Resources Code §§ 21000-21177) requires State agencies, local governments, and special districts to evaluate and disclose impacts from "projects" in the State. Section 15380 of the CEQA Guidelines clearly indicates that species of special concern should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outlined therein.[2]

Sections 15063 and 15065 of the CEQA Guidelines, which address how an impact is identified as significant, are particularly relevant to SSCs. Project-level impacts to listed (rare, threatened, or endangered species) species are generally considered significant thus requiring lead agencies to

[1] CEQA Guidelines 2019, Section 15382.
[2] California Department of Fish and Wildlife. Wildlife: Nongame: Species of Special Concern. Accessed December 2020 at: https://www.wildlife.ca.gov/Conservation/SSC#394871319-how-are-sscs-addressed-under-the-california-environmental-quality-act.

prepare an Environmental Impact Report to fully analyze and evaluate the impacts. In assigning "impact significance" to populations of non-listed species, analysts usually consider factors such as population-level effects, proportion of the taxon's range affected by a project, regional effects, and impacts to habitat features.[3]

This section of the Focused Environmental Impact Report (EIR) for the Project meets CEQA requirements by addressing potential impacts to biological resources on the proposed Project site, which is located in a portion of the San Joaquin Valley in Tulare County. The "Environmental Setting" section provides a description of biological resources in the region, with special emphasis on the proposed Project site and vicinity. The "Regulatory Setting" provides a description of applicable State and local regulatory policies. A description of the potential impacts of the proposed project is also provided and includes the identification of feasible mitigation to avoid or lessen the impacts.

Thresholds of Significance

The geographical area may be either statewide or nationwide, depending on the sensitive status of the species. Standards for listing as federal endangered species are determined by the Federal Endangered Species Act, administered by U.S. Department of Fish and Wildlife. Standards for listing of California special status species (Endangered, Threatened, Candidate Endangered, Candidate Threatened, and Sensitive Species) are administered by the California Department of Fish and Wildlife (DFW). These requirements are described in further detail in the "Regulatory" section of this document.

ENVIRONMENTAL SETTING

The existing Visalia Landfill is located at 8614 Avenue 328, Visalia, CA 93291. The proposed Project will be located on the existing Visalia Landfill site on an approximately 36.0-acre portion of the site located at the northeast corner of Avenue 328 and Road 80, approximately one (1) mile north of the City of Visalia. The Visalia Landfill site (634 acres) is located entirely within an unincorporated area of Tulare County and includes five (5) parcels (Assessor Parcel Numbers (APN) 077-020-018, 077-020-021, 077-020-024, 077-020-026, and 077-020-030). The Project location and related activities will be entirely within APN 077-020-030; all other APNs will not be utilized for the Project.

Land uses surrounding the site are characterized by intensive agricultural operations. Row crops are immediately to the east and south; a dairy is located to the west. A walnut orchard is located north of the landfill property (approximately 0.85 miles north of the proposed Project's location).

Like most of California, the Tulare Basin experiences a Mediterranean climate. Warm dry summers are followed by cool moist winters. Summer temperatures usually exceed 90 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures rarely raise much above 70 degrees Fahrenheit, with daytime highs often below 60 degrees Fahrenheit. Annual

[3] Ibid.

precipitation within the proposed Project site is about 10 inches, almost 85% of which falls between the months of October and March. Nearly all precipitation falls in the form of rain and storm-water readily infiltrates the soils of the surrounding the sites.

The proposed compost and biomass conversion facility Project is a modification of an existing strategically integrated waste management facility. The site currently consists of highly disturbed land utilized for landfill operations, and is occupied by very little vegetation. The site is relatively flat, with an elevation of approximately 298 feet above mean sea-level. The proposed Project area is composed primarily of Calgro-Calgro, saline-Sodic, soil complex.[4] This soil series is composed of moderately well drained soils formed in alluvium, which has been derived from granitic rock sources. Slopes are observed at 0 to 2 percent at 250-480 feet in elevation.[5] A very small portion of the Area of Interest (approximately 0.4%) is thought to be composed of Crosscreek-Kai association with 0 to 2 percent slopes.[6] The characteristics of this soil type are nearly identical to the Calgro series.

Native plant and animal species once abundant in the region have become locally extirpated or have experienced large reductions in their populations due to conversion of upland, riparian, and aquatic habitats to agricultural and urban uses. Remaining native habitats are particularly valuable to native wildlife species including special status species that still persist in the region.

According to the 2013 Negative Declaration, "…the proposed Project site is within the historic ranges of three listed species: Swainson's hawk (Buteo swainsoni), San Joaquin kit fox (Vulpes macrotis mutica), and vernal pool fairy shrimp (Branchinecta lynchi). San Joaquin kit fox are federally listed as "Endangered" while the state lists it as "Threatened" status; Swainson's hawk does not have a federally listed status but is listed as "Threatened" by the state; and fairy shrimp is listed as federally Threatened but not listed on the State's list."[7] "The immediate surrounding area remains rural in nature (agricultural production to the north, east, and south, and a dairy to the west) and may contain habitat for Swainson's hawk or kit fox. The mitigation measures contained in the Visalia Landfill EIR are still applicable and incorporated into this Negative Declaration by reference. Therefore, in the unlikely event of discovery of the earlier noted species on the site, protocols established by the U.S. Fish and Wildlife Service (USFW) or California Department of Fish and Wildlife (CDFW) will be implemented before any earthmoving activities are allowed to commence. If discovery occurs during earthmoving activities, all activities will be immediately ceased until a qualified biologist determines which course of action to implement per USFW or CDFW protocols."[8] Similar to the Negative Declaration, this Draft Focused EIR also incorporates the studies, conclusions, determinations, mitigations, etc., in their entirety.

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[4] USDA NRCS Web Soils Report, "*Custom Soil Resource Report for Tulare County, Western Part, California: Visalia Landfill-Proposed Compost Area."* 2021. Pages 9 (map) and 13.

[5] USDA NRCS, Official Series Descriptions. Calgro Series, January 2000. Accessed January 2021 at: https://soilseries.sc.egov.usda.gov/OSD_Docs/C/CALGRO.html#:~:text=The%20Calgro%20series%20consists%20of%20moderately%20deep%20to,granitic%20rock%20sources.%20Calgro%20soils%20are%20on%20terraces.

[6] USDA NRCS Web Soils Report, "*Custom Soil Resource Report for Tulare County, Western Part, California: Visalia Landfill-Proposed Compost Area."* 2021. Pages 9 (map) and 15.

[7] Ibid.

[8] Op. Cit. 14-15

As noted earlier, RMA staff accessed the California Natural Diversity Database (CNDDB, on September 25, 2021), RareFind 5, Biogeographic Information and Observation System (BIOS, a mapping application accessed to obtain current biological species data for the Project vicinity), for the proposed Project site and can be found in Appendix "B" of this DEIR.

Vineyard/Cropland

"Agricultural habitat covers approximately 795,340 acres of the County. Vegetation composition and structure in agricultural habitats are variable, depending on the type of crops grown and the time of year. For these reasons, habitat value for wildlife is also variable. In addition, the types and timing of operational activities of agricultural lands affects habitat suitability for wildlife. Tall and maintained crops such as vineyards will provide different habitat value and likely support different wildlife species than short crops with a lot of exposed bare ground between rows or pasture land."[9]

"Typical wildlife species that may use agricultural habitat include a variety of rodents – such as California ground squirrel and California vole (*Microtus californicus*) – and birds – such as red-winged blackbird, northern harrier, white-tailed kite, and yellow-billed magpie. Croplands provide food and water for these species, but do not generally provide long-term shelter due to the frequency of disturbance."[10]

Special Status Species

The following is an excerpt from the CDFW's most recent Special Animals List document, updated November 2020:

"*Special Animals* is a broad term used to refer to all the animal taxa tracked by the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB), regardless of their legal or protection status. This list is also referred to as the list of "species at risk" or "special status species." The Special Animals List includes species, subspecies, Distinct Population Segments (DPS), or Evolutionarily Significant Units (ESU) where at least one of the following conditions applies:

- Officially listed or proposed for listing under state and/or federal endangered species acts
- Taxa considered by the Department of Fish and Wildlife to be a Species of Special Concern (SSC)
- Taxa which meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the California Environmental Quality Act Guidelines
- Taxa that are biologically rare, very restricted in distribution, or declining throughout their range, but not currently threatened with extirpation
- Population(s) in California that may be peripheral to the major portion of a taxon's range but are threatened with extirpation in California

[9] Ibid.
[10] Tulare County, General Plan Background Report. February 2010. Page 9-22.

- Taxa closely associated with a habitat that is declining in California at a significant rate (e.g., wetlands, riparian, vernal pools, old growth forests, desert aquatic systems, native grasslands, valley shrubland habitats, etc.)
- Taxa designated as a special status, sensitive, or declining species by other state or federal agencies, or a non-governmental organization (NGO), and determined by the CNDDB to be rare, restricted, declining, or threatened across their range in California."[11]

State and Federal laws enable CDFW and USFWS to conserve special status animal species, which directly helps protect native populations, habitats and ecosystems valued as State resources.

The California Native Plant Society's (CNPS) Rare Plant Inventory, in addition to its comprehensive species lists, provide an authoritative resource on California's rare and endangered plant species. "Several lists of rare plants have been developed over the years for a variety of purposes, such as plants listed under the California Endangered Species Act (CESA) or the federal Endangered Species Act (ESA), or the Native Plant Protection Act (NPPA). California Native Plant Society {CNPS) has maintained and updated a list of plants it considers to be "rare" in California, with five separate lists, in its Inventory of Rare and Endangered Plants of California, now in its sixth edition. Federal, state, and some local government agencies also maintain lists of rare plants found within their jurisdiction. Special-status species are plants (including nonvascular plants) that are either listed as endangered or threatened under the Federal ESA or CESA; or considered to be rare under the California NPPA; or considered to be rare (but not formally listed) by resource agencies, professional organizations (e.g. CNPS, California Lichen Society), and the scientific community."[12]

The proposed Project site has the potential to contain habitat or foraging land for Swainson's hawk or kit fox; however, as the initial EIR and subsequent ND are more than five (5) years old, the CDFW's California Natural Diversity Database (CNDDB), RareFind 5 and Biogeographic Information and Observation System (BIOS) mapping application were accessed to obtain current (November 2021) biological species data for the Project vicinity.[13]

The BIOS list includes "mapped" species as well as "unprocessed" CNDDB data. The BIOS list indicates that there 53 special status species and 2 natural communities recorded within the 9-quadrangle Project vicinity. These special status species include: 19 plant species; 11 bird species; 7 mammal species; 5 insect species; 4 amphibian species; 3 reptile species; 3 crustacean species; and 1arachnid species. (See Attachment D of the Biological Technical Memorandum, included in Appendix "B" of this Draft EIR)

[11] California Department of Fish and Wildlife. Special Animals List, November 2020. Accessed February 2021 at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline#:~:text=%E2%80%A2%20Taxa%20designated%20as%20a%20special%20status,%20sensitive,,contains%20taxa%20that%20are%20actively%20inventoried,%20tracked,%20and.

[12] California Native Plant Society. Rare Plants: Definitions. Accessed February 2021 at: http://www.cnpsci.org/html/PlantInfo/Rare_Plant_Definitions.htm#:~:text=Special-status%20species%20are%20plants%20(including%20nonvascular%20plants)%20that,CNPS,%20California%20Lichen%20Society),%20and%20the%20scientific%20community.

[13] California Department of Fish and Wildlife. CNDDB Maps and Data. Accessed on November 2, 2021 at https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data.

The CNDDB list indicates that there are 14 special status species and 2 natural communities recorded within the 5-mile Project vicinity. These species include: 6 plant species; 3 bird species; 1 mammal species; 1 amphibian species; and 3 crustacean species. (See Attachment C of the Biological Technical Memorandum, included in Appendix "B" of this Draft EIR)

The CNDDB list also indicates that there is one (1) special status animal species, the San Joaquin kit fox, recorded within 0.5 mile of the Project site. (see Attachment B of the Biological Technical Memorandum, included in Appendix "B" of this Draft EIR)

<u>Jurisdictional Waters</u>

The Project site is within the boundaries of the Kaweah Delta Water Conservation District and the St. John's Water District. The Saint John's River is located approximately one mile north of the Project site. The CDFW's BIOS mapping application was accessed on September 28, 2021.[14] Based on the BIOS map, jurisdictional State waters are absent from the Project site. (see Attachment E of the Biological Technical Memorandum, included in Appendix "B" of this Draft EIR).

The United States Geological Survey (USGS) National Water Information System (NWIS) and United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping applications were accessed on October 25, 2021.[15, 16] Based on the information provided by the NWIS and NWI maps, the nearest jurisdictional bodies of water are classified by the USFWS as "riverine" and are located approximately 0.75 mile directly north and 0.5 mile directly south of the Project site (see Attachment E of the Biological Technical Memorandum included in Appendix "B" of this document). As these jurisdictional waters are absent from the Project site itself, the Project will not result in significant impact to any riparian habitats or other protected wetlands. Mitigation measures that would reduce impacts have not been proposed, nor would any measures be warranted.

<u>Sensitive Natural Communities</u>

"A sensitive natural community is a rare vegetation type that provides important habitat opportunities for wildlife, is structurally complex, or which is of special concern to local, State, or federal agencies. Natural communities that are either known or believed to be of high priority for inventory are listed in the California Natural Diversity Database (CNDDB). The following nine sensitive natural communities are found in Tulare County:

- Big Tree Forest;
- Central Valley Drainage Hardhead/Squawfish Stream;
- Great Valley Oak Riparian Forest;
- Northern Hardpan Vernal Pool;

[14] Ibid.

[15] United States Geological Survey. National Water Information System: Mapper. Accessed November 2021 at: https://maps.waterdata.usgs.gov/mapper/index.html

[16] United States Fish and Wildlife Service. Wetlands Mapper. https://www.fws.gov/wetlands/data/mapper.HTML

- Southern Interior Cypress Forest;
- Sycamore Alluvial Woodland;
- Valley Sacaton Grassland;
- Valley Saltbush Scrub; and
- Valley Sink Scrub."[17]

Sensitive Natural Communities are absent from the project area.

Wildlife Movement Corridors

Wildlife movement corridors are defined as areas of movement that animals regularly utilize in a predictable fashion, based on seasons, natural ranges and daily travel.

"A functional network of connected habitats is essential to the continued existence of California's diverse species and natural communities in the face of both human land use and climate change. Habitat is key to the conservation of fish and wildlife. Terrestrial species must navigate a habitat landscape that meets their needs for breeding, feeding and shelter. Natural and semi-natural components of the landscape must be large enough and connected enough to meet the needs of all species that use them. As habitat conditions change in the face of climate change, some species ranges are already shifting and wildlife must be provided greater opportunities for movement, migration, and changes in distribution. In addition, aquatic connectivity is critical for anadromous fish like salmon that encounter many potential barriers as they return upstream to their places of origin."[18]

No wildlife movement corridors will be impeded as a result of Project implementation.

Designated Critical Habitat

"The Endangered Species Act (ESA) requires the federal government to designate "critical habitat" for any species it lists under the ESA...Critical habitat designations have been established for the following eight species in Tulare County:

- Vernal pool fairy shrimp (*Branchinecta lynchi*),
- Vernal pool tadpole shrimp (*Lepidurus packardi*),
- Little Kern golden trout (*Oncorhynchus aquabonita whitei*),
- California tiger salamander, central population (*Ambystoma californiense*),
- California condor (*Gymnogyps californianus*),
- Hoover's spurge (*Chamaesyce hooveri*),
- San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*), and
- Keck's checker-mallow (*Sidalcea keckii*)."

There are no Critical Habitat areas designated in the Project area.

[17] Tulare County General Plan 2030 Update, Recirculated Draft Environmental Impact Report. February 2010. Page 3.11-3.12.
[18] California Department of Fish and Wildlife. Habitat Connectivity Planning for Fish and Wildlife. Accessed February 2021 at: https://wildlife.ca.gov/Conservation/Planning/Connectivity.

REGULATORY SETTING

Applicable Federal, State, and local regulations specific to biological resources are described below. The following environmental regulatory settings were summarized, in part, from information contained in the Tulare County General Plan 2010 Background Report.

Federal Agencies & Regulations

Federal Endangered Species Act

"The U.S. Fish and Wildlife Service (USFWS) administers the federal Endangered Species Act (16 USC Section 153 et seq.) and thereby has jurisdiction over federally listed threatened, endangered, and proposed species. Projects that may result in a "take" of a listed species or critical habitat must consult with the USFWS. "Take" is broadly defined as harassment, harm, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collection; any attempt to engage in such conduct; or destruction of habitat that prevents an endangered species from recovering (16 USC 1532, 50 CFR 17.3). Federal agencies that propose, fund, or must issue a permit for a project that may affect a listed species or critical habitat are required to consult with the USFWS under Section 7 of the Federal Endangered Species Act. If it is determined that a federally listed species or critical habitat may be adversely affected by the federal action, the USFWS will issue a "Biological Opinion" to the federal agency that describes minimization and avoidance measures that must be implemented as part of the federal action. Projects that do not have a federal nexus must apply for a take permit under Section 10 of the Act. Section 10 of the act requires that the project applicant prepare a habitat conservation plan as part of the permit application (16 USC 1539)."[19]

"Under Section 4 of the Federal Endangered Species Act, a species can be removed, or delisted, from the list of threatened and endangered species. Delisting is a formal action made by the USFWS and is the result of a determined successful recovery of a species. This action requires posts in the federal registry and a public comment period before a final determination is made by the USFWS."[20]

Habitat Conservation Plans

"Habitat Conservation Plans (HCPs) are required for a non-federal entity that has requested a take permit of a federal listed species or critical habitat under Section 10 of the Endangered Species Act. HCPs are designed to offset harmful effects of a proposed project on federally listed species. These plans are utilized to achieve long-term biological and regulatory goals. Implementation of HCPs allows development and projects to occur while providing conservation measures that protect federally listed species or their critical habitat and offset the incidental take of a proposed project. HCPs substantially reduce the burden of the Endangered Species Act on small landowners by providing efficient mechanisms for compliance with the ESA, thereby distributing the economic and logistic effects of compliance. A broad range of landowner activities can be legally protected under these plans (County of Tulare, 2010 Background Report, pages 9-6 and 9-7, 2010a). There are

[19] Tulare County General Plan 2030 Update, Recirculated Draft Environmental Impact Report. February 2010. Page 3.11-2.
[20] Ibid.

generally two types of HCPs, project specific HCPs which typically protect a few species and have a short duration and multi-species HCPs which typically cover the development of a larger area and have a longer duration."[21]

Migratory Bird Treaty and Bald and Golden Eagle Protection Act

"The Migratory Bird Treaty Act (MBTA, 16 USC Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668) protect certain species of birds from direct "take". The MBTA protects migrant bird species from take by setting hunting limits and seasons and protecting occupied nests and eggs. The Bald and Golden Eagle Protection Act (16 USC Sections 668-668d) prohibits the take or commerce of any part of Bald and Golden Eagles. The USFWS administers both acts, and reviews federal agency actions that may affect species protected by the acts."[22]

Clean Water Act - Section 404

"Wetlands and other waters of the U.S. are subject to the jurisdiction of the U.S. Army Corp of Engineers (USACE) and U.S. Environmental Protection Agency (EPA) under Section 404 of the Clean Water Act (33 U.S.C. 1251 et seq., 1972). Together, the EPA and the USACE determine whether they have jurisdiction over the non-navigable tributaries that are not relatively permanent based on a fact-specific analysis to determine if there is a significant nexus. These non-navigable tributaries include wetlands adjacent to non-navigable tributaries that are not relatively permanent and wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary."[23]

"Wet areas that are not regulated by this Act do not have a hydrologic link to other waters of the U.S., either through surface or subsurface flow and include ditches that drain uplands, swales or other erosional features. The USACE has the authority to issue a permit for any discharge, fill, or dredge of wetlands on a case-by-case basis, or by a general permit. General permits are handled through a Nationwide Permit (NWP) process. These permits allow specific activities that generally create minimal environmental effects. Projects that qualify under the NWP program must fulfill several general and specific conditions under each applicable NWP. If a proposed project cannot meet the conditions of each applicable NWP, an individual permit would likely be required from the USACE."[24]

State Agencies & Regulations

California Department of Fish and Wildlife (formerly Department of Fish and Game)

"The California Department of Fish and Wildlife (DFW) regulates the modification of the bed, bank, or channel of a waterway under Sections 1601-1607 of the California Fish and Game Code. Also included are modifications that divert, obstruct, or change the natural flow of a waterway. Any party who proposes an activity that may modify a feature regulated by the Fish and Game

[21] Op. Cit.
[22] Op. Cit. 3.11-3.
[23] Op. Cit. 3.11-1.
[24] Op. Cit. 3.11-1 to 3.11.2.

Code must notify DFW before project construction. DFW will then decide whether to enter into a Streambed Alteration Agreement with the project applicant either under Section 1601 (for public entities) or Section 1603 (for private entities) of the Fish and Game Code."[25]

California Endangered Species Act

"DFW administers the California Endangered Species Act of 1984 (Fish and Game Code Section 2080), which regulates the listing and "take" of endangered and threatened State-listed species. A "take" may be permitted by California Department of Fish and Game through implementing a management agreement. "Take" is defined by the California Endangered Species Act as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" a State-listed species (Fish and Game Code Sec. 86). Under State laws, DFW is empowered to review projects for their potential impacts to State-listed species and their habitats.

The DFW maintains lists for Candidate-Endangered Species (SCE) and Candidate-Threatened Species (SCT). California candidate species are afforded the same level of protection as State-listed species. California also designates Species of Special Concern (CSC) that are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species do not have the same legal protection as listed species, but may be added to official lists in the future. The CSC list is intended by DFW as a management tool for consideration in future land use decisions (Fish and Game Code Section 2080).

All State lead agencies must consult with DFW under the California Endangered Species Act when a proposed project may affect State-listed species. DFW would determine if a project under review would jeopardize or result in taking of a State-listed species, or destroy or adversely modify its essential habitat, also known as a "jeopardy finding" (Fish and Game Code Sec. 2090). For projects where DFW has made a jeopardy finding, DFW must specify reasonable and prudent alternatives to the proposed project to the State lead agency (Fish and Game Code Sec. 2090 et seq.)."[26]

Natural Communities Conservation Planning Act

"The Natural Communities Conservation Planning Act allows a process for developing natural community conservation plans (NCCPs) under DFW direction. NCCPs allow for regional protection of wildlife diversity, while allowing compatible development. DFW may permit takings of State-listed species whose conservation and management are provided in a NCCP, once a NCCP is prepared (Fish and Game Code Secs. 2800 et seq.)."[27]

Federally and State-Protected Lands

"Ownership of California's wildlands are divided primarily between federal, state, and private entities. State-owned land is managed under the leadership of the Departments of Fish and Game (DFW), Parks and Recreation, and Forestry and Fire Protection (CDF, now CalFire). Tulare

[25] Op. Cit. 3.11-3.
[26] Op. Cit.
[27] Op. Cit. 3.11-4.

County has protected lands in the form of wildlife refuges, national parks, and other lands that have large limitations on appropriate land uses. Some areas are created to protect special status species and their ecosystems."[28]

California Wetlands Conservation Policy

"The California Wetlands Conservation Policy's goal is to establish a policy framework and strategy that will ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California. Additionally, the policy aims to reduce procedural complexity in the administration of State and federal wetlands conservation programs and to encourage partnerships with a primary focus on landowner incentive programs and cooperative planning efforts. These objectives are achieved through three policy means: statewide policy initiatives, three geographically based regional strategies in which wetland programs can be implemented, and creation of interagency wetlands task force to direct and coordinate administration and implementation of the policy. Leading agencies include the Resources Agency and the California Environmental Protection Agency (Cal/EPA) in cooperation with Business, Transportation and Housing Agency, Department of Food and Agriculture, Trade and Commerce Agency, Governor's Office of Planning and Research, Department of Fish and Game, Department of Water Resources, and the State Water Resources Control Board."[29]

Raptors

"The word "raptor" is the term used for a group of birds consisting of hawks, falcons, kites, eagles, vultures and owls. Raptors, also referred to as "birds of prey", are a valuable resource to the State of California, and therefore all raptors are protected under State law (See Fish and Game Code, Sections 3503, 3503.5, 3505 and 3513, and California Code of Regulation, Title 14, Sections 251.1, 652 and 783-786.6). There are over 30 species of raptors that inhabit California at some point in their life cycle."[30]

CEQA and Oak Woodland Protection

CEQA Statute Section 21083.4, "Counties; Conversion of Oak Woodlands; Mitigation Alternatives," requires that counties determine whether a development will have potential impacts on oak woodlands:

> 21083.4(a): "For purposes of this section, "oak" means a native tree species in the genus Quercus, not designated as Group A or Group B commercial species pursuant to regulations adopted by the State Board of Forestry and Fire Protection pursuant to Section 4526, and that is 5 inches or more in diameter at breast height."

[28] Op. Cit.
[29] Op. Cit.
[30] California Department of Fish and Wildlife. Raptors in California. Accessed February 2021 at: https://wildlife.ca.gov/Conservation/Birds/Raptors.

21083.4(b): " …a county shall determine whether a project within its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment. If a county determines that there may be a significant effect to oak woodlands, the county shall require one or more of the…[listed] oak woodlands mitigation alternatives…"

The Project sites is not located in an oak woodland area.

Local Policy & Regulations

Tulare County General Plan Policies

The Tulare County General Plan has a number of policies that apply to projects within County of Tulare. General Plan policies that relate to the proposed Project are listed below.

ERM-1.1 Protection of Rare and Endangered Species - The County shall ensure the protection of environmentally sensitive wildlife and plant life, including those species designated as rare, threatened, and/or endangered by State and/or Federal government, through compatible land use development.

ERM-1.2 Development in Environmentally Sensitive Areas - The County shall limit or modify proposed development within areas that contain sensitive habitat for special status species and direct development into less significant habitat areas. Development in natural habitats shall be controlled so as to minimize erosion and maximize beneficial vegetative growth.

ERM-1.15 Minimize Lighting Impacts - The County shall ensure that lighting associated with new development or facilities (including street lighting, recreational facilities, and parking) shall be designed to prevent artificial lighting from illuminating adjacent natural areas at a level greater than one foot candle above ambient conditions.

ERM-1.16 Cooperate with Wildlife Agencies - The County shall cooperate with State and federal wildlife agencies to address linkages between habitat areas.

ERM-1.17 Conservation Plan Coordination - The County shall coordinate with local, State, and federal habitat conservation planning efforts (including Section 10 Habitat Conservation Plan) to protect critical habitat areas that support endangered species and other special-status species.

IMPACT EVALUATION

Would the project:

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

Project Impact Analysis: ***Less Than Significant Impact With Mitigation***

As noted in the Biological Technical Memorandum, the Project site is in the historic range (within 5-miles) of various special status plant and animal species and has potential for habitat and foraging grounds for the San Joaquin kit fox, burrowing owl, and Swainson's hawk. The Project site is within the boundaries of the existing Visalia Landfill, and as such, is required to comply with existing mitigation measures for the site as specified in the previously noted Visalia Landfill Master Development Plan, Final Environmental Impact Report (SCH# 2000051098), and Visalia Landfill Waste Management Unit-1 Closure Construction Negative Declaration (SCH#2013081024). However, as the Project site is currently not active (i.e., not conducting any daily landfill operations or earthmoving-related activities) mitigation measures are included as an abundance of caution.

Project Impacts to Special Status Plant and Animal Species

As noted earlier, the BIOS list indicates that there 53 special status species and 2 natural communities recorded within the **9-quadrangle Project vicinity** (emphasis added). These special status species include: 19 plant species; 11 bird species; 7 mammal species; 5 insect species; 4 amphibian species; 3 reptile species; 3 crustacean species; and 1arachnid species. The CNDDB list indicates that there are 14 special status species and 2 natural communities recorded within the **5-mile Project vicinity** (emphasis added). These species include: 6 plant species; 3 bird species; 1 mammal species; 1 amphibian species; and 3 crustacean species. Lastly, the CNDDB list also indicates that there is one (1) special status animal species, the San Joaquin kit fox, recorded **within 0.5 mile of the Project site** (emphasis added).

There are no special status species, natural communities, or protected riparian habitats or wetlands located within the Project site. Mitigation measures included in the previously noted EIR prepared and certified for the Project area remain applicable and enforceable. These mitigation measures require pre-construction surveys for special status plant and animal species, respectively, and will be implemented prior to the onset of Project-related activities. If no special status species are encountered within the Project site during pre-construction surveys, no further action will be required; however, in the event that special status species are identified, these measures require consultation with and implementation of CDFW and/or USFWS requirements. If a special status plant or animal species is encountered during post-construction related activities, **Mitigation Measures 3.2-1** through **3.2-1** will be implemented.

With implementation of **Mitigation Measures 3.2-1** through **3.2-11**, impacts to special status plant and animal species would be ***Less Than Significant With Mitigation*** related to this Checklist Item will occur.

Cumulative Impact Analysis: ***Less Than Significant Impact With Mitigation***

The geographic area of this cumulative analysis is the San Joaquin Valley. While the study area is limited to Tulare County, sensitive species with similar habitat requirements may exist in other portions of the San Joaquin Valley; and therefore, cumulative impacts would extend beyond Tulare County political boundaries.

The proposed Project would only contribute to cumulative impacts related to this Checklist item if Project-specific impacts were to occur. As noted earlier, the Project has the potential to result in loss of habitat or direct impact to these special status species, ***Less Than Significant Cumulative Impact With Mitigation*** related to this Checklist Item will occur.

Mitigation Measure(s): ***See Mitigation Measures 3.2-1 through 3.2-11.***

Swainson's Hawk

3.2-1 (Temporal Avoidance). In order to avoid impacts to nesting birds, construction activities in the rural zone will occur, where possible, outside the nesting season, typically defined as March 1-September 15.

3.2-2 (Pre-construction Surveys). If construction activities in the rural zone must occur between March 1 and September 15, a qualified biologist will conduct preconstruction nest surveys for Swainson's hawks on and within ½ mile of the work area within 30 days prior to the start of construction. The survey will consist of inspecting all accessible, suitable trees of the survey area for the presence of nests and hawks.

3.2-3 (Avoidance of Active Nests). Should any active Swainson's hawk nests be discovered within the survey area, the observation will be submitted to the CNDDB, and an appropriate disturbance-free buffer will be established around the nest based on local conditions and agency guidelines. Disturbance-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently.

Burrowing Owl

3.2-4 (Pre-construction Surveys). A pre-construction survey for burrowing owls will be conducted by a qualified biologist within 30 days of the onset of project-related activities involving ground disturbance or heavy equipment use. The survey area will include all suitable habitat on and within 500 feet of project impact areas, where accessible.

3.2-5 (Avoidance of Active Nests). If pre-construction surveys and subsequent project activities are undertaken during the breeding season (February 1-August 31) and active nest burrows are located within or near project impact areas, a 250-foot construction setback will be established around active owl nests, or alternate avoidance measures implemented in consultation with CDFW. The buffer areas will be enclosed with temporary fencing to prevent construction equipment and workers from entering the setback area. Buffers will remain in place for the duration of the breeding season, unless otherwise arranged with CDFW. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described below.

3.2-6 (Passive Relocation of Resident Owls). During the non-breeding season (September 1-January 31), resident owls occupying burrows in project impact areas may be passively relocated to alternative habitat in accordance with a relocation plan prepared by a qualified biologist. Passive relocation may include one or more of the following elements: 1) establishing a minimum 50 foot buffer around all active burrowing owl burrows, 2) removing all suitable burrows outside the 50 foot buffer and up to 160 feet outside of the impact areas as necessary, 3) installing one-way doors on all potential owl burrows within the 50 foot buffer, 4) leaving one-way doors in place for 48 hours to ensure owls have vacated the burrows, and 5) removing the doors and excavating the remaining burrows within the 50 foot buffer.

San Joaquin Kit Fox

3.2-7 (Pre-construction Surveys). Pre-construction surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance, construction activities, and/or any project activity likely to impact the San Joaquin kit fox. These surveys will be conducted in accordance with the USFWS *Standard Recommendations*. The primary objective is to identify kit fox habitat features (e.g.; potential dens and refugia) on the project site and evaluate their use by kit foxes through use of remote monitoring techniques such as motion-triggered cameras and tracking medium. If an active kit fox den is detected within or immediately adjacent to the area of work, the USFWS and CDFW shall be contacted immediately to determine the best course of action.

3.2-8 (Avoidance). Should a kit fox be found using any of the sites during preconstruction surveys, the project will avoid the habitat occupied by the kit fox and the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified.

3.2-9 (Minimization). Construction activities shall be carried out in a manner that minimizes disturbance to kit foxes. Minimization measures include, but are not limited to: restriction of project-related vehicle traffic to established roads, construction areas, and other designated areas; inspection and covering of structures (e.g., pipes), as well as installation of escape structures, to prevent the inadvertent entrapment of kit foxes; restriction of rodenticide and herbicide use; and proper disposal of food items and trash.

3.2-10 (Employee Education Program) Prior to the start of construction the applicant will retain a qualified biologist to conduct a tailgate meeting to train all construction staff that will be involved with the project on the San Joaquin kit fox. This training will include a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during project construction and implementation.

3.2-11 (Mortality Reporting) The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified in writing within three working days in case of the accidental death or injury of a San Joaquin kit fox during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.

Conclusion: ***Less Than Significant Impact With Mitigation***

As noted earlier, ***Less Than Significant Project-specific and Cumulative Impacts With Mitigation*** related to this Checklist Item would occur.

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 US Fish and Wildlife Service?

Project Impact Analysis: ***No Impact***

The Project site is currently in use for landfill operations. Riparian or other sensitive habitats do not occur on the Project site. Because these habitats are absent, they will not be impacted by Project implementation. As such, ***No Project-specific Impacts*** related to this Checklist Item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is the San Joaquin Valley. While the study area is limited to Tulare County, sensitive species with similar habitat requirements may exist in other portions of the San Joaquin Valley; and therefore, cumulative impacts will extend beyond Tulare County political boundaries.

The proposed Project would only contribute to cumulative impacts related to this Checklist Item if Project-specific impacts were to occur. As the proposed Project does not result in loss of habitat or direct impact to these special status species, ***No Cumulative Impacts*** will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***No Impact***

As noted earlier, ***No Project-specific or Cumulative Impacts*** related to this Checklist Item will occur.

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

Project Impact Analysis: ***No Impact***

As previously stated, the Project site is currently in use for landfill operations; thus, the site has previously been highly disturbed and contains no hydrologic features. As such, federally protected waters and waters of the state are absent from the Project site. The Project will have no impact on jurisdictional waters. As such, ***No Project-specific Impacts*** related to this Checklist Item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is the western U.S. While the study area is limited to Tulare County, federally protected wetlands exist in other portions of the U.S., and therefore cumulative impacts will extend beyond Tulare County political boundaries.

The proposed Project would only contribute to cumulative impacts related to this Checklist item if Project-specific impacts were to occur. As the proposed Project would not impact federally protected wetlands, ***No Cumulative Impacts*** will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***No Impact***

As noted earlier, ***No Project-specific or Cumulative Impacts*** related to this Checklist item will occur.

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?

Project Impact Analysis: ***No Impact***

Wildlife is not expected to regularly use or traverse through the Project site, as it is currently in use for landfill operations. There is frequent human activity at the site, involving heavy equipment and vehicles. The Project site does not contain any features that would function as a fish or wildlife movement corridor, nor would it be considered a nursery site for any species. Therefore, the Project will not impede the movement of native fish or wildlife species, nor impede their use of a nursery site. Project impacts to wildlife movements, movement corridors, and nursery sites are considered less than significant under CEQA.

As such, ***No Project-specific Impacts*** related to this Checklist Item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is the San Joaquin Valley. While the study area is limited to Tulare County, corridors for fish and wildlife species with similar habitat requirements may exist in other portions of the San Joaquin Valley, and therefore cumulative impacts will extend beyond Tulare County political boundaries.

The proposed Project would only contribute to cumulative impacts related to this Checklist item if Project-specific impacts were to occur. As the proposed Project does not impact federally protected wetlands, wildlife corridors or wildlife nurseries, ***No Cumulative Impacts*** will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***No Impact***

As noted earlier, ***No Project-specific or Cumulative Impacts*** related to this Checklist Item will occur.

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

Project Impact Analysis: ***No Impact***

The proposed Project is consistent with the goals and policies of the Tulare County General Plan. Any Habitat Conservation Plans or Natural Community Conservation Plans outlined by the County will not be affected by Project implementation. Therefore, the Project would be carried out in compliance with local policies and ordinances. ***No Project-specific Impacts*** related to this Checklist Item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County.

There will be no impacts to policies or ordinances relating to biological resources, and therefore there will be ***No Cumulative Impacts*** related to this Checklist Item.

Mitigation Measure(s): ***None Required.***

Conclusion: ***No Impact***

As noted earlier, no Project-specific or cumulative impacts related to this Checklist item will occur.

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?

Project Impact Analysis: ***No Impact***

As noted earlier, there are two habitat conservation plans that apply in Tulare County. The Kern Water Habitat Conservation Plan only applies to an area in Allensworth (near the southwest quadrant of the County) and the Project site is not subject to this Plan. The Recovery Plan for Upland Species in the San Joaquin Valley outlines a number of species that are important to the San Joaquin Valley. None of these species were identified on the Project site. As such, ***No Project-specific Impacts*** related to this Checklist Item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is California. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

There are no impacts related to habitat conservation plans, and therefore there are ***No Cumulative Impacts*** that will conflict with local policies or ordinances.

Mitigation Measure(s): ***None Required.***

Conclusion: ***No Impact***

As noted earlier, ***No Project-specific or Cumulative Impacts*** related to this Checklist Item will occur.

DEFINITIONS AND/OR ACRONYMS

Acronyms

AB	Assembly Bill (in California)
APN	Assessor Parcel Number
BIOS	Biogeographic Information and Observation System
CalEPA	California Environmental Protection Agency
CEQA	California Environmental Quality Act
CCR	California Code of Regulations
CDF	California Department of Forestry and Fire Protection (now CalFire)
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database

CNPS	California Native Plant Society
DEIR	Draft Environmental Impact Report
EIR	Environmental Impact Report
ERM	Environmental Resources Management
ESA	Endangered Species Act (Federal)
HCP	Habitat Conservation Plan
MBTA	Migratory Bird Treaty Act
NCCP	natural communities conservation Plan
NGO	Non-governmental Organization
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
NWIS	National Water Information System
NWP	Nationwide Permit
RMA	Tulare County Resource Management Agency
SB	Senate Bill (in California)
SCH	State Clearinghouse
SSC	Species of Special Concern
UAACE	United States Army Corp of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

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Chapter 3.3
Cultural Resources

SUMMARY OF FINDINGS

The proposed Project will result in a ***Less Than Significant Impact With Mitigation*** to Cultural Resources. A records search was performed through the California Historical Resources Information System (CHRIS), which is included in Appendix "C" of this draft Environmental Impact Report (draft EIR, draft EIR,or EIR). The records search included recorded historical and archaeological sites and maps of the affected area by staff at the Southern San Joaquin Information Center (SSJVIC), located at California State University, Bakersfield, California. The efforts also included contact with Native American Heritage Commission which conducted a Sacred Lands File Search and provided a list of tribal contacts, and correspondence with representatives of affected tribes, a literature review of historic and archaeological data pertaining to the area in question. A detailed review of potential impacts is provided in the following analysis.

INTRODUCTION

California Environmental Quality Act (CEQA) Requirements

Several CEQA statutes and guidelines address requirements for cultural resources, including historic and archaeological resources. If a proposed Project may cause a substantial adverse change in the significance of a historical resource, then the project may be considered to have a significant effect on the environment, and the impacts must be evaluated under CEQA.[1] The definition of "historical resources" is included in Section 15064.5 of CEQA Guidelines, and includes both historical and archaeological resources. "Substantial adverse change" is defined as "physical demolition, destruction, relocation, or alteration of the resource…"

Section 15064.5 also provides guidelines when there is a probable likelihood of Native American remains existing in the project site. Provisions for the accidental discovery of historical or unique archaeological resources accidentally discovered during construction include a recommendation for evaluation by a qualified archaeologist, with follow up as necessary.

Public Resources Code Section 5097.5 prohibits excavation or removal of any "vertebrate paleontological site…or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands."

[1] California Public Resources Code. Division 13. Chapter 2.6. Section 21084.1. Accessed July 2021 at: http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum=21084.1.

This section of the draft EIR for the proposed Project meets CEQA requirements by addressing potential impacts to cultural resources on the proposed Project site. The "Environmental Setting" section provides a description of cultural resources in the region, with special emphasis on the proposed Project site and vicinity. The "Regulatory Setting" section provides a description of applicable State and local regulatory policies. Results of the reports from CHRIS are included. A description of potential impacts is provided, along with feasible mitigation measures to reduce the impacts to less than significant.

CEQA Thresholds of Significance

Under CEQA Guidelines Section 15064.5. (b) "A project with an effect 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."

(1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

(2) The significance of an historical resource is materially impaired when a project:

  (A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

  (B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

  (C) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

(3) Generally, a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), Weeks and Grimmer, shall be considered as mitigated to a level of less than a significant impact on the historical resource.

(4) A lead agency shall identify potentially feasible measures to mitigate significant adverse changes in the significance of an historical resource. The lead agency shall

ensure that any adopted measures to mitigate or avoid significant adverse changes are fully enforceable through permit conditions, agreements, or other measures.

(5) When a project will affect state-owned historical resources, as described in Public Resources Code Section 5024, and the lead agency is a state agency, the lead agency shall consult with the State Historic Preservation Officer as provided in Public Resources Code Section 5024.5. Consultation should be coordinated in a timely fashion with the preparation of environmental documents."[2]

ENVIRONMENTAL SETTING

"Tulare County lies within a culturally rich province of the San Joaquin Valley. Studies of the prehistory of the area show inhabitants of the San Joaquin Valley maintained fairly dense populations situated along the banks of major waterways, wetlands, and streams. Tulare County was inhabited by aboriginal California Native American groups consisting of the Southern Valley Yokuts, Foothill Yokuts, Monache, and Tubatulabal. Of the main groups inhabiting the Tulare County area, the Southern Valley Yokuts occupied the largest territory."[3]

"California's coast was initially explored by Spanish (and a few Russian) military expeditions during the late 1500s. However, European settlement did not occur until the arrival into southern California of land-based expeditions originating from Spanish Mexico starting in the 1760s. Early settlement in the Tulare County area focused on ranching. In 1872, the Southern Pacific Railroad entered Tulare County, connecting the San Joaquin Valley with markets in the north and east. About the same time, valley settlers constructed a series of water conveyance systems (canals, dams, and ditches) across the valley. With ample water supplies and the assurance of rail transport for commodities such as grain, row crops, and fruit, a number of farming colonies soon appeared throughout the region."[4]

"The colonies grew to become cities such as Tulare, Visalia, Porterville, and Hanford. Visalia, the County seat, became the service, processing, and distribution center for the growing number of farms, dairies, and cattle ranches. By 1900, Tulare County boasted a population of about 18,000. New transportation links such as SR 99 (completed during the 1950s), affordable housing, light industry, and agricultural commerce brought steady growth to the valley. The California Department of Finance estimated the 2007 Tulare County population to be 430,167."[5]

Existing Cultural and Historic Resources

"Tulare County's known and recorded cultural resources were identified through historical records, such as those found in the National Register of Historic Places, the Historic American Building Survey/Historic American Engineering Record (HABS/HAER), the California Register

[2] CEQA Guidelines. Section 15064.5 (b).
[3] Tulare County General Plan Update 2030. Page 8-5.
[4] Ibid.
[5] Op. Cit. 8-6.

of Historic Resources, California Historical Landmarks, and the Tulare County Historical Society list of historic resources."[6]

Due to the sensitivity of many prehistoric, ethnohistoric, and historic archaeological sites, locations of these resources are not available to the general public. The Information Center at California State University, Bakersfield houses records associated with reported cultural resources surveys, including the records pertinent to sensitive sites, such as burial grounds, important village sites, and other buried historical resources protected under state and federal laws.

As described earlier, a CHRIS search was performed on behalf of the Project on March 2, 2021, which included recorded historical and archaeological sites and maps of the affected area. The results indicate that no cultural resources have been recorded on-site; however, there are two recorded resources within one-half mile of the site; two unnamed ditches.

Natural Setting

The Project area is located approximately one (1) mile northwest of the City of Visalia, in an agricultural area of the San Joaquin Valley. The site is highly developed and currently utilized for landfill operations. Its elevation is approximately 290-298 feet above sea level. The St. John's River lies approximately 1.3 miles to the north of the Project site and is identified as a Riverine Habitat by the National Wetlands Inventory (NWI) Mapper[7].

The Windmiller Pattern

According to the Society for California Archaeology (SCA), there are many chronological and cultural units (i.e., periods, phases, horizons, stages, traditions, etc.) that define California prehistory. "The literature on prehistoric California contains numerous designations for units referring to chronological, geographical, cultural, technological, or functional diversity in the archaeological record. These dimensions have often been invoked in overlapping or inconsistent ways."[8] The Windmiller pattern was identified in the Sacramento-San Joaquin Delta and is thought to be one of the oldest archaeological complexes (Lillard et al. 1939). As defined by SCA, a Pattern is "A geographically and chronologically extended cultural unit within a region, characterized by similar technology, economy, and burial practices."[9]

The Windmiller pattern is identified as "A middle to late Holocene tradition, pattern, facies, or culture in central California, particularly in the Sacramento delta, dated between 5000-2500 and 2000-500 B.C. The Windmiller tradition has been identified with the Early horizon or period and classified within the late Archaic period. Locally, the Windmiller facies was followed by the Morse, Deterding, Brazil, Need, or Orwood facies. The pattern has been identified with the Utian ethnolinguistic group. The type site is the Windmiller Mound Site (SAC-107). (Beardsley 1954;

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[6] Tulare County General Plan 2030 Update *Background Report.* Page 9-56.

[7] United States Environmental Protection Agency, NEPAssist. National Wetlands Inventory Mapper. Accessed July 2021 at: https://nepassisttool.epa.gov/nepassist/nepamap.aspx.

[8] Society for California Archaeology. Chronological and Cultural Units. A Glossary of Proper Names in California History. Accessed July 2021 at: https://scahome.org/about-ca-archaeology/glossary-of-terms/chronological-and-cultural-units/.

[9] Ibid.

Bennyhoff and Fredrickson 1994; Chartkoff and Chartkoff 1984; Fredrickson 1994; Lillard et al. 1939; Ragir 1972)."[10] The Windmiller Pattern represents an important facet of Tulare County's prehistory.

REGULATORY SETTING

Federal Agencies & Regulations

The National Historic Preservation Act

"With passage of the National Historic Preservation Act (NHPA) in 1966, Congress made the federal government a full partner and a leader in historic preservation. While Congress recognized that national goals for historic preservation could best be achieved by supporting the drive, enthusiasm, and wishes of local citizens and communities, it understood that the federal government must set an example through enlightened policies and practices.

In the words of the NHPA, the federal government's role is to "provide leadership" for preservation, "contribute to" and "give maximum encouragement" to preservation, and "foster conditions under which our modern society and our prehistoric and historic resources can exist in productive harmony." Indeed, an underlying motivation for passage of the NHPA was to transform the federal government from an agent of indifference, frequently responsible for needless loss of historic resources, to a facilitator, an agent of thoughtful change, and a responsible steward for future generations.

Section 106 of the NHPA requires that federal agencies take into account the effects of their actions on historic properties and give the ACHP an opportunity to comment on any effects. The ACHP has issued regulations that guide how agencies should fulfill this responsibility."[11]

State Agencies & Regulations

California State Office of Historic Preservation (OHP)

"The California State Office of Historic Preservation (OHP) is responsible for administering federally and state mandated historic preservation programs to further the identification, evaluation, registration and protection of California's irreplaceable archaeological and historical resources under the direction of the State Historic Preservation Officer (SHPO), appointed by the governor, and the State Historical Resources Commission, a gubernatorial appointee, and the State Historic Resources Commission."[12]

[10] Ibid

[11] Advisory Council on Historic Preservation. National Historic Preservation Act. Accessed June 2021 at: https://www.achp.gov/preservation-legislation.

[12] California State Parks. Office of Historic Preservation. Mission and Responsibilities. Accessed July 2021 at: https://ohp.parks.ca.gov/?page_id=1066.

"OHP's responsibilities include: Identifying, evaluating, and registering historic properties; Ensuring compliance with federal and state regulatory obligations; Encouraging the adoption of economic incentives programs designed to benefit property owners; Encouraging economic revitalization by promoting a historic preservation ethic through preservation education and public awareness and, most significantly, by demonstrating leadership and stewardship for historic preservation in California."[13]

"The California Historical Resources Information System (CHRIS) maintains a wide range of documents and materials relating to historical resources (e.g., buildings, structures, objects, historic and archaeological sites, landscapes, districts). The CHRIS operates structurally through the California Office of Historic Preservation (OHP), nine Information Centers (ICs), and the State Historical Resources Commission (SHRC). The OHP administers and coordinates the CHRIS and presents proposed CHRIS policies to the SHRC, which approves these polices in public meetings, under authorization of Public Resources Code 5020.4(a)(2) and 5020.4(a)(3). Policies are codified in the CHRIS Information Center Rules of Operations Manual.[14]

"The CHRIS Information Centers (ICs) are located on California State University and University of California campuses in regions throughout the state. The nine ICs provide historical resources information, generally on a fee-for-service basis, to local governments, state and federal agencies, Native American tribes, and individuals with responsibilities under the National Environmental Policy Act, the National Historic Preservation Act, and the California Environmental Quality Act (CEQA), as well as to the general public. Currently, the OHP and the ICs each maintain separate parts of the CHRIS Inventory. The OHP's portion of the Inventory is forwarded to the ICs according to their county-based service areas so that it can be accessed by CHRIS users. It is statewide in scope, but primarily includes information that has been submitted directly to the OHP. Each of the ICs maintains a part of the CHRIS Inventory that although it is geographically limited to that IC's service area, includes both information forwarded from the OHP and information that has been submitted directly to that IC by users of the CHRIS. These different parts of the CHRIS Inventory are a combination of paper documents and maps and digital files (whether submitted digitally or converted to that format by the CHRIS). The collective information managed electronically in the CHRIS Inventory is generally referred to as the CHRIS Database."[15] Tulare, Fresno, Kern, Kings and Madera counties are served by the Southern San Joaquin Valley Historical Resources Information Center (Center), located at California State University, Bakersfield, in Bakersfield, CA. The Center provides information on known historic and cultural resources to governments, institutions and individuals.[16]

A historical resource may be eligible for inclusion in the California Register of Historical Resources (CRHR) if it meets the following four Criteria for Designation:

[13] Ibid.

[14] California State Parks. California Office of Historic Preservation. California Historical Resources Information System. Accessed June 2021 at: http://ohp.parks.ca.gov/?page_id=1068.

[15] California State Parks. California Office of Historic Preservation. About the CHRIS Information Centers. Accessed June 2021 at: http://ohp.parks.ca.gov/?page_id=28730.

[16] California State Parks. California Office of Historic Preservation. CHRIS Information Center Locations and Contacts. Accessed June 2021 at: https://ohp.parks.ca.gov/?page_id=30331.

"Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States (Criterion 1).

Associated with the lives of persons important to local, California or national history (Criterion 2).

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 (Criterion 3).

Has yielded, or may be likely to yield, information important in prehistory or local, California or national history (Criterion 4)."[17]

CEQA Guidelines: Historical Resources Definition

CEQA Guidelines Section 15064.5(a) defines a historical resource as:

"(1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code §5024.1, Title 14 CCR, Section 4850 et seq.).

(2) A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

(3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code, § 5024.1, Title 14 CCR, Section 4852) including the following:

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

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

[17] California State Parks. Office of Historic Preservation. California Register of Historical Resources. Accessed June 2021 at: http://www.ohp.parks.ca.gov/?page_id=21238.

(C) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

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

(4) 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 (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1(j) or 5024.1."[18]

CEQA Guidelines: Archaeological Resources

Section 15064.5(c) of CEQA Guidelines provides specific guidance on the treatment of archaeological resources as noted below.

"(1) When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subdivision (a).

(2) If a lead agency determines that the archaeological site is an historical resource, it shall refer to the provisions of Section 21084.1 of the Public Resources Code, and this section, Section 15126.4 of the Guidelines, and the limits contained in Section 21083.2 of the Public Resources Code do not apply.

(3) If an archaeological site does not meet the criteria defined in subdivision (a), but does meet the definition of a unique archeological resource in Section 21083.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c-f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources.

(4) If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or EIR, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process."[19]

CEQA Guidelines: Human Remains

Public Resources Code Sections 5097.94 and 5097.98 provide guidance on the disposition of Native American burials (human remains), and fall within the jurisdiction of the Native American Heritage Commission:

[18] CEQA Guidelines. Section 15064.5(a).
[19] Ibid. Section 15064.5(c).

"(d) When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code Section 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission. Action implementing such an agreement is exempt from:

(1) The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5).

(2) The requirements of CEQA and the Coastal Act."[20]

"(e) In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:

(1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

(A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and

(B) If the coroner determines the remains to be Native American:

1. The coroner shall contact the Native American Heritage Commission within 24 hours.

2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.

3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or

(2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.

(A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.

[20] CEQA Guidelines. Section 15064.5(d).

(B) The descendant identified fails to make a recommendation; or

(C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner."[21]

"(f) As part of the objectives, criteria, and procedures required by Section 21082 of the Public Resources Code, a lead agency should make provisions for historical or unique archaeological resources accidentally discovered during construction. These provisions should include an immediate evaluation of the find by a qualified archaeologist. If the find is determined to be an historical or unique archaeological resource, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation should be available. Work could continue on other parts of the building site while historical or unique archaeological resource mitigation takes place."[22]

CEQA Guidelines: Paleontological Resources

Public Resources Code Section 5097.5 prohibits excavation or removal of any "vertebrate paleontological site…or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands."

Tribal Consultation Requirements: SB 18 (Burton, 2004)

On September 29, 2004, Governor Schwarzenegger signed Senate Bill 18, Tribal Consultation Guidelines, into law. SB 18, enacted March 1, 2005, creates a mechanism for California Native American Tribes to identify culturally significant sites that are located within public or private lands within the city or county's jurisdiction. SB 18 requires cities and counties to contact, and offer to consult with, California Native American Tribes before adopting or amending a General Plan, a Specific Plan, or when designating land as Open Space, for the purpose of protecting Native American Cultural Places (PRC 5097.9 and 5097.993). The Native American Heritage Commission (NAHC) provides local governments with a consultation list of tribal governments with traditional lands or cultural places located within the Project Area of Potential Effect. Tribes have 90 days from the date on which they receive notification to request consultation, unless a shorter timeframe has been agreed to by the tribe.[23]

Local Policy & Regulations

Tulare County General Plan Policies

[21] Ibid. Section 15064.5 (e).
[22] CEQA Guidelines. Section 15064.5(f).
[23] California Government Code §65352.3.

The Tulare County General Plan has a number of policies that apply to projects within County of Tulare. General Plan policies that relate to the proposed Project are listed below.

ERM-6.1 Evaluation of Cultural and Archaeological Resources - The County shall participate in and support efforts to identify its significant cultural and archaeological resources using appropriate State and Federal standards.

ERM-6.2 Protection of Resources with Potential State or Federal Designations - The County shall protect cultural and archaeological sites with demonstrated potential for placement on the National Register of Historic Places and/or inclusion in the California State Office of Historic Preservation's California Points of Interest and California Inventory of Historic Resources. Such sites may be of Statewide or local significance and have anthropological, cultural, military, political, architectural, economic, scientific, religious, or other values as determined by a qualified archaeological professional.

ERM-6.3 Alteration of Sites with Identified Cultural Resources - When planning any development or alteration of a site with identified cultural or archaeological resources, consideration should be given to ways of protecting the resources. Development can be permitted in these areas only after a site specific investigation has been conducted pursuant to CEQA to define the extent and value of resource, and mitigation measures proposed for any impacts the development may have on the resource.

ERM-6.4 Mitigation - If preservation of cultural resources is not feasible, every effort shall be made to mitigate impacts, including relocation of structures, adaptive reuse, preservation of facades, and thorough documentation and archival of records.

ERM-6.9 Confidentiality of Archaeological Sites - The County shall, within its power, maintain confidentiality regarding the locations of archaeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts.

ERM-6.10 Grading Cultural Resources Sites - The County shall ensure all grading activities conform to the County's Grading Ordinance and California Code of Regulations, Title 20, § 2501 et. seq.

IMPACT EVALUATION

Would the project:

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

Project Impact Analysis: ***Less Than Significant with Mitigation***

The Project area is currently in use for landfill operations. The proposed compost and biomass facility Project is a modification of an existing strategically integrated waste management facility and will remain within the existing footprint of the landfill in areas that were or continue to be actively disturbed by vehicle movements. A records search was performed through the California Historical Resources Information System (CHRIS), which is included in Appendix "C." The records search included recorded historical and archaeological sites and maps of the affected area by personnel at the Southern San Joaquin Information Center (SSJVIC), located at California State University, Bakersfield, California.

According to the CHRIS search, there have been no previous cultural resource studies conducted within the Project area; however, there have been three cultural resource studies conducted within a one-half mile radius. There are no recorded resources within the Project area and there are two recorded resources within the one-half mile radius; both unnamed ditches. There are no resources that are listed in the National Register of Historic Resources, the California Points of Historical Interest, California Inventory of Historic Resources, or the California State Historic Landmarks.

As noted earlier, the proposed Project site is already in landfill operation and the construction and operation of the composting and biomass facility would be a modification of an existing system. It is highly developed and the ground disturbance due to landfill operations continues to occur. There are no rock outcroppings, artifacts (including arrowheads, fire or grinding pits, drawings, or caves), buildings or other structures that could have any cultural values. Despite the absence of documented cultural resources within the project area, undiscovered potentially significant resources might still exist in the area. Based on this analysis, implementation of **Mitigation Measure 3.3-1** would reduce potential Project-specific impacts related to this Checklist Item to a level considered ***Less Than Significant***.

<u>Cumulative Impact Analysis</u>: ***Less Than Significant Impact With Mitigation***

The geographic area of this cumulative analysis is Tulare County.

The proposed Project would only contribute to cumulative impacts related to this Checklist Item if Project-specific impacts were to occur. As the proposed Project would be mitigated to a level considered less than significant, cumulative impacts would also be considered ***Less Than Significant With Mitigation***.

<u>Mitigation Measure(s)</u>: ***See Mitigation Measure 3.3-1.***

3.3-1. In the event that archaeological or paleontological resources are discovered during site excavation, the County shall require that grading and construction work on the project site be immediately suspended until the significance of the features can be determined by a qualified archaeologist or paleontologist. In this event, the property owner shall retain a qualified archaeologist/paleontologist to make recommendations for measures necessary to protect any site determined to contain or constitute an historical resource, a unique archaeological resource, or a unique paleontological resource or to undertake data recover, excavation analysis, and curation of archaeological or paleontological materials. County staff shall consider such recommendations and implement them where they are feasible in light of Project design as previously approved by the County.

Conclusion: ***Less Than Significant Impact With Mitigation***

With implementation of **Mitigation Measure 3.3-1**, potential Project-specific and cumulative impacts related to this Checklist Item will be reduced to a ***Less Than Significant*** level.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

Project Impact Analysis: ***Less Than Significant Impact With Mitigation***

The Project is an existing landfill operation that proposes development of a 36-acre compost and biomass facility (and will remain within the existing footprint of the landfill in areas) to comply with upcoming SB 1383 regulations. As noted earlier, a cultural resources record search was conducted as noted in a letter dated March 2, 2021 from the Southern San Joaquin Valley Historical Resources Information Center, Bakersfield. No archaeological deposits or isolated finds were identified during the cultural resources records search.

Although no archaeological deposits have been identified, there is the potential that archaeological resources may be discovered. With the implementation of **Mitigation Measure 3.3-1**, ***Less Than Significant Project-specific Impacts*** related to this Checklist Item will occur.

Cumulative Impact Analysis: ***Less Than Significant Impact With Mitigation***

The geographic area of this cumulative analysis is Tulare County.

The proposed Project would only contribute to cumulative impacts related to this Checklist Item if Project-specific impacts were to occur. As such, the proposed Project will result in ***Less Than Significant Project-Specific and Cumulative Impacts With Mitigation***.

Mitigation Measure: ***See Mitigation Measure 3.3-1.***

Conclusion: ***Less Than Significant Impact With Mitigation***

With implementation of **Mitigation Measure 3.3-1**, potential Project-specific and cumulative impacts related to this Checklist Item will be reduced to a ***Less Than Significant*** level.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Project Impact Analysis: ***Less Than Significant Impact With Mitigation***

The Project site is an existing landfill. The proposed Project is a modification of an existing strategically integrated waste management facility and would involve the development of a 36-acre compost and biomass facility. No paleontological resources or sites, or unique geologic features have previously been encountered on the proposed Project site. As noted earlier, a cultural resources records search was conducted of the site. No archaeological deposits or isolated finds were identified during that search. Also, see discussion 3.3 Item a), earlier.

Although it cannot conclusively be demonstrated that no subsurface paleontological resources are present, it is possible to mitigate potentially significant impacts with **Mitigation Measure 3.3-2**. With implementation the **Mitigation Measure 3.3-2**, Project-specific impacts related to this Checklist Item will be reduced to ***Less Than Significant*** levels.

Cumulative Impact Analysis: ***Less Than Significant Impact With Mitigation***

The geographic area of this cumulative analysis is Tulare County. The proposed Project would only contribute to cumulative impacts related to this Checklist Item if Project-specific impacts were to occur. As such, the proposed Project would result in ***Less Than Significant Project-Specific and Cumulative Impacts With Mitigation***.

Mitigation Measure: ***See Mitigation Measure 3.3-2.***

3.3-2. The property owner shall avoid and minimize impacts to paleontological resources. If a potentially significant paleontological resource is encountered during ground disturbing activities, all construction within a 100-foot radius of the find shall immediately cease until a qualified paleontologist determines whether the resources requires further study. The owner shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. The paleontologist shall notify the Tulare County Resource Management Agency and the project proponent of the procedures that must be followed before construction is allowed to resume at the location of the find. If the find is determined to be significant and the Tulare County Resource Management Agency determines avoidance is not feasible, the paleontologist shall design and implement a data recovery plan consistent with applicable standards. The plan shall be submitted to the Tulare County Resource Management Agency for review and approval. Upon approval, the plan shall be incorporated into the project.

Conclusion: ***Less Than Significant With Mitigation***

With implementation of **Mitigation Measure 3.3-1**, potential Project-specific and cumulative impacts related to this Checklist Item will be reduced to a ***Less Than Significant*** level.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Project Impact Analysis: ***Less Than Significant Impact with Mitigation***

As noted earlier, the Project site is an existing landfill operation that proposes development of a 36-acre compost and biomass facility to comply with upcoming SB 1383 regulations. No cultural resources have been encountered previously on the proposed Project site, as described in the CHRIS report and at Item 3.3 a), earlier. Although it cannot conclusively be demonstrated that no subsurface human remains are present, it is possible to mitigate potentially significant impacts with implementation of **Mitigation Measure 3.3-3**, this Checklist Item will be reduced to ***Less Than Significant Project-specific Impacts***.

Cumulative Impact Analysis: ***Less Than Significant Impact With Mitigation***

The geographic area of this cumulative analysis is Tulare County.

The proposed Project would only contribute to cumulative impacts related to this Checklist Item if Project-specific impacts were to occur. Potential impacts to this resource by the proposed Project would be reduced to ***Less Than Significant Project-specific and Cumulative Impacts with Mitigation***.

Mitigation Measures: ***See Mitigation Measure 3.3-3.***

3.3-3. Consistent with Section 7050.5 of the California Health and Safety Code and (CEQA Guidelines) Section 15064.5, if human remains of Native American origin are discovered during project construction, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Public Resources Code Sec. 5097). In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:

1. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
   a. The Tulare County Coroner/Sheriff must be contacted to determine that no investigation of the cause of death is required; and
   b. If the coroner determines the remains to be Native American:
      i. The coroner shall contact the Native American Heritage Commission within 24 hours.
      ii. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.
      iii. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code section 5097.98, or

2. Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.

    a. The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.

    b. The descendant fails to make a recommendation; or

    c. The landowner or his authorized representative rejects the recommendation of the descendent.

Conclusion: ***Less Than Significant Impact With Mitigation***

With implementation of **Mitigation Measures 3.3-1, 3.3-2,** and **3.3-3**, potential ***Project-specific and Cumulative Impacts*** related to this Checklist Item will be reduced to ***Less Than Significant.***

DEFINITIONS AND/OR ACRONYMS

Definitions

"**Aspect** – A cultural unit represented by stylistically distinctive artifact assemblages within a region. Aspects have been defined as geographical subdivisions of *patterns*, and have in turn been subdivided into chronologically sequential *phases*."[24]

"Pattern - A geographically and chronologically extended cultural unit within a region, characterized by similar technology, economy, and burial practices. A pattern has been defined as "a configuration of basic traits representing a cultural adaptation" (Bennyhoff and Fredrickson 1994:20). Geographical and chronological subdivisions of patterns have been termed *aspects* and *phases.*"[25]

"**Phase** – A highly localized and chronologically restricted cultural unit. Phases have been treated as chronological subdivisions of *aspects*. A phase has been defined as "an archaeological unit possessing traits sufficiently characteristic to distinguish it…spatially limited to the order of magnitude or a locality or region and chronologically limited to a relatively brief interval of time (Willey and Phillips 1958:22)."[26]

[24] Society for California Archaeology. Chronological and Cultural Units. A Glossary of Proper Names in California History. Accessed July 2021 at: https://scahome.org/about-ca-archaeology/glossary-of-terms/chronological-and-cultural-units/.
[25] Ibid.
[26] Op. Cit.

"**Windmiller** - A middle to late Holocene tradition, pattern, facies, or culture in central California, particularly in the Sacramento delta, dated between 5000-2500 and 2000-500 B.C. The Windmiller tradition has been identified with the Early horizon or period and classified within the late Archaic period. Locally the Windmiller facies was followed by the Morse, Deterding, Brazil, Need, or Orwood facies. The pattern has been identified with the Utian ethnolinguistic group. The type site is the Windmiller Mound Site (SAC-107). (Beardsley 1954; Bennyhoff and Fredrickson 1994; Chartkoff and Chartkoff 1984; Fredrickson 1994; Lillard et al. 1939; Ragir 1972)"[27] "*culture* - A unit that is distinctive in its material traces and bounded in its geographical and chronological ranges. Archaeological cultures are sometimes interpreted as corresponding to socially organized groups, ethnolinguistic groups, or groups sharing a common nonmaterial culture."[28]; "*facies* - A unit composed of closely related components from several sites, perhaps essentially equivalent to a phase or, in some usage, a complex."[29]; "*tradition* - An interpretive unit that links together culturally related, successive units into a chronologically more extended unit. A tradition has been defined as "a (primarily) temporal continuity represented by persistent configurations in single technologies or other systems of related forms" (Willey and Phillips 1958:37)"[30].

<u>Acronyms</u>

AB	Assembly Bill (in California)
CEQA	California Environmental Quality Act
CHRIS	California Historic Resources Information System
CRHR	California Register of Historical Resources
DEIR	Draft Environmental Impact Report
EIR	Environmental Impact Report
ERM	Environmental Resources Management
HABS/HAER	Historic American Building Survey/Historic American Engineering Record
ICs	Information Centers
MLD	Most Likely Descendant
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act of 1966
NWI	National Wetlands Inventory
OHP	California State Office of Historic Preservation
SB	Senate Bill (in California)
SHPO	State Historic Preservation Officers
SHRC	State Historical Resources Commission
SLF	Lands File Search
SR	State Route
SSJVIC	Southern San Joaquin Valley Information Center

[27] Op. Cit.
[28] Op. Cit.
[29] Op. Cit.
[30] Op. Cit.

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Chapter 3.4
Energy

SUMMARY OF FINDINGS

Based on the impact analysis below, potential impacts to Energy as a result of the proposed Project are determined to be ***Less Than Significant***. The impact determinations in this chapter are based upon information obtained from the Project Description, numerous State of California energy-related sources that are publically and readily available, references listed at the end of this chapter. A detailed review of potential impacts is provided in the analysis below.

INTRODUCTION

Energy consumption is analyzed in an EIR because of the environmental impacts associated with its production and usage. Such impacts include the depletion of nonrenewable resources (e.g., oil, natural gas, coal, etc.) and emission of pollutants during both the production and consumption phases. Energy usage is typically quantified using the British Thermal Unit (BTU). The BTU is the amount of energy that is required to raise the temperature of one pound of water by one degree Fahrenheit. As points of reference, the approximate amount of energy contained in a gallon of gasoline, a cubic foot of natural gas, and a kilowatt hour (kWhr) of electricity are 123,000 BTUs, 1,000 BTUs, and 3,400 BTUs, respectively. Natural gas usage is expressed in therms. A therm is equal to 100,000 BTU. Energy conservation is embodied in many federal, state and local statutes and policies. At the federal level, energy standards apply to numerous products (e.g., the EnergyStar™ program) and transportation (e.g., fuel efficiency standards). At the state level, Title 24 of the California Administrative Code sets energy standards for buildings, rebates/tax credits are provided for installation of renewable energy systems, and the Flex Your Power program promotes conservation in multiple areas. Also, as described further in this section, the Tulare County General Plan currently contains policies that promotes energy conservation and efficiency measures, energy conservation awareness, and renewable energy.

<u>California Environmental Quality Act (CEQA) Requirements</u>

"In 1974, the Legislature adopted the Warren-Alquist State Energy Resources Conservation and Development Act. (Pub. Resources Code, § 25000 et seq.) That act created what is now known as the California Energy Commission, and enabled it to adopt building energy standards. (See, e.g., id. at § 25402.) At that time, the Legislature found the "rapid rate of growth in demand for electric energy is in part due to wasteful, uneconomic, inefficient, and unnecessary uses of power and a continuation of this trend will result in serious depletion or irreversible commitment of energy, land and water resources, and potential threats to the state's environmental quality." (Id. at § 25002; see also § 25007 ("It is further the policy of the state and the intent of the Legislature to employ a range of measures to reduce wasteful, uneconomical, and unnecessary uses of energy, thereby reducing the rate of growth of energy consumption, prudently conserve energy resources, and assure statewide environmental, public safety, and land use goals"))

The same year that the Legislature adopted Warren-Alquist, it also added section 21100(b)(3) to CEQA, requiring environmental impact reports to include "measures to reduce the wasteful, inefficient, and unnecessary consumption of energy." As explained by a court shortly after it was enacted, the "energy mitigation amendment is substantive and not procedural in nature and was enacted for the purpose of requiring the lead agencies to focus upon the energy problem in the preparation of the final EIR." (People v. County of Kern (1976) 62 Cal.App.3d 761, 774 (emphasis added)). It compels an affirmative investigation of the project's potential energy use and feasible ways to reduce that use.

"Though Appendix F of the CEQA Guidelines has contained guidance on energy analysis for decades, implementation among lead agencies has not been consistent. (See, e.g., California Clean Energy Committee v. City of Woodland, supra, 225 Cal.App.4th 173, 209.) While California is a leader in energy conservation, the importance of addressing energy impacts has not diminished since 1974. On the contrary, given the need to avoid the effects of climate change, energy use is an issue that we cannot afford to ignore. As the California Energy Commission's Integrated Energy Policy Report (2016) explains:

> Energy fuels the economy, but it is also the biggest source of greenhouse gas emissions that lead to climate change. Despite California's leadership, Californians are experiencing the impacts of climate change including higher temperatures, prolonged drought, and more wildfires. There is an urgent need to reduce greenhouse gas emissions and increase the state's resiliency to climate change. With transportation accounting for about 37 percent of California's greenhouse gas emissions in 2014, transforming California's transportation system away from gasoline to zero emission and near-zero-emission vehicles is a fundamental part of the state's efforts to meet its climate goals. Energy efficiency and demand response are also key components of the state's strategy to reduce greenhouse gas emissions. (Id. at pp. 5, 8, 10.) Appendix F was revised in 2009 to clarify that analysis of energy impacts is mandatory. OPR today proposes to add a subdivision in section 15126.2 on energy impacts to further elevate the issue, and remove any question about whether such an analysis is required.

Further, an "Explanation of Proposed Amendments" contained in the Proposed Update (and now adopted amendments) to the CEQA Guidelines documents stated that OPR proposed to add a new subdivision (b) to section 15126.2 which discusses the required contents of an environmental impact report. The new subdivision would specifically address the analysis of a project's potential energy impacts. This addition is necessary for several reasons explained as follows." [1]

> "The first sentence clarifies that an EIR must analyze whether a project will result in significant environmental effects due to "wasteful, inefficient, or unnecessary consumption of energy." This clarification is necessary to implement Public Resources Code section 21100(b)(3). Since the duty to impose mitigation measures arises when a lead agency determines that the project

[1] State of California. Office of Planning and Research. Proposed Update to the CEQA Guidelines/ November 2017. Pages 65-66. Accessed September 2021 at: http://opr.ca.gov/docs/20171127_Comprehensive_CEQA_Guidelines_Package_Nov_2017.pdf

may have a significant effect, section 21100(b)(3) necessarily requires both analysis and a determination of significance in addition to energy efficiency measures. (Pub. Resources Code, § 21002.)

The second sentence further clarifies that all aspects of the project must be considered in the analysis. This clarification is consistent with the rule that lead agencies must consider the "whole of the project" in considering impacts. It is also necessary to ensure that lead agencies consider issues beyond just building design. (See, e.g., California Clean Energy Com. v. City of Woodland, supra, 225 Cal.App.4th at pp. 210-212.) The analysis of vehicle miles traveled provided in proposed section 15064.3 (implementing Public Resources Code section 21099 (SB 743)) on transportation impacts may be relevant to this analysis.

The third sentence signals that the analysis of energy impacts may need to extend beyond building code compliance. (Ibid.) The requirement to determine whether a project's use of energy is "wasteful, inefficient, and unnecessary" compels consideration of the project in its context. (Pub. Resources Code, § 21100(b)(3).) While building code compliance is a relevant factor, the generalized rules in the building code will not necessarily indicate whether a particular project's energy use could be improved. (Tracy First v. City of Tracy (2009) 177 Cal.App.4th 912, 933 (after analysis, lead agency concludes that project proposed to be at least 25% more energy efficient than the building code requires would have a less than significant impact); see also CEQA Guidelines, Appendix F, § II.C.4 (describing building code compliance as one of several different considerations in determining the significance of a project's energy impacts).) That the Legislature added the energy analysis requirement in CEQA at the same time that it created an Energy Commission authorized to impose building energy standards indicates that compliance with the building code is a necessary but not exclusive means of satisfying CEQA's independent requirement to analyze energy impacts broadly.

The new proposed [now adopted] subdivision (b) also provides a cross-reference to Appendix F. This cross-reference is necessary to direct lead agencies to the more detailed provisions contained in that appendix. Finally, new proposed subdivision (b) cautions that the analysis of energy impacts is subject to the rule of reason, and must focus on energy demand actually caused by the project. This sentence is necessary to place reasonable limits on the analysis. Specifically, it signals that a full "lifecycle" analysis that would account for energy used in building materials and consumer products will generally not be required. (See also Cal. Natural Resources Agency, Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97 (Dec. 2009) at pp. 71-72.)"[2]

Specifically, Section 15121.6 added new sub-section (b), to wit: "(b) Energy Impacts. If the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary consumption of energy, the EIR shall analyze and mitigate that energy use. This analysis should include the project's energy use for all project phases and components, including transportation-

[2] Ibid. 66-67.

related energy, during construction and operation. In addition to building code compliance, other relevant considerations may include, among others, the project's size, location, orientation, equipment use and any renewable energy features that could be incorporated into the project. (Guidance on information that may be included in such an analysis is presented in Appendix F.) This analysis is subject to the rule of reason and shall focus on energy demand that is caused by the project. This analysis may be included in related analyses of air quality, greenhouse gas emissions or utilities in the discretion of the lead agency."[3]

CEQA Thresholds of Significance

- Result in significant environmental effects due to wasteful, inefficient, or unnecessary consumption of energy.
- The project's energy use for all project phases and components, including transportation-related energy, during construction and operation.
- The project's size, location, orientation, equipment use and any renewable energy features that could be incorporated into the project.
- Analysis is subject to the rule of reason and shall focus on energy demand that is caused by the project.

Environmental Setting

Natural Gas and Electric Service

"Southern California Edison provides electric service to the majority of Tulare County, including the majority of the San Joaquin Valley and the foothills. Natural gas service is primarily provided by The Gas Company (formerly Southern California Gas Company). Pacific Gas & Electric also serves northern Tulare County's electric needs on limited basis. The electrical facilities network includes both overhead and underground lines, with new development required to install underground service lines. All utility providers indicate that additional service should be available to new development, depending on the necessary load of the services requested."[4]

Existing Energy Consumption

Electrical and natural gas services for the Project area are provided by Southern California Edison (SCE), and Southern California Gas Company (SoCal Gas), respectively. In 2018, SCE provided 4,422.976762 gigawatt-hours (GWh) of electricity to Tulare County customers.[5] Also in 2016, SoCal Gas provided a total of 157.285390 million therms in Tulare County[6] See **Table 3.4-1**.

[3] Op. Cit. 67-68.
[4] Tulare County General Plan 2030 Update Recirculated Draft EIR. 3.4 Energy and Global Climate Change. February 2010. Page 3.4-13 Accessed August 2021 at: http://generalplan.co.tulare.ca.us/documents/generalplan2010/RecirculatedDraftEIR.pdf
[5] California Energy Commission. California Energy Consumption Database. Electricity Consumption by County. Energy reports accessed August 2021 at: http://ecdms.energy.ca.gov/elecbycounty.aspx.
[6] Ibid. Gas Consumption by County. Accessed August 2021 at: http://ecdms.energy.ca.gov/gasbycounty.aspx.

Table 3.4-1
Energy Demands
2018 County and State Energy Demands on Energy Providers
Southern California Gas and Southern California Edison[7][8]

Demand by:	Electricity (in MWh)	Gas (in Therms)
Tulare County	[1]4,433,976.762	[2]157,285,390
SCE and SCG Service Areas	[1]83,399,988.199	[2]5,156,078,935

Notes: 1 Converted to MWh as CEC Energy Reports expresses in Millions of kWh (GWh).
2 Converted to MWh as CEC Energy Reports expresses in Millions of Therms.

The Project site anticipates continued service for electricity from PG&E or through an agreement with Tulare County to use electrical power generated on-site at the landfill gas energy facility.

Regulatory Setting

Federal Agencies & Regulations

Energy Policy Act of 2005

The Energy Policy Act of 2005 seeks to reduce reliance on non-renewable energy resources and provide incentives to reduce current demand on these resources. For example, under the Act, consumers and businesses can obtain federal tax credits for purchasing fuel efficient appliances and products, including buying hybrid vehicles, building energy-efficient buildings, and improving the energy efficiency of commercial buildings. Additionally, tax credits are available for the installation of qualified fuel cells, stationary microturbine power plants, and solar power equipment.

State Agencies & Regulations

California Energy Commission

The California Energy Commission (CEC) was created in 1974 to serve as the state's primary energy policy and planning agency. The CEC is tasked with reducing energy costs and environmental impacts of energy use - such as greenhouse gas emissions - while ensuring a safe, resilient, and reliable supply of energy.

California 2008 Energy Action Plan Update[9]

The 2008 update to the 2005 Energy Action Plan II is the State’s principal energy planning and policy document (State of California 2008). The updated document examines the state’s ongoing actions in the context of global climate change. The 2005 Energy Action Plan II continues the

[7] Op. Cit. Accessed August 2021 at: http://ecdms.energy.ca.gov/elecbycounty.aspx
[8] Op. Cit. Accessed August 2021 at: http://ecdms.energy.ca.gov/elecbyplan.aspx
[9] California Energy Commission. 2008 Energy Action Plan. February 2008. Accessed August 2021 at: https://www.cpuc.ca.gov/industries-and-topics/natural-gas/energy-action-plans.

goals of the original 2003 Energy Action Plan, describes a coordinated implementation plan for state energy policies, and identifies specific action areas to ensure that California's energy resources are adequate, affordable, technologically advanced, and environmentally sound. In accordance with this plan, the first-priority actions to address California's increasing energy demands are energy efficiency and demand response (i.e., reduction of customer energy usage during peak periods to address system reliability and support the best use of energy infrastructure). Additional priorities include the use of renewable sources of power and distributed generation (i.e., the use of relatively small power plants near or at centers of high demand). To the extent that these actions are unable to satisfy the increasing energy demand and transmission capacity needs, clean and efficient fossil-fired generation is supported. The California 2008 Energy Action Plan Update examines policy changes in the areas of energy efficiency, demand response, renewable energy, electricity reliability and infrastructure, electricity market structure, natural gas supply and infrastructure, research and development, and climate change.

<u>State of California Integrated Energy Policy (SB 1389)</u>

State of California Integrated Energy Policy (SB 1389) In 2002, the Legislature passed Senate Bill 1389, which required the California Energy Commission (CEC) to develop an integrated energy plan every two years for electricity, natural gas, and transportation fuels, for the California Energy Policy Report. The plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for Zero Emission Vehicles and their infrastructure needs, and encouragement of urban designs that reduce vehicles miles traveled and accommodate pedestrian and bicycle access.

The CEC adopted the 2013 Integrated Energy Policy Report on February 20, 2014. The 2013 Integrated Energy Policy Report provides the results of the CEC's assessment of a variety of issues, including:

- Ensuring that the state has sufficient, reliable, and sage energy infrastructure to meet current and future energy demands;
- Monitoring publicly-owned utilities' progress towards achieving 10-year energy efficiency targets; defining and including zero-net-energy goals in state building standards;
- Overcoming challenges to increased use of geothermal heat pump/ground loop technologies and procurement of biomethane;
- Using demand response to meet California's energy needs and integrate renewable
- technologies;
- Removing barriers to bioenergy development; planning for California's electricity infrastructure needs given potential retirement of power plants and the closure of the San Onofre Nuclear Generating Station;
- Estimating new generation costs for utility-scale renewable and fossil-fueled generation;
- Planning for new or upgraded transmission infrastructure;

- Monitoring utilities' progress in implementing past recommendations related to nuclear power plants;
- Tracking natural gas market trends;
- Implementing the Alternative and Renewable Fuel and Vehicle Technology Program; and,
- Addressing the vulnerability of California's energy supply and demand infrastructure to the effects of climate change; and planning for potential electricity system needs in 2030.

California Senate Bill 1037 and Assembly Bill 2021

In 2003, the CPUC and CEC adopted an Energy Action Plan that prioritized resources for meeting California's future energy needs, with energy efficiency identified as the highest priority. Since then, this policy goal has been codified as SB 1037 and AB 2021 into statute through legislation that requires electric utilities to meet their resource needs first with energy efficiency.[10] This policy also set new targets for statewide annual energy demand reductions of 32,000 GWh and 800 million therms from business-as-usual[11]—enough to power more than 5 million homes or replace the need to build about ten new large power plants (500 MW each). These targets represent a higher goal than existing efficiency targets established by CPUC for investor-owned utilities due to the inclusion of innovative strategies. Achieving the State's energy efficiency targets will require coordinated efforts from the State, the federal government, energy companies, and customers. The California Air Resources Board (ARB) will work with CEC and CPUC to facilitate these partnerships. California's energy efficiency programs for buildings and appliances have generated more than $50 billion in savings over the past three decades.

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

California Global Warming Solutions Act of 2006 (Assembly Bill 32) Assembly Bill 32 (Health and Safety Code Sections 38500–38599; AB 32), also known as the California Global Warming Solutions Act of 2006, commits the state to achieving year 2000 GHG emission levels by 2010 and year 1990 levels by 2020. To achieve these goals, AB 32 tasked the California Public Utilities Commission and CEC with providing information, analysis, and recommendations to the California Air Resources Board regarding ways to reduce GHG emissions in the electricity and natural gas utility sectors.

California Energy Code (Title 24, Part 6, Building Energy Efficiency Standards)

California Code of Regulations Title 24, Part 6 comprises the California Energy Code, which was adopted to ensure that building construction, system design and installation achieve energy efficiency. The California Energy Code was first established in 1978 by the CEC in response to a legislative mandate to reduce California's energy consumption, and apply to energy consumed for

[10] SB 1037 (Kehoe, Chapter 366, Statutes of 2005) and AB 2021 (Levine, Chapter 734, Statutes of 2006) directed electricity corporations subject to CPUC's authority and publicly-owned electricity utilities to first meet their unmet resource needs through all available energy efficiency and demand response resources that are cost-effective, reliable, and feasible.

[11] The savings targeted here are additional to savings currently assumed to be incorporated in CEC's 2007 demand forecasts. However, CEC has initiated a public process to better determine the quantity of energy savings from standards, utility programs, and market effects that are embedded in the baseline demand forecast.

heating, cooling, ventilation, water heating, and lighting in new residential and non-residential buildings. The standards are updated periodically to increase the baseline energy efficiency requirements. The 2013 Building Energy Efficiency Standards focus on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings and include requirements to enable both demand reductions during critical peak periods and future solar electric and thermal system installations. Although it was not originally intended to reduce greenhouse gas (GHG) emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

California Green Building Standards Code (Title 24, Part II, CALGreen)

The California Building Standards Commission adopted the California Green Buildings Standards Code (CALGreen in Part 11 of the Title 24 Building Standards Code) for all new construction statewide on July 17, 2008. Originally a volunteer measure, the code became mandatory in 2010 and the most recent update (2013) went into effect on January 1, 2014. CALGreen sets targets for energy efficiency, water consumption, dual plumbing systems for potable and recyclable water, diversion of construction waste from landfills, and use of environmentally sensitive materials in construction and design, including eco-friendly flooring, carpeting, paint, coatings, thermal insulation, and acoustical wall and ceiling panels. The 2013 CALGreen Code includes mandatory measures for non-residential development related to site development; water use; weather resistance and moisture management; construction waste reduction, disposal, and recycling; building maintenance and operation; pollutant control; indoor air quality; environmental comfort; and outdoor air quality. Mandatory measures for residential development pertain to green building; planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; environmental quality; and installer and special inspector qualifications.

Clean Energy and Pollution Reduction Act (SB 350)

The Clean Energy and Pollution Reduction Act (SB 350) was passed by California Governor Brown on October 7, 2015, and establishes new clean energy, clean air, and greenhouse gas reduction goals for the year 2030 and beyond. SB 350 establishes a greenhouse gas reduction target of 40 percent below 1990 levels for the State of California, further enhancing the ability for the state to meet the goal of reducing greenhouse gas emissions by 80 percent below 1990 levels by the year 2050.

Renewable Portfolio Standard (SB 1078 and SB 107)

Established in 2002 under SB 1078, the state's Renewables Portfolio Standard (RPS) was amended under SB 107 to require accelerated energy reduction goals by requiring that by the year 2010, 20 percent of electricity sales in the state be served by renewable energy resources. In years following its adoption, Executive Order S-14-08 was signed, requiring electricity retail sellers to provide 33 percent of their service loads with renewable energy by the year 2020. In 2011, SB X1-2 was signed, aligning the RPS target with the 33 percent requirement by the year 2020. This new RPS applied to all state electricity retailers, including publicly owned utilities, investor-owned utilities, electrical service providers, and community choice aggregators. All entities included under the RPS were required to adopted the RPS 20 percent by year 2020 reduction goal by the end of 2013, adopt a reduction goal of 25 percent by the end of 2016, and meet the 33 percent reduction goal by the end of 2020. In addition, the Air Resources Board, under Executive Order S-21-09, was required to adopt regulations consistent with these 33 percent renewable energy targets.

Local Policy & Regulations

Tulare County General Plan Policies

The Tulare County General Plan has a number of policies that apply to projects within County of Tulare. General Plan policies that relate to the proposed Project are listed below.

ERM-4.1 Energy Conservation and Efficiency Measures - The County shall encourage the use of solar energy, solar hot water panels, and other energy conservation and efficiency features in new construction and renovation of existing structures in accordance with State law.

ERM-4.3 Local and State Programs - The County shall participate, to the extent feasible, in local and State programs that strive to reduce the consumption of natural or man-made energy sources.

ERM-4.4 Promote Energy Conservation Awareness - The County should coordinate with local utility providers to provide public education on energy conservation programs

ERM-4.6 Renewable Energy - The County shall support efforts, when appropriately sited, for the development and use of alternative energy resources, including renewable energy such as wind, solar, bio-fuels and co-generation.

ERM-4.7 Reduce Energy Use in County Facilities - Continue to integrate energy efficiency and conservation into all County functions.

PROJECT SPECIFIC ENERGY USAGE

Energy consumption required during construction of the proposed Project would primarily be in the form of gasoline and diesel fuel to power off-road vehicles and equipment and on-road vehicles; however, electricity will be provided by either PG&E or through an agreement with the County to use electrical power generated on-site at the landfill gas energy facility. Service would be extended to the site and an electrical utility pole would be constructed on-site to provide power to run composting equipment, processing equipment, blowers, and an electric grinder. A list of operational composting equipment is provided in **Table 3.4-2**.

Table 3.4-2
Composting Facility Equipment List

Equipment	Process Used In	Power Source
Fuel Truck	Refueling Equipment (Off-road and On-Road Equipment)	Diesel
2 Tractors	Material Transfer (Off-road Equipment)	Diesel
Excavator	Material Transfer (Off-road Equipment)	Diesel
6 Loaders	Material Transfer (Off-road Equipment)	Diesel
Office Vehicle	Composting Process (Off-road Equipment)	Diesel
Sweeper Truck	Composting Process (Off-road Equipment)	Diesel
2 Water Trucks	Composting Process (Off-road Equipment)	Diesel
Shop Truck	Composting Process (Off-road Equipment)	Diesel
2 Grinders	Feedstock Products (Mulching)	Electric
2 Conveyors	Feedstock Products (Mulching)	Electric
Pre-Processing Line Shredders/Grinders	Compost Processing (Feedstock Pre-processing line)	Electric
Pre-Processing Line Conveyors	Compost Processing (Feedstock Pre-processing line)	Electric
Food Waste Processing Equipment	De-package and remove contaminates to produce slurry feedstock	Electric
2 Processing Trommel	Compost Processing (Finished Processing	Electric
1 Film Plastic Separator	Compost Processing (Finished Processing line)	Electric
Processing Line Sizing Screen	Compost Processing (Finished Processing line)	Electric
Processing Line Conveyors	Compost Processing (Finished Processing line)	Electric
Shop Truck	Composting Process (Off-road Equipment)	Diesel
2 Processing Trommel	Compost Processing (Finished Processing line)	Electric
1 Film Plastic Separator	Compost Processing (Finished Processing line)	Electric
Processing Line Sizing Screen	Compost Processing (Finished Processing	Electric
Processing Line Sizing Screen	Compost Processing (Finished Processing	Electric

Tulare County Public Works is proposing to add a 2.0 mega-watt (MW) biomass conversion facility at their landfill. The facility will produce electricity, heat and biochar using wood fuel that will be provided by local activities to reduce landfill disposal to meet the mandates of SB 1383 to reduce 75% of all organic, which includes wood waste, from landfill disposal by 2025.

The facility will utilize approximately 18,000 bone dry tons (BDT) of wood chips per year or 25,000 tons of per year of wet recovered wood waste and produce approximately a net amount (after parasitic load) 2.0 MW of electrical energy per hour. In addition to this the facility will also produce approximately 20-30 MM BTU of waste heat and approximately 300-600 pounds of biochar per hour.

The facility is planned to operate 24/7, however given there will be maintenance requirements for the equipment it is anticipated that the gas production equipment and the GE Jenbacher internal combustion engine generator sets ("gensets") will likely only operate between 7,000 and 8,000 hours per year, or approximately 80-90% capacity.

CEQA Requirements and Energy Conservation Standards

In addition to the recommended thresholds for environmental analysis provided in Appendix G of the CEQA Guidelines, Appendix F requires that an EIR disclose and discuss the potential impacts of a project on energy resources and conservation. An EIR's discussion of impacts on energy resources should provide analysis and discussion of the project's potential to result in the wasteful, inefficient, or irretrievable commitment of energy resources, with particular attention towards electrical, natural gas, and transportation fuel supplies. While no specific thresholds are provided by the CEQA Guidelines, Appendix F offers several recommendations for inclusion in an analysis of impacts on energy resources to determine whether a project would:

a. Use large amounts of fuel or energy in an unnecessary, wasteful, or inefficient manner;
b. Constrain local or regional energy supplies, affect peak and base periods of electrical or natural gas demand, require or result in the construction of new electrical generation and/or transmission facilities, or necessitate the expansion of existing facilities, the construction of which could cause significant environmental effects; or
c. Conflict with existing energy standards, including standards for energy conservation.

Impact Evaluation

Would the project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Project Impact Analysis: ***Less Than Significant Impact***

Transportation Fuels

As described in Chapter 2, Project Description, construction of the proposed composting facility would involve modifications to an existing landfill facility to allow for the expansion of waste streams to be accepted and disposed of at the landfill. Modifications made to the existing landfill would involve minor grading, excavation of retention ponds, and the installation of the CASP composting system. These activities would require minimal amounts of non-renewable resources in the form of gasoline and diesel to power off-road construction vehicles/equipment and on-road vehicles.

Construction would be performed in a manner to maximize efficiency with equipment, materials, and labor being sourced as close as possible to the project site. The equipment used to perform construction activities would be sourced from the existing landfill operations. This would minimize fuel consumption by avoiding the need to import additional equipment to perform construction tasks.

The County Public Works would comply with CARB regulations regarding heavy-duty truck idling limits and the use of on- and off-road equipment and all vehicles would meet Federal and State standards for efficiency and emissions. Compliance with Federal and State regulations and standards aimed at improving vehicle energy utilization efficiency would ensure operational activities would not result in the wasteful, inefficient, or unnecessary consumption of transportation fuels, and impacts would be reduced to less than significant.

Electricity and Natural Gas

Electricity will be provided by either Southern California Edison (SCE) or through an agreement with the County to use electrical power generated on-site at the landfill gas energy facility. Service would be extended to the site and an electrical utility pole would be constructed on-site to provide power to run composting equipment, processing equipment, blowers, and an electric grinder.

The bioenergy facility would use wood fuel that will be provided by local landfill activities to produce electricity, heat and biochar. Phoenix Energy system is the proposed vendor technology, or equivalent, which converts woody biomass into a synthesis gas ("syngas") through the process of thermo-chemical conversion. Essentially the process "bakes" the biomass in an oxygen-starved environment. By depriving the fuel of sufficient oxygen, the biomass does not convert to combustion products and pollutants, but rather gives off a hydrogen rich syngas. As the biomass gives off the syngas, it is transformed into biochar of approximately 6-9% of the weight of biomass fuel. The syngas is then captured, cleaned and conditioned before being sent as fuel to the genset to produce electricity.

This electricity generation would assist State investor-owned utilities in meeting their obligations under State RPS guidelines by providing a renewable energy alternative to the utilities' existing power mix. Given the bioenergy facility's relatively infrequent use of natural gas, its minimal natural gas consumption, and incorporation of best available control technologies, operation activities would not result in the wasteful, inefficient, or unnecessary consumption of natural gas and impacts would be less than significant.

Overall, the Project would generate a net positive energy supply, it would have a beneficial effect on the local or regional electricity supply. Operation of the proposed Project would result in the demand for approximately 7,000 MWh/yr. of electricity, therefore, based on existing energy demands and capacity of service providers, estimated operational demand for electricity and natural gas as part of the Project would represent 0.0015 percent of Tulare County's and 0.000083 percent of SCE's total 2018 electricity demands. As such, the Project would not result in wasteful, inefficient, or unnecessary consumption of electricity or natural gas. The Project would result in a ***Less Than Significant Impact*** to these resources.

<u>Cumulative Impact Analysis</u>: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is Tulare County, the 8-County area of the San Joaquin Valley, and the Southern California Edison and Southern California Gas companies service areas.

Construction and operation of the proposed project would result in the consumption of fuel and energy, but it would not do so in a wasteful manner, as discussed above. Further, operation of the biomass conversion facility would produce up to 2 MW of renewable power, which would help achieve State RPS and can reasonably be expected to displace region-wide and Statewide emissions of GHGs over the expected life of the project.

The anticipated Project impacts, in conjunction with the projects considered in the cumulative setting, would increase energy consumption primarily in the form of fuel consumption associated with vehicles and equipment involved in construction and operation activities. Each cumulative project would require separate discretionary approval and CEQA assessment, which would address potential energy consumption impacts and identify necessary mitigation measures, where appropriate. Construction vehicles and equipment would be required to adhere to CARB regulations regarding heavy-duty truck idling limits. As noted above, the proposed Project would not result in significant energy consumption impacts. The proposed Project would not be considered inefficient, wasteful, or unnecessary with regard to energy consumption. Thus, the proposed Project would not contribute considerably to cumulative energy consumption, and cumulative impacts would be ***Less Than Significant***.

<u>Mitigation Measure(s)</u>: ***None Required.***

<u>Conclusion</u>: ***Less Than Significant Impact***

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

<u>Project Impact Analysis</u>: ***Less Than Significant Impact***

See Item a), above.

<u>Cumulative Impact Analysis</u>: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is Tulare County, the 8-County area of the San Joaquin Valley, and the SCE and Southern California Gas companies service areas.

<u>Mitigation Measure(s)</u>: ***None Required***

See Item a), above.

<u>Conclusion</u>: ***Less Than Significant Impact***

See Item a), above.

DEFINITIONS AND/OR ACRONYMS

Definitions

British Thermal Unit	British Thermal Unit (BTU) is the amount of energy that is required to raise the temperature of one pound of water by one degree Fahrenheit. As points of reference, the approximate amount of energy contained in a gallon of gasoline, a cubic foot of natural gas, and a kilowatt hour (kWhr) of electricity are 123,000 BTUs, 1,000 BTUs, and 3,400 BTUs, respectively. Natural gas usage is expressed in therms. A therm is equal to 100,000 BTU.

Acronyms

AB	Assembly Bill (in California)
CARB or ARB	California Air Resources Board
BTU	British Thermal Unit
CALGreen	California Green Buildings Standards Code
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CPUC	California Public Utilities Commission
DEIR	Draft Environmental Impact Report
EIR	Environmental Impact Report
ERM	Environmental Resources Management
GHG	Greenhouse gas
GWh	Gigawatt hour
kWhr	Kilowatt hour
OPR	Office of Planning and Research
MWh	Megawatt hour
N/A	Not Applicable
SB	Senate Bill (State of California Senate)
SCE	Southern California Edison Company
SoCal Gas	Southern California Gas Company
U.S. DOT	United States Department of Transportation
VMT	Vehicle Miles Travelled
w/i	within

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http://opr.ca.gov/docs/20171127_Comprehensive_CEQA_Guidelines_Package_Nov_2017.pdf

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Geology and Soils
Chapter 3.5

SUMMARY OF FINDINGS

The proposed Project will result in ***Less Than Significant Impact With Mitigation*** related to Geology and Soils. A detailed review of potential impacts is provided in the following analysis. *"Custom Soil Resource Report for Tulare County, Western Part, California"* by the USDA NRCS (included in Appendix "D") were used as the basis for determining this Project will result in a less than significant impact.

INTRODUCTION

California Environmental Quality Act (CEQA) Requirements

This section of the draft Focused Environmental Impact Report (EIR or draft EIR) addresses potential impacts to Geology and Soils. As required in Section 15126, all phases of the proposed Project will be considered as part of the potential environmental impact.

As noted in Section 15126.2 (a), "[a]n EIR shall identify and focus on the significant effects of the proposed project on the environment. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected. For example, the EIR should evaluate any potentially significant direct, indirect, or cumulative environmental impacts of locating development in areas susceptible to hazardous conditions (e.g., floodplains, coastlines, wildfire risk areas), including both short-term and long-term conditions, as identified in authoritative hazard maps, risk assessments or in land use plans addressing such hazards areas."[1]

Paleontological resources are protected under the CEQA. Specifically, in Section V(c) of Appendix G of the CEQA Guidelines, the "Environmental Checklist Form," the question is posed:

[1] CEQA Guidelines. Section 15126.2 (a)

"Will the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" In order to determine the uniqueness of a given paleontological resource, it must first be identified or recovered (i.e., salvaged). Mitigation of this adverse impact to paleontological resources is mandated by CEQA.

The environmental setting provides a description of the Geology and Soils in the County. The regulatory setting provides a description of applicable Federal, State and Local regulatory policies that were developed in part from information contained in the Tulare County 2030 General Plan, Tulare County General Plan Background Report, and/or Tulare County 2030 General Plan EIR incorporated by reference and summarized below. Additional documents utilized are noted as appropriate. A description of the potential impacts of the proposed Project is provided and includes the identification of feasible mitigation measures (if necessary and feasible) to avoid or lessen the impacts.

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist item as follows:

- Directly or indirectly cause potential substantial adverse effects, including risk of loss, injury, or death involving rupture of known earthquake fault, strong seismic shaking, seismic related ground failure (including liquefaction) or landslides.
- Result in substantial soil erosion or loss of topsoil.
- Be located on a geologic unit or soil that is unstable or become unstable as a result of the and potential result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.
- 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.
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

ENVIRONMENTAL SETTING

"Tulare County is divided into two major physiographic and geologic provinces: the Sierra Nevada Mountains and the Central Valley. The Sierra Nevada Physiographic Province, in the eastern portion of the county, is underlain by metamorphic and igneous rock. It consists mainly of homogeneous granitic rocks, with several islands of older metamorphic rock. The central and western parts of the county are part of the Central Valley Province, underlain by marine and non-marine sedimentary rocks. It is basically a flat, alluvial plain, with soil consisting of material deposited by the uplifting of the mountains." [2]

[2] Tulare County General Plan 2030 Update. Background Report. Page 8-4. Accessed August 2021 at: http://generalplan.co.tulare.ca.us/documents/GeneralPlan2010/Appendix%20B%20-%20Background%20Report.pdf.

"Seismicity varies greatly between the two major geologic provinces represented in Tulare County. The Central Valley is an area of relatively low tectonic activity bordered by mountain ranges on either side. The Sierra Nevada Mountains, partially located within Tulare County, are the result of movement of tectonic plates which resulted in the creation of the mountain range. The Coast Range on the west side of the Central Valley is also a result of these forces, and the continued uplifting of Pacific and North American tectonic plates continues to elevate these ranges. The remaining seismic hazards in Tulare County generally result from movement along faults associated with the creation of these ranges."[3]

"Earthquakes are typically measured in terms of magnitude and intensity. The most commonly known measurement is the Richter Scale, a logarithmic scale which measures the strength of a quake. The Modified Mercalli Intensity Scale measures the intensity of an earthquake as a function of the following factors:

- Magnitude and location of the epicenter;
- Geologic characteristics;
- Groundwater characteristics;
- Duration and characteristic of the ground motion;
- Structural characteristics of a building."[4]

"Faults are the indications of past seismic activity. It is assumed that those that have been active most recently are the most likely to be active in the future. Recent seismic activity is measured in geologic terms. Geologically recent is defined as having occurred within the last two million years (the Quaternary Period). All faults believed to have been active during Quaternary time are considered "potentially active."[5]

"Settlement can occur in poorly consolidated soils during ground-shaking. During settlement, the soil materials are physically rearranged by the shaking and result in reduced stabling alignment of the individual minerals. Settlement of sufficient magnitude to cause significant structural damage is normally associated with rapidly deposited alluvial soils, or improperly founded or poorly compacted fill. These areas are known to undergo extensive settling with the addition of irrigation water, but evidence due to ground-shaking is not available. Fluctuating groundwater levels also may have changed the local soil characteristics. Sufficient subsurface data is lacking to conclude that settlement would occur during a large earthquake; however, the data is sufficient to indicate that the potential exists in Tulare County."[6]

"Liquefaction is a process whereby soil is temporarily transformed to a fluid form during intense and prolonged ground-shaking. Areas most prone to liquefaction are those that are water saturated (e.g., where the water table is less than 30 feet below the surface) and consist of relatively uniform sands that are low to medium density. In addition to necessary soil conditions, the ground

[3] Op. Cit. 8-5.
[4] Op. Cit.
[5] Op. Cit.
[6] Op. Cit. 8-9.

acceleration and duration of the earthquake must be of sufficient energy to induce liquefaction. Scientific studies have shown that the ground acceleration must approach 0.3g before liquefaction occurs in a sandy soil with relative densities typical of the San Joaquin alluvial deposits. Liquefaction during major earthquakes has caused severe damage to structures on level ground as a result of settling, tilting, or floating. Such damage occurred in San Francisco on bay-filled areas during the 1989 Loma Prieta earthquake, even though the epicenter was several miles away. If liquefaction occurs in or under a sloping soil mass, the entire mass may flow toward a lower elevation, such as that which occurred along the coastline near Seward, Alaska during the 1964 earthquake. Also of particular concern in terms of developed and newly developing areas are fill areas that have been poorly compacted."[7]

Earthquake Hazards

"Ground-shaking is the primary seismic hazard in Tulare County because of the county's seismic setting and its record of historical activity. Thus, emphasis focuses on the analysis of expected levels of ground-shaking, which is directly related to the magnitude of a quake and the distance from a quake's epicenter. Magnitude is a measure of the amount of energy released in an earthquake, with higher magnitudes causing increased ground-shaking over longer periods of time, thereby affecting a larger area. Ground-shaking intensity, which is often a more useful measure of earthquake effects than magnitude, is a qualitative measure of the effects felt by population. The valley portion of Tulare County is located on alluvial deposits, which tend to experience greater ground-shaking intensities than areas located on hard rock. Therefore, structures located in the valley will tend to suffer greater damage from ground-shaking than those located in the foothill and mountain areas. However, existing alluvium valleys and weathered or decomposed zones are scattered throughout the mountainous portions of the county which could also experience stronger intensities than the surrounding solid rock areas. The geologic characteristics of an area can therefore be a greater hazard than its distance to the epicenter of the quake."[8]

"There are three faults within the region that have been, and will be, principal sources of potential seismic activity within Tulare County. These faults are described below:

- **San Andreas Fault.** The San Andreas Fault is located approximately 40 miles west of the Tulare County boundary. This fault has a long history of activity, and is thus the primary focus in determining seismic activity within the county. Seismic activity along the fault varies along its span from the Gulf of California to Cape Mendocino. Just west to Tulare County lies the "Central California Active Area," where many earthquakes have originated.
- **Owens Valley Fault Group.** The Owens Valley Fault Group is a complex system containing both active and potentially active faults, located on the eastern base of the Sierra Nevada Mountains. The Group is located within Tulare and Inyo Counties and has historically been the source of seismic activity within Tulare County.
- **Clovis Fault.** The Clovis Fault is considered to be active within the Quaternary Period (within the past two million years), although there is no historic evidence of its activity,

[7] Op. Cit. 8-8 and 8-9.
[8] Op. Cit. Page 8-7.

> and is therefore classified as "potentially active." This fault lies approximately six miles south of the Madera County boundary in Fresno County. Activity along this fault could potentially generate more seismic activity in Tulare County than the San Andreas or Owens Valley fault systems. In particular, a strong earthquake on the Fault could affect northern Tulare County. However, because of the lack of historic activity along the Clovis Fault, inadequate evidence exists for assessing maximum earthquake impacts."[9]

"Older buildings constructed before current building codes were in effect, and even newer buildings constructed before earthquake resistance provisions were included in the current building codes, are most likely to suffer damage in an earthquake. Most of Tulare County's buildings are no more than one or two stories in height and are of wood frame construction, which is considered the most structurally resistant to earthquake damage. Older masonry buildings (without earthquake-resistance reinforcement) are the most susceptible to structural failure, which causes the greatest loss of life. The State of California has identified unreinforced masonry buildings as a safety issue during earthquakes. In high risk areas (Bay Area) inventories and programs to mitigate this issue are required. Because Tulare County is not a high risk area, state law only recommends that programs to retrofit URMs are adopted by jurisdictions."[10]

Soils and Liquefaction

"The San Joaquin Valley portion of Tulare County is located on alluvial deposits, which tend to experience greater ground-shaking intensities than areas located on hard rock. Therefore, structures located in the valley will tend to suffer greater damage from ground-shaking than those located in the foothill and mountain areas. However, existing alluvium valleys and weathered or decomposed zones are scattered throughout the mountainous portions of the county which could also experience stronger intensities than the surrounding solid rock areas. The geologic characteristics of an area can therefore be a greater hazard than its distance to the epicenter of the quake."[11]

"No specific countywide assessments to identify liquefaction hazards have been performed in Tulare County. Areas where groundwater is less than 30 feet below the surface occur primarily in the valley. However, soil types in the area are not conducive to liquefaction because they are either too coarse or too high in clay content. Areas subject to 0.3g acceleration or greater are located in a small section of the Sierra Nevada Mountains along the Tulare-Inyo County boundary. However, the depth to groundwater in such areas is greater than in the valley, which would minimize liquefaction potential as well. Detailed geotechnical engineering investigations would be necessary to more accurately evaluate liquefaction potential in specific areas and to identify and map the areal extent of locations subject to liquefaction."[12]

Landslides

[9] Op. Cit. Pages 8-6 and 8-7.
[10] Op. Cit. Page 8-8.
[11] Op. Cit. Page 8-7.
[12] Op. Cit. Page 8-9.

"Landslides are a primary geologic hazard and are influenced by four factors:

- Strength of rock and resistance to failure, which is a function of rock type (or geologic formation);
- Geologic structure or orientation of a surface along which slippage could occur;
- Water (can add weight to a potentially unstable mass or influence strength of a potential failure surface); and,
- Topography (amount of slope in combination with gravitation forces)."[13]

Soils in proposed Project area

The proposed Project area is composed primarily of Calgro-Calgro, saline-Sodic, complex which experiences very rare frequency of flooding, no frequency of ponding and has moderate water storage ability.[14] The Calgro series are typically found on terraces and consist of moderately deep duripan. The series is composed of moderately well drained soils formed in alluvium, which has been derived from granitic rock sources. Slopes are observed at 0 to 2 percent at 250-480 feet in elevation. [15] A very small portion of the Area of Influence (approximately 0.4%) is thought to be composed of Crosscreek-Kai association with 0 to 2 percent slopes.[16] The characteristics of this soil type are nearly identical to the Calgro series.

Paleontological Resources

Paleontological resources (i.e., fossils) are defined by the Paleontological Resource Preservation Act (PRPA), Section 6301(4) as "…any fossilized remains, traces, or imprints or organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth…"[17]

"Fossils are most commonly found in sedimentary rocks such as sandstones, shales, and limestones. Fossils, with few exceptions, are not found within igneous rocks (volcanic, or of molten origin) or metamorphic rocks (mechanically and chemically altered) due to the extreme heat and/or pressure associated with the origin and history of these rock types."[18]

"Stratigraphically, fossils typically have a finite range and occurrence in geologic time…The period between the first occurrence and final occurrence of a fossil species is referred to as the

[13] Op. Cit. Page 8-10.

[14] USDA NRCS Web Soils Report, "*Custom Soil Resource Report for Tulare County, Western Part, California: Visalia Landfill-Proposed Compost Area.*" 2021. Pages 9 (map) and 13.

[15] USDA NRCS, Official Series Descriptions. Calgro Series, January 2000. Accessed January 2021 at: https://soilseries.sc.egov.usda.gov/OSD_Docs/C/CALGRO.html#:~:text=The%20Calgro%20series%20consists%20of%20moderately%20deep%20to,granitic%20rock%20sources.%20Calgro%20soils%20are%20on%20terraces.

[16] USDA NRCS Web Soils Report, "*Custom Soil Resource Report for Tulare County, Western Part, California: Visalia Landfill-Proposed Compost Area.*" 2021. Pages 9 (map) and 15.

[17] Congress.Gov Congressional Report. Paleontological Resource Preservation Act. Accessed January 2021 at: https://www.congress.gov/congressional-report/110th-congress/house-report/670.

[18] National Park Service, Paleontological Resource Inventory Strategies and Methods. Accessed January 2021 at: https://www.nps.gov/subjects/fossils/inventory-strategies-and-methodology.htm#:~:text=Taxonomically%2C%20paleontological%20resources%20can%20be%20divided%20into%20four,biological%20activity%20such%20as%20track%2C%20trace%2C%20burrow%2C%20etc.%29.

stratigraphic range zone. Thus, specific groups of fossils may be identified directly with a particular stratigraphic unit or stratigraphic range. Likewise, rock units often represent specific ancient sedimentary depositional environments. Paleoecologically, fossil groups may occur primarily, or in some instances only, in specific environmental conditions (temperature, aquatic, terrestrial, etc.). Thus, many fossils may be useful as indicators of past environmental conditions."[19]

According to the National Geologic Map Database, the California Division of Mines and Geology specifies that the Project area is composed of fan deposits from the recent Quaternary Period.[20] This is considered the youngest portion of the Cenozoic Era on the Geologic Time Scale and spans from 2.58 million years ago to today[21]. The Cenozoic Era is known as the "Age of Mammals" and common fossils dated to this time period include cat-like carnivores, early horses and woolly mammoths.[22]

Although there are no known paleontological resources located in the Project area, site development for the compost facility does have potential to directly or indirectly destroy an unknown paleontological resource.

Regulatory Setting

Federal Agencies & Regulations

None that apply to the proposed Project.

State Agencies & Regulations

California Building Code

"The California Building Code is another name for the body of regulations known as the California Code of Regulations (C.C.R.), Title 24, Part 2, which is a portion of the California Building Standards Code. Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards."[23]

California Public Resources Code (PRC) 5097.5

PRC Section 5097.5 affirms that no person shall willingly or knowingly excavate, remove, or otherwise destroy a vertebrate paleontological site or paleontological feature without the express permission of the overseeing public land agency. It further states under Code 30244 that any development that would adversely impact paleontological resources shall require reasonable

[19] Ibid.

[20] USGS. National Geologic Map Database. Geologic Map of California: Fresno Sheet. Accessed January 2021 at: https://ngmdb.usgs.gov/ngm-bin/pdp/zui_viewer.pl?id=7654.

[21] National Parks Service. Cenozoic Era. Accessed January 2021 at: https://www.nps.gov/articles/000/cenozoic-era.htm.

[22] Ibid.

[23] Tulare County General Plan 2030 Update Background Report. Page 8-3.

mitigation. These regulations apply to projects located on land owned by or under the jurisdiction of the state or any city, county, district, or other public agency.[24]

Alquist-Priolo Earthquake Fault Zoning Act

"The Alquist- Priolo Earthquake Fault Zoning Act (formerly the Alquist- Priolo Special Studies Zone Act), signed into law December 1972, requires the delineation of zones along active faults in California. The purpose of the Alquist-Priolo Act is to regulate development on or near active fault traces to reduce the hazards associated with fault rupture and to prohibit the location of most structures for human occupancy across these traces."[25]

Local Policy & Regulations

Tulare County General Plan Policies

The Tulare County General Plan has a number of policies that apply to projects within County of Tulare. General Plan policies that relate to the proposed Project are listed below.

ERM-7.2 Soil Productivity - The County shall encourage landowners to participate in programs that reduce soil erosion and increase soil productivity. To this end, the County shall promote coordination between the Natural Resources Conservation Service, Resource Conservation Districts, UC Cooperative Extension, and other similar agencies and organizations.

ERM-7.3 Protection of Soils on Slopes - Unless otherwise provided for in this General Plan, building and road construction on slopes of more than 30 percent shall be prohibited, and development proposals on slopes of 15 percent or more shall be accompanied by plans for control or prevention of erosion, alteration of surface water runoff, soil slippage, and wildfire occurrence.

HS-2.1 Continued Evaluation of Earthquake Risks - The County shall continue to evaluate areas to determine levels of earthquake risk.

HS-2.4 Structure Siting - The County shall permit development on soils sensitive to seismic activity permitted only after adequate site analysis, including appropriate siting, design of structure, and foundation integrity.

HS-2.7 Subsidence - The County shall confirm that development is not located in any known areas of active subsidence. If urban development may be located in such an area, a special safety study will be prepared and needed safety measures implemented. The County shall also request that developments provide evidence that its long-term use of ground water resources, where applicable, will not result in notable subsidence attributed to the new extraction of groundwater resources for use by the development.

[24] California Legislative Information. Public Resources Code, Division 5. Parks and Monuments [5001-5873]: Chapter 1.7 Archaeological, Paleontological, and Historical Sites [5097-5097.7]. Accessed January 2021 at: http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum=5097.5.

[25] California State Mining and Geology Board. Alquist-Priolo Earthquake Fault Zoning Act statutes. Accessed January 2021 at: https://www.conservation.ca.gov/smgb/Documents/Misc/Regulations%20and%20Statutes/AP%20statutes.pdf.

HS-2.8 Alquist-Priolo Act Compliance - The County shall not permit any structure for human occupancy to be placed within designated Earthquake Fault Zones (pursuant to and as determined by the Alquist-Priolo Earthquake Fault Zoning Act; Public Resource code, Chapter 7.5) unless the specific provision of the Act and Title 14 of the California Code of Regulations have been satisfied.

IMPACT EVALUATION

Would the project:

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? Refer to Division of Mines and Geology Special Publication 42.

ii) Strong seismic ground shaking?

iii) Seismic-related ground failure, including liquefaction?

iv) Landslides?

Project Impact Analysis: ***Less Than Significant Impact***

The proposed Project includes installation of processing and composting equipment, a 50,000 square-foot building, compacted compost pads, a lined pond, and a biomass conversion facility. No substantial faults are known to traverse Tulare County according to the California Department of Conservation.[26] The proposed Project site is located on alluvial fan remnants and is not at risk from subsidence, liquefaction, or sliding. Liquefaction typically occurs when there is shallow groundwater, low-density non-plastic soils, and high-intensity ground motion. The main soil series found at the site is the Calgro series and is described as mostly sandy loam with a component of gravelly loamy sand.[27] This soil type is not conducive to liquification. The site is relatively flat (0-2% slopes)[28], which precludes the occurrence of landslides. Subsidence is typically related to over-extraction of groundwater from certain types of geologic formations where the water is partly responsible for supporting the ground surface. The Project site is recognized as being in an area of known subsidence,[29] however, the Project area will not contribute to significant groundwater pumping and has been previously approved

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[26] California Department of Conservation, Fault Activity Map of California. Accessed January 2021 at: https://maps.conservation.ca.gov/cgs/fam/app/.

[27] USDA NRCS Web Soils Report. "*Custom Soil Resource Report for Tulare County, Western Part, California: Visalia Landfill-Proposed Compost Area.*" 2021. Pages 9 (map) and 13.

[28] Ibid.

[29] USGS. Areas of Land Subsidence in California. Accessed January 2021 at: https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html.

for development and use by Tulare County (See Section 4.7 – Hydrology and Water Quality for more information pertaining to Project water use). ***Less Than Significant Project-specific Impacts*** related to the Checklist item will occur.

Cumulative Impact Analysis: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

The Project site is appropriate for a composting facility and is consistent with existing landfill operations. The proposed Project will not impact other neighboring properties. Compost processing operations will not occur outside of the proposed Project area. ***Less Than Significant Cumulative Impacts*** related to this Checklist item will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***Less Than Significant Impact***

As noted earlier, ***Less Than Significant Project-specific and Cumulative Impacts*** to this Checklist item will occur.

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

Project Impact Analysis: ***Less Than Significant Impact***

The proposed Project is a modification of an existing strategically integrated waste management facility and is specifically located in a soil borrow pit. Thus, topsoil has previously been disrupted, and the entire site is an established and developed area. Additionally, a water storage pond will be constructed adjacent to the composting facility. The pond will ensure that water involved in the composting process will not contribute to soil erosion or loss of topsoil, and is collected and managed properly. The Project will be in compliance with state regulations. ***Less Than Significant Project-specific Impacts*** related to this Checklist item will occur.

Cumulative Impact Analysis: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

The proposed Project will not result in soil erosion. ***Less Than Significant Cumulative Impacts*** related to this Checklist item will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***Less Than Significant Impact***

As noted earlier, ***Less Than Significant Project-specific and Cumulative Impacts*** to this Checklist item will occur.

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

Project Impact Analysis: ***Less Than Significant Impact***

As noted in the Response to Item 3.5 a), the Project site is located on a granitic alluvium soil type (mainly the Calgro series) and is not at risk from subsidence, liquefaction, or sliding. Therefore, Project-specific impacts will be ***Less Than Significant***.

Cumulative Impact Analysis: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

The Project site is appropriate for composting operations, as a modification of an existing strategically integrated waste management facility. The proposed Project will not impact other neighboring properties, as the composting operations will be contained in the proposed Project area. ***Less Than Significant Cumulative Impacts*** related to this Checklist item will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***Less Than Significant Impact***

As noted earlier, ***Less Than Significant Project-specific and Cumulative Impacts*** to this Checklist item will occur.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating direct or indirect substantial risks to life or property?

Project Impact Analysis: ***Less Than Significant Impact***

The Project site is granitic alluvium and is not considered expansive soil. ***Less Than Significant Project-specific Impacts*** related to this Checklist item will occur.

Cumulative Impact Analysis: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

The Project site is appropriate for a composting facility and biomass conversion facility. The proposed Project will not cause soil to become expansive. ***Less Than Significant Cumulative Impacts*** related to this Checklist item will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***Less Than Significant Impact***

As noted earlier, ***Less Than Significant Project-specific and Cumulative Impacts*** to this Checklist item will occur.

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?

Project Impact Analysis: ***Less Than Significant Impact***

There are no public wastewater services or septic systems currently on the Proposed compost facility site, or planned for development. Portable toilets will be provided for on-site employee use. ***Less Than Significant Project-specific Impacts*** related to this Checklist item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

The proposed Project will not affect the soil capabilities of other sites. ***No Cumulative Impacts*** will occur related to this Checklist item.

Mitigation Measure(s): ***None Required.***

Conclusion: ***Less than Significant Impact***

As noted earlier, ***Less Than Significant Project-specific and Cumulative Impacts*** to this Checklist item will occur.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Project Impact Analysis: ***Less Than Significant Impact With Mitigation***

The Project site is fully disturbed (graded or otherwise occupied by existing operations). No paleontological resources or sites, or unique geologic features have previously been encountered on the proposed Project site. As noted earlier, a cultural resources records search was conducted for the site. No archaeological deposits or isolated finds were identified during that search.

Although it cannot conclusively be demonstrated that no subsurface paleontological resources are present, it is possible to mitigate potentially significant impacts with ***Mitigation Measure 4.5-1***. With the implementation the ***Mitigation Measure 3.5-1*** Project-specific impacts related to this Checklist Item will be reduced to a ***Less Than Significant Impact With Mitigation***.

Cumulative Impact Analysis: ***Less Than Significant Impact With Mitigation***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

Although it cannot conclusively be demonstrated that no subsurface paleontological resources are present, it is possible to mitigate potentially significant impacts with ***Mitigation Measure 3.5-1***. With implementation the ***Mitigation Measure 3.5-1***, Project-specific impacts related to this Checklist Item will be reduced to ***Less Than Significant*** levels.

Mitigation Measure(s): ***See Mitigation Measure 3.5-1***

3.5-1 The property owner shall avoid and minimize impacts to paleontological resources. If a potentially significant paleontological resource is encountered during ground disturbing activities, all construction within a 100-foot radius of the find shall immediately cease until a qualified paleontologist determines whether the resources requires further study. The owner shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. The paleontologist shall notify the Tulare County Resource Management Agency and the project proponent of the procedures that must be followed before construction is allowed to resume at the location of the find. If the find is determined to be significant and the Tulare County Resource Management Agency determines avoidance is not feasible, the paleontologist shall design and implement a data recovery plan consistent with applicable standards. The plan shall be submitted to the Tulare County Resource Management Agency for review and approval. Upon approval, the plan shall be incorporated into the project.

Conclusion: ***Less Than Significant Impact With Mitigation***

As noted earlier, ***Less Than Significant Project-specific and Cumulative Impacts With Mitigation*** to this Checklist item will occur.

DEFINITIONS AND/OR ACRONYMS

Definitions

Fault - A fault is a fracture in the Earth's crust that is accompanied by displacement between the two sides of the fault. An active fault is defined as a fracture that has shifted in the last 10,000 to 12,000 years (Holocene Period). A potentially active fault is one that has been active in the past 1.6 million years (Quaternary Period). A sufficiently active fault is one that shows evidence of Holocene displacement on one or more of its segments or branches (Hart, 1997).

Liquefaction - Liquefaction in soils and sediments occurs during earthquake events, when soil material is transformed from a solid state to a liquid state, generated by an increase in pressure between pore space and soil particles. Earthquake-induced liquefaction typically occurs in low-lying areas with soils or sediments composed of unconsolidated, saturated, clay-free sands and silts, but it can also occur in dry, granular soils or saturated soils with partial clay content.

Magnitude - Earthquake magnitude is measured by the Richter scale, indicated as a series of Arabic numbers with no theoretical maximum magnitude. The greater the energy released from the fault rupture, the higher the magnitude of the earthquake. Magnitude increases logarithmically in the Richter scale; thus, an earthquake of magnitude 7.0 is thirty times stronger than one of magnitude 6.0. Earthquake energy is most intense at the point of fault slippage, the epicenter, which occurs because the energy radiates from that point in a circular wave pattern. Like a pebble thrown in a pond, the increasing distance from an earthquake's epicenter translates to reduced groundshaking.

Acronyms

AB	Assembly Bill (in California)
CEQA	California Environmental Quality Act
CCR	California Code of Regulations
EIR	Environmental Impact Report
ERM	Environmental Resources Management
DEIR	Draft Environmental Impact Report
HS	Health and Safety
NRCS	Natural Resources Conservation Service
SB	Senate Bill (in California)
USDA	United States Department of Agriculture
USGS	United States Geologic Service

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Chapter 3.6
Greenhouse Gas Emissions

SUMMARY OF FINDINGS

The proposed Project will result in ***Less Than Significant Impacts*** related to Greenhouse Gas (GHG) Emissions. The impact determinations in this chapter are based upon the Air Quality and GHG Technical Report prepared by Yorke Engineering, LLC for this project. The report in its entirety is provided in Appendix "A". A detailed review of potential impacts is provided in the analysis below.

INTRODUCTION

California Environmental Quality Act (CEQA) Requirements

This section of the Draft Focused Environmental Impact Report (Draft EIR) addresses potential environmental impacts related to GHG emissions. As required in CEQA Guidelines Section 15126, all phases of the proposed Project would be considered as part of the potential environmental impact.[1] As required in CEQA Guidelines Section 15064, the evaluation of the Project's impact on global climate change "shall consider direct physical changes in the environment which may be caused by the project and reasonably foreseeable indirect physical changes in the environment which may be caused by the project."[2] CEQA Guidelines Section 15064.4 provides guidance to lead agencies on determining the significance of GHG emission on global climate change as follows.

"15064.4. Determining the Significance of Impacts from Greenhouse Gas Emissions

(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

    (1) Quantify greenhouse gas emissions resulting from a project; and/or

    (2) Rely on a qualitative analysis or performance based standards.

(b) In determining the significance of a project's greenhouse gas emissions, the lead agency should focus its analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change. A project's incremental contribution

[1] CEQA Guidelines Section 15126. Consideration and Discussion of Environmental Impacts.
[2] CEQA Guidelines Section 15064. Determining the Significance of the Environmental Effects Caused by a Project.

may be cumulatively considerable even if it appears relatively small compared to statewide, national or global emissions. The agency's analysis should consider a timeframe that is appropriate for the project. The agency's analysis also must reasonably reflect evolving scientific knowledge and state regulatory schemes. A lead agency should consider the following factors, among others, when determining the significance of impacts from greenhouse gas emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions (see, e.g., section 15183.5(b)). Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the projects incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

(c) A lead agency may use a model or methodology to estimate greenhouse gas emissions resulting from a project. The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change. The lead agency must support its selection of a model or methodology with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use."[3]

The "Environmental Setting" provides a description of greenhouse gases and the County's existing (2007) and projected (2030) greenhouse gas emissions inventory. The "Regulatory Setting" provides a description of applicable Federal, State and Local regulatory policies that were developed in part from information contained in the Tulare County General Plan 2030 Update (General Plan), Tulare County General Plan 2030 Update Background Report (Background Report), and the Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (RDEIR). Additional documents utilized are noted as appropriate. A description of the potential impacts of the Project is provided and includes the identification of feasible mitigation measures (if necessary and feasible) to avoid or lessen the impacts.

[3] California Environmental Quality Act (CEQA) Guidelines, Section 15064.4. Determining the Significance of Impacts from Greenhouse Gas Emissions

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item questions. A significant impact would occur if the project would:

"(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

(b) Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases."[4]

In their document, *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA*, the San Joaquin Valley Unified Air Pollution Control District (Air District) provides the following guidance to lead agencies for determining the cumulative significance of project specific GHG emissions on global climate change:

- "Projects determined to be exempt from the requirements of CEQA would be determined to have a less than significant individual and cumulative impact for GHG emissions and would not require further environmental review, including analysis of project specific GHG emissions. Projects exempt under CEQA would be evaluated consistent with established rules and regulations governing project approval and would not be required to implement BPS.
- Projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the lead agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the lead agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement BPS.
- Projects implementing Best Performance Standards would not require quantification of project specific GHG emissions. Consistent with CEQA Guideline, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.
- Projects not implementing Best Performance Standards would require quantification of project specific GHG emissions and demonstration that project specific GHG emissions would be reduced or mitigated by at least 29%, compared to BAU, including GHG emission reductions achieved since the 2002-2004 baseline period. Projects achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.
- Notwithstanding any of the above provisions, projects requiring preparation of an Environmental Impact Report for any other reason would require quantification of project specific GHG emissions. Projects implementing BPS or achieving at least a 29% GHG

[4] CEQA Guidelines Appendix G: Environmental Checklist Form.

emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG."[5]

ENVIRONMENTAL SETTING

"Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). The major concern is that increases in GHGs are causing global climate change. Global climate change is a change in the average weather on earth that can be measured by wind patterns, storms, precipitation and temperature. The gases believed to be most responsible for global warming are water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)."[6] "Nitrogen trifluoride was not listed initially in AB 32 but was subsequently added to the list via legislation."[7]

"Human activities are responsible for almost all of the increase in greenhouse gases in the atmosphere over the last 150 years. The largest source of greenhouse gas emissions from human activities in the United States is from burning fossil fuels for electricity, heat, and transportation."[8]

"Climate Change Impacts in California

In 2009 and 2013 the California Natural Resources Agency prepared reports to the Governor on California's Climate Adaptation Strategy, and the Agency also produced three Climate Change Assessments based on peer reviewed science. Those reports detail the existing and expected impacts of global warming in California. These include:

- **Sea level rise, coastal flooding and coastal erosion.** Approximately 85% of California's population live and work in coastal counties. The sea level along California's coasts has risen nearly 8 inches in the past century and is projected to rise by as much as 20 to 55 inches by the end of the century. A 55-inch sea level rise could put nearly half a million people at risk of flooding by 2100, and threaten $100 billion in property and infrastructure, including roadways, buildings, hazardous waste sites, power plants, and parks and tourist destinations. Coastal erosion could have a significant impact on California's ocean-dependent economy, which is estimated to be $46 billion per year.
- As sea levels rise, saltwater contamination of the State's delta and levee systems will increase. Saltwater contamination of the Sacramento/San Joaquin Delta will threaten wildlife and the source of drinking water for 20 million Californians. Farmland in low areas may also be harmed by salt-contaminated water.

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[5] Air District, Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA. Pages 4-5. Accessed August 2021 at: http://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf.

[6] Tulare County General Plan Background Report. Pages 6-19 to 6-20.

[7] California Air Resources Board. Assembly Bill 32 Overview – What Gases or Compounds are Covered Under AB 32? Accessed August 2021 at: http://www.arb.ca.gov/cc/ab32/ab32.htm.

[8] United States Environmental Protection Agency. Sources of Greenhouse Gas Emissions – Overview. Accessed August 2021 at: https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions.

- **Losses to the Sierra snowpack and water supply.** The Sierra Nevada snowpack functions as the most important natural reservoir of water in California. Under current conditions, the snowpack is created in fall and winter and slowly releases about 15 million acre-feet of water in the spring and summer, when California needs it most. California's dams and water storage facilities are built to handle the snow melt as it happened in the past. Higher temperatures are now causing the snowpack to melt earlier and all at once. Earlier and larger releases of water could overwhelm California's water storage facilities, creating risk of floods and water shortages.
- **Forestry and higher risk of fires.** Forest and rangelands cover over 80% of California's 100 million acres. Climate change will affect tree survival and growth, reducing these lands' productivity and changing their habitats. In addition, climate change makes forests more vulnerable to fires by increasing temperatures and making forests and brush drier. Today's fire season in the western United States starts earlier, lasts longer, and is more intense than in the last several decades. Wildfire occurrence statewide could increase several-fold by the end of the century, increasing fire suppression and emergency response costs and damage to property.
- **Damage to agriculture.** Global warming can cause drought, higher temperatures, saltwater contamination through rising sea levels, flooding, and increased risk of pests. These changes pose a very serious threat to California's agricultural industry, which generated $39 billion in revenue in 2007, and which is responsible for more than half of all domestic fruits and vegetables. Because California feeds not only its own residents, but the entire U.S. and other countries as well, production declines could lead to food shortages and higher prices.
- **Increased demand for electricity.** Higher temperatures and more heat waves will drive up demand for cooling in the summer. As people turn up their air conditioners, increased electricity use will be greatest in southern California and the Central Valley, and may be as high as 60% above present demand by the end of the century.
- **Public health impacts.** Californians already experience the worst air quality in the nation. Hotter temperatures lead to more smog, which can damage lungs, and increases childhood asthma, respiratory and heart disease and death. Certain segments of the population are at greater risk, including the elderly, infants, persons with chronic heart or lung disease, people who can't afford air conditioning, and those who work outdoors. (See Climate Change's Unequal Impacts). As temperatures rise, the number of days of extreme heat events also will rise, causing increases in the risk of injury or death from dehydration, heatstroke, heart attack and respiratory problems. In July 2006, California experienced a heat wave that led to more than 140 deaths, and possibly 2 to 3 times that number. Heat waves similar in length and intensity to those experienced in 2006 will be more frequent and could become annual occurrences by the end of the century.
- **Habitat destruction and loss of ecosystems.** California is one of the most biologically diverse regions of the world, with the highest number of unique plant and animal species of all 50 states and the greatest number of endangered species. Climate change will adversely affect plant and wildlife habitats and the ability of the State's varied ecosystems

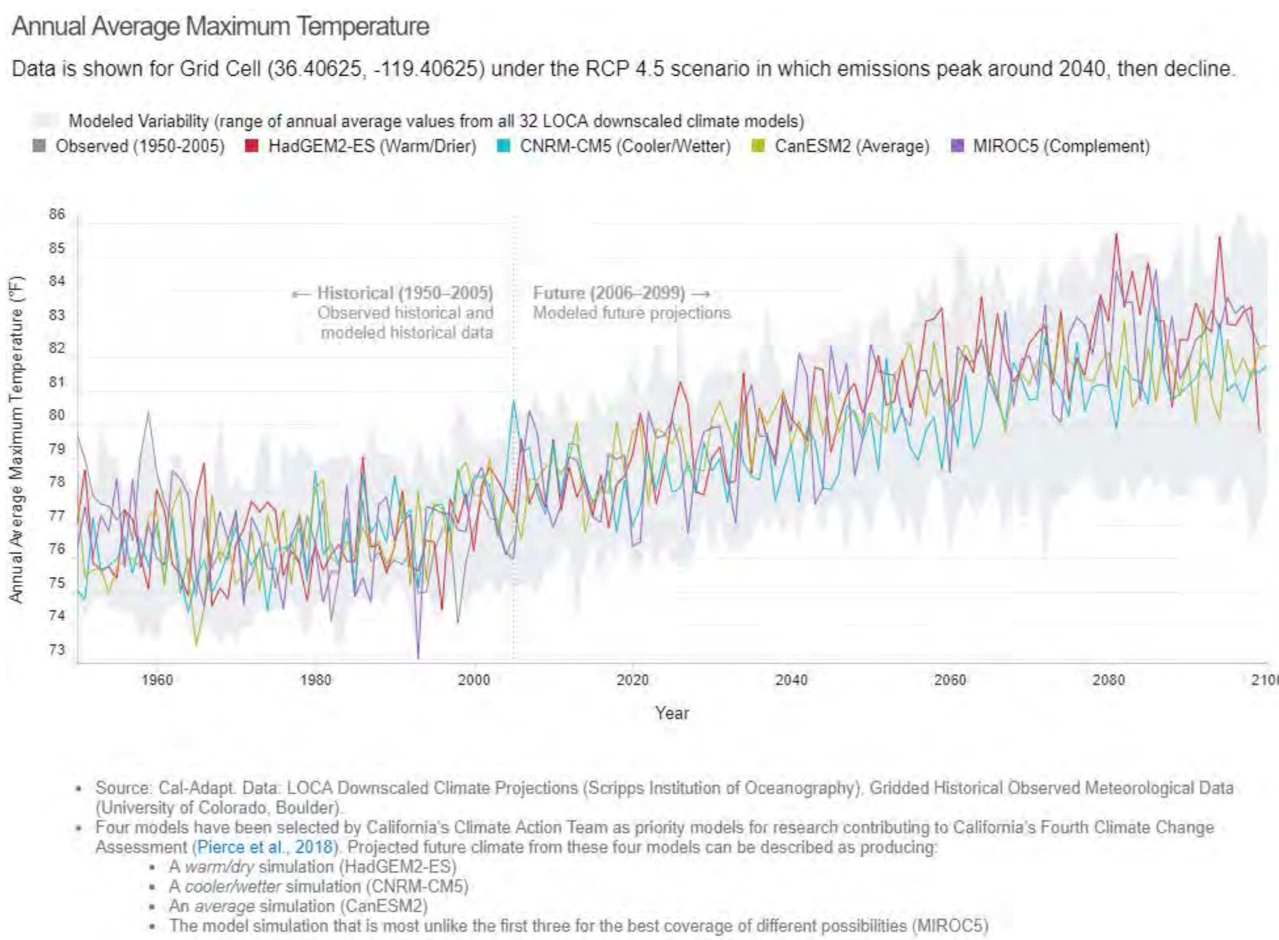
to support clean water, wildlife, fish, timber and other goods and services important for our well-being."[9]

Project Area: Consequences of Climate Change

Temperature

Figure 3.6-1 displays a chart of measured historical and projected annual average maximum temperatures in the Project area. As shown in the figure, temperatures are expected to rise in all models used for the analysis. The results indicate that the annual mean temperatures are predicted to increase by 6.0 degrees Fahrenheit (°F) based on the 2070 to 2099 projections from a 1961-1990 baseline.

Figure 3.6-1[10]
Observed and Projected Temperatures for Climate Change in the Project Area



[9] State of California, Department of Justice. Climate Change Impacts in California. Accessed August 2021 at: https://oag.ca.gov/environment/impact.

[10] Cal-Adapt. California Annual Averages. Accessed August 2021 at: https://cal-adapt.org/tools/annual-averages/.

Water Supply

The Project will rely on two existing on-site private wells to provide water to the Project. The availability of surface water and the rate of groundwater recharge could potentially reduce the yield of these wells if climate change resulted in a reduction of available snowpack in the Sierra Nevada mountain range.

Wildfires

The Project site is not located in a Fire Hazard Severity Zone.[11]

Climate Change and Human Health

"Climate change, together with other natural and human-made health stressors, influences human health and disease in numerous ways. Some existing health threats will intensify and new health threats will emerge. Not everyone is equally at risk. Important considerations include age, economic resources, and location.

In the U.S., public health can be affected by disruptions of physical, biological, and ecological systems, including disturbances originating here and elsewhere. The health effects of these disruptions include increased respiratory and cardiovascular disease, injuries and premature deaths related to extreme weather events, changes in the prevalence and geographical distribution of food- and water-borne illnesses and other infectious diseases, and threats to mental health."[12]

"Climate change is projected to harm human health by increasing ground-level ozone and/or particulate matter air pollution in some locations. Ground-level ozone (a key component of smog) is associated with many health problems, such as diminished lung function, increased hospital admissions and emergency room visits for asthma, and increases in premature deaths.

Factors that affect ozone formation include heat, concentrations of precursor chemicals, and methane emissions. Particulate matter concentrations are affected by wildfire emissions and air stagnation episodes, among other factors. By increasing these different factors, climate change is projected to lead to increased concentrations of ozone and particulate matter in some regions. Increases in global temperatures could cause associated increases in premature deaths related to worsened ozone and particle pollution.

Estimates that assume no change in regulatory controls or population characteristics have ranged from 1,000 to 4,300 additional premature deaths nationally per year by 2050 from combined ozone and particle health effects. Less certainty exists about the responses of airborne particles to climate change than the response of ozone. Health-related costs of the current effects of ozone air pollution

[11] Cal Fire. Tulare County, Fire Hazard Severity Zones in SRA (map). Adopted 2007. Accessed August 2021 at: https://osfm.fire.ca.gov/media/6830/fhszs_map54.pdf.
[12] Centers for Disease Control and Prevention (CDC). Climate and Health. Accessed August 2021 at: https://www.cdc.gov/climateandhealth/effects/default.htm.

exceeding national standards have been estimated at $6.5 billion (in 2008 U.S. dollars) nationwide, based on a U.S. assessment of health impacts from ozone levels during 2000–2002." [13]

Greenhouse Gases

Greenhouse gases (GHG) are defined as gases that trap heat in the Earth's atmosphere. The main greenhouse gases are carbon dioxide, methane, nitrous oxide and fluorinated gases, such as hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and nitrogen trifluoride. Water vapor, ozone and aerosols are also common greenhouse gases.[14]

"Since the Industrial Revolution began in the 1700s, people have added a substantial amount of greenhouse gases into the atmosphere by burning fossil fuels, cutting down forests, and conducting other activities. When greenhouse gases are emitted into the atmosphere, many remain there for long time periods ranging from a decade to many millennia. Over time, these gases are removed from the atmosphere by chemical reactions or by emissions sinks, such as the oceans and vegetation, which absorb greenhouse gases from the atmosphere. As a result of human activities, however, these gases are entering the atmosphere more quickly than they are being removed, and thus their concentrations are increasing."[15]

"When energy from the sun reaches the Earth, the planet absorbs some of this energy and radiates the rest back to space as heat. The Earth's surface temperature depends on this balance between incoming and outgoing energy…A variety of physical and chemical changes can affect the global energy balance and force changes in the Earth's climate. Some of these changes are natural, while others are influenced by humans. These changes are measured by the amount of warming or cooling they can produce, which is called "radiative forcing." Changes that have a warming effect are called "positive" forcing, while changes that have a cooling effect are called "negative" forcing. When positive and negative forces are out of balance, the result is a change in the Earth's average surface temperature."[16]

"The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO2). The larger the GWP, the more that a given gas warms the Earth compared to CO2 over that time period. The time period usually used for GWPs is 100 years. GWPs provide a common unit of measure, which allows analysts to add up emissions estimates of different gases (e.g., to compile a national GHG inventory), and allows policymakers to compare emissions reduction opportunities across sectors and gases."[17]

[13] CDC. Air Pollution. Accessed August 2021 at: https://www.cdc.gov/climateandhealth/effects/air_pollution.htm.

[14] United States Environmental Protection Agency. Overview of Greenhouse Gasses. Accessed August 2021 at: https://www.epa.gov/ghgemissions/overview-greenhouse-gases.

[15] United States Environmental Protection Agency. Climate Change Indicators: Atmospheric Concentrations of Greenhouse Gases. Accessed August 2021 at: https://www.epa.gov/climate-indicators/climate-change-indicators-atmospheric-concentrations-greenhouse-gases.

[16] United States Environmental Protection Agency. Climate Change Indicators: Climate Forcing. Accessed August 2021 at: https://www.epa.gov/climate-indicators/climate-change-indicators-climate-forcing.

[17] United States Environmental Protection Agency. Understanding Global Warming Potentials. Accessed August 2021 at: https://www.epa.gov/ghgemissions/understanding-global-warming-potentials.

The greenhouse gases or compounds covered by Assembly Bill (AB) 32 include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Nitrogen trifluoride was not listed in the original version of AB 32, but has since been added to the list by legislation.[18]

Senate Bill (SB) 605 charged the ARB with completing a comprehensive strategy to reduce emissions of short-lived climate pollutants (SLCP) by January 1, 2016. "These pollutants include the greenhouse gases (GHG) methane and hydrofluorocarbons (HFC), and anthropogenic black carbon…This legislation also set statewide emissions reduction targets specifying a 40 percent reduction in methane, a 40 percent reduction in HFCs, and a 50 percent reduction in anthropogenic black carbon below 2013 levels by 2030. The bill also established specific targets for reducing organic waste in landfills and provided specific direction for methane emissions reductions from dairy and livestock operations."[19]

Emissions Inventories

"An emissions inventory is a database that lists, by source, the amount of air pollutants discharged into the atmosphere during a year or other time period."[20] "In 2014, the top carbon dioxide (CO2) emitters were China, the United States, the European Union, India, the Russian Federation, and Japan. These data include CO2 emissions from fossil fuel combustion, as well as cement manufacturing and gas flaring. Together, these sources represent a large proportion of total global CO2 emissions."[21]

Figure 3.6-2 exhibits the contributors of GHG emissions in California between years 2000 and 2017, organized by the categories in the AB 32 Scoping Plan. The main emissions contributor in in the most recent year was transportation. The second-highest sector was industrial, which includes sources from refineries, general fuel use, oil and gas extraction, cement plants, and cogeneration heat output. Electric power is the third-highest contributing sector, but shows a reduction trend. ARB reported that California's GHG emissions inventory was a total of 424 MMTCO_2e in 2017, which is 5 MMTCO_2e lower than 2016 levels.[22]

[18] California Air Resources Board. AB 32 Global Warming Solutions Act of 2006. Accessed August 2021 at: https://ww2.arb.ca.gov/resources/fact-sheets/ab-32-global-warming-solutions-act-2006.

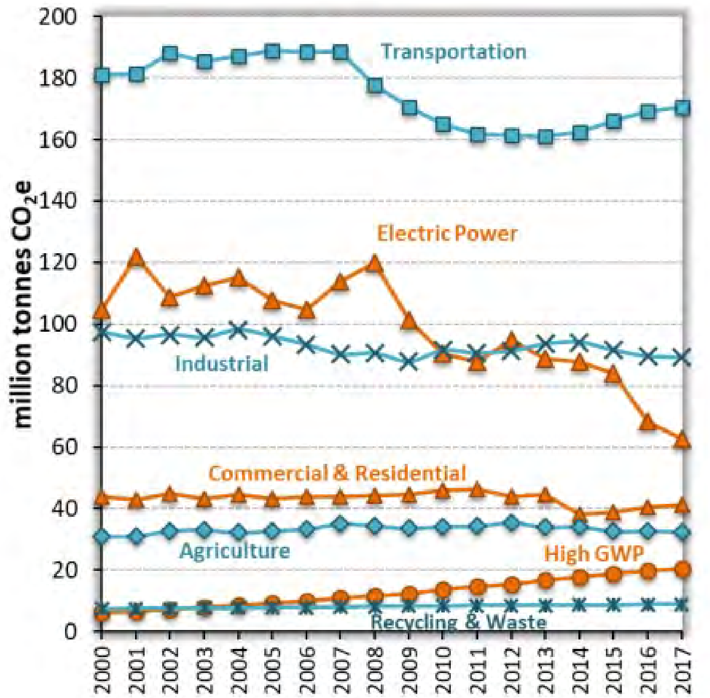
[19] California Air Resources Board. Short-lived Climate Pollutants. Accessed August 2021 at: https://ww2.arb.ca.gov/our-work/programs/slcp/about.

[20] United States Environmental Protection Agency. Managing Air Quality-Emissions Inventories. Accessed August 2021 at: https://www.epa.gov/air-quality-management-process/managing-air-quality-emissions-inventories#:~:text=Emissions%20inventories%20are%20an%20essential%20input%20to%20mathematical,to%20emissions%20inventory%20data%20in%20air%20quality%20models.

[21] United States Environmental Protection Agency, Global Greenhouse Gas Emissions Data. Accessed August 2021 at: https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data.

[22] California Air Resources Board. 2019 Edition, California Greenhouse Gas Emission Inventory: 2000-2017. Page 1. Accessed August 2021 at: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2016/ghg_inventory_trends_00-16.pdf.

Figure 3.6-2[23]
Trends in California GHG Emissions
(organized by the categories in the AB 32 Scoping Plan)



"In 2007, Tulare County generated approximately 5.2 million tonnes of Carbon Dioxide Equivalent (CO_2e). The largest portion of these emissions (63 percent) is attributed to dairies/feedlots, while the second largest portion (16 percent) is from mobile sources."[24] The *Tulare County Climate Action Plan 2018 Update* (summarized in **Table 3.6-1**) indicates that Transportation (mobiles sources) makes up 5.9 percent; while Dairies make up 80 percent (overall, Agricultural-related sources make up 87.6 percent of all GHG emissions). As shown in **Table 3.6-1**, agricultural-related emissions will not decline when compared to other sources as emission reduction techniques for agricultural-related sources are costly, and in many instances technologically infeasible. As such, agricultural-related sources are anticipated to make up nearly 92 percent of GHG emissions in Year 2030; with dairies accounting for nearly 87 percent of all emissions.

[23] Ibid. Figure 3. Page 5.
[24] Tulare County. General Plan 2030 Update Background Report. Page 6-36.

Table 3.6-1
Tulare County Emissions Inventory 2015 to 2030[25]

Source	**Emission ($MTCO_2e$ per year)**		
	2015	**2020**	**2030**
Transportation[1]	573,821	455,946	363,490
Energy[2]	263,745	252,215	240,542
Solid Waste[3]	176,925	160,088	160,088
Water & Wastewater[4]	1,942	1,974	2,191
Industrial[5]	173,190	174,319	175,621
Agricultural[6]	8,437,327	9,122,753	10,469,155
Grand Total	**9,626,950**	**10,167,294**	**11,411,087**

Notes:
[1] Includes On-road Vehicles, Off-Road Vehicles, Locomotives, and Aviation.
[2] Includes Electricity, Energy - Natural Gas, Energy – Propane, and Residential Woodburning.
[3] Includes Solid Waste – Landfill.
[4] Includes Water and Wastewater Treatment.
[5] Includes Industrial Natural Gas and Industrial Electricity.
[6] Includes Agricultural Electricity, Burning, Fertilizer, - Equipment, and Dairy.

2023 dairy emissions are used as a placeholder for 2030 dairy emissions since 2030 emission projections are unavailable; see Section 4.2 of the AQ-GHG Report.

$MTCO_2e$ = metric tons of carbon dioxide equivalents

Source of emissions: Tulare County Climate Action Plan 2018 Update. Appendix A—GHG Emission Estimates. December 2018.

The Tulare County General Plan contains the following: "Enhancement of the greenhouse effect can occur when concentrations of GHGs exceed the natural concentrations in the atmosphere. Of these gases, CO_2 and methane are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas methane primarily results from off-gassing associated with agricultural practices and landfills. SF_6 is a GHG commonly used in the utility industry as an insulating gas in transformers and other electronic equipment. There is widespread international scientific agreement that human-caused increases in GHGs has and will continue to contribute to global warming, although there is much uncertainty concerning the magnitude and rate of the warming.

Some of the potential resulting effects in California of global warming may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought year. Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects:

[25] Tulare County Climate Action Plan 2018 Update. Pages 48-49. December 2018. Accessed August 2021: http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/220Climate%20Action%20Plan/CLIMATE%20ACTION%20PLAN%202018%20UPDATE.pdf.

- Higher maximum temperatures and more hot days over nearly all land areas;
- Higher minimum temperatures, fewer cold days and frost days over nearly all land areas;
- Reduced diurnal temperature range over most land areas;
- Increase of heat index over land areas; and
- More intense precipitation events.

Also, there are many secondary effects that are projected to result from global warming, including global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity. While the possible outcomes and the feedback mechanisms involved are not fully understood, and much research remains to be done, the potential for substantial environmental, social, and economic consequences over the long term may be great."[26]

REGULATORY SETTING

International

International organizations have made substantial efforts to reduce GHGs. Preventing human-induced climate change will require the participation of all nations in solutions to address the issue. The following paragraphs summarize a few of the major international agreements and/or organizations:

Intergovernmental Panel on Climate Change (IPCC):

"Created in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP), the objective of the IPCC is to provide governments at all levels with scientific information that they can use to develop climate policies. IPCC reports are also a key input into international climate change negotiations. The IPCC is an organization of governments that are members of the United Nations or WMO. The IPCC currently has 195 members. Thousands of people from all over the world contribute to the work of the IPCC. For the assessment reports, IPCC scientists volunteer their time to assess the thousands of scientific papers published each year to provide a comprehensive summary of what is known about the drivers of climate change, its impacts and future risks, and how adaptation and mitigation can reduce those risks. An open and transparent review by experts and governments around the world is an essential part of the IPCC process, to ensure an objective and complete assessment and to reflect a diverse range of views and expertise. Through its assessments, the IPCC identifies the strength of scientific agreement in different areas and indicates where further research is needed. The IPCC does not conduct its own research."[27]

United Nations Framework Convention on Climate Change (UNFCCC):

"The UNFCCC entered into force on 21 March 1994. Today, it has near-universal membership. The 197 countries that have ratified the Convention are called Parties to the Convention.

[26] Tulare County. General Plan 2030 Update Background Report. Pages 6-31.
[27] Intergovernmental Panel on Climate Change (IPCC). About. Accessed August 2021 at: https://www.ipcc.ch/about/.

Preventing "dangerous" human interference with the climate system is the ultimate aim of the UNFCCC… The ultimate objective of the Convention is to stabilize greenhouse gas concentrations "at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system." It states that "such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner." Industrialized nations agree under the Convention to support climate change activities in developing countries by providing financial support for action on climate change-- above and beyond any financial assistance they already provide to these countries. A system of grants and loans has been set up through the Convention and is managed by the Global Environment Facility. Industrialized countries also agree to share technology with less-advanced nations."[28]

Kyoto Protocol:

"The Kyoto Protocol was adopted on 11 December 1997. Owing to a complex ratification process, it entered into force on 16 February 2005. Currently, there are 192 Parties to the Kyoto Protocol. In short, the Kyoto Protocol operationalizes the United Nations Framework Convention on Climate Change by committing industrialized countries and economies in transition to limit and reduce greenhouse gases (GHG) emissions in accordance with agreed individual targets. The Convention itself only asks those countries to adopt policies and measures on mitigation and to report periodically."[29]

Paris Agreement:

"The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016. Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels. To achieve this long-term temperature goal, countries aim to reach global peaking of greenhouse gas emissions as soon as possible to achieve a climate neutral world by mid-century. The Paris Agreement is a landmark in the multilateral climate change process because, for the first time, a binding agreement brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects."[30]

It should be noted that on June 1,2017 former President Trump announced that his administration was officially withdrawing from the Paris Agreement. However, on January 20, 2021 President Biden announced that the United States would, once again, commit to the international accord.[31] California continues its dedication to reducing climate change through programs designed to limit GHGs.

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[28] United Nations Climate Change. What is the UNFCCC? Accessed August 2021 at: https://unfccc.int/process-and-meetings/the-convention/what-is-the-united-nations-framework-convention-on-climate-change.

[29] United Nations Climate Change. What is the Kyoto Protocol? Accessed August 2021 at: https://unfccc.int/kyoto_protocol.

[30] United Nations Climate Change. The Paris Agreement. Accessed August 2021 at: https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement.

[31] White House Briefing Room, Statements and Releases. Paris Climate Agreement. January 20, 2021. Accessed August 2021 at: https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/20/paris-climate-agreement/.

Federal Agencies & Regulations

U.S. EPA United States Environmental Protection Agency

"The primary sources of greenhouse gas emissions in the United States are:

- Transportation: (28.9 percent of 2017 greenhouse gas emissions) – The transportation sector generates the largest share of greenhouse gas emissions. Greenhouse gas emissions from transportation primarily come from burning fossil fuel for our cars, trucks, ships, trains, and planes. Over 90 percent of the fuel used for transportation is petroleum based, which includes primarily gasoline and diesel.
- Electricity production: (27.5 percent of 2017 greenhouse gas emissions) – Electricity production generates the second largest share of greenhouse gas emissions. Approximately 62.9 percent of our electricity comes from burning fossil fuels, mostly coal and natural gas.
- Industry: (22.2 percent of 2017 greenhouse gas emissions) – Greenhouse gas emissions from industry primarily come from burning fossil fuels for energy, as well as greenhouse gas emissions from certain chemical reactions necessary to produce goods from raw materials.
- Commercial and Residential: (11.6 percent of 2017 greenhouse gas emissions) – Greenhouse gas emissions from businesses and homes arise primarily from fossil fuels burned for heat, the use of certain products that contain greenhouse gases, and the handling of waste.
- Agriculture: (9.0 percent of 2017 greenhouse gas emissions) – Greenhouse gas emissions from agriculture come from livestock such as cows, agricultural soils, and rice production.
- Land Use and Forestry: (offset of 11.1 percent of 2017 greenhouse gas emissions) – Land areas can act as a sink (absorbing CO_2 from the atmosphere) or a source of greenhouse gas emissions. In the United States, since 1990, managed forests and other lands have absorbed more CO_2 from the atmosphere than they emit."[32]

Greenhouse Gas Endangerment Finding

"On April 2, 2007, in Massachusetts v. EPA, 549 U.S. 497 (2007), the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act. The Court held that the Administrator must determine whether or not emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the Administrator is required to follow the language of section 202(a) of the Clean Air Act. The Supreme Court decision resulted from a petition for rulemaking under section 202(a) filed by more than a dozen environmental, renewable energy, and other organizations.

[32] United States Environmental Protection Agency. Sources of Greenhouse Gas Emissions – Overview. Accessed August 2021 at: https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions.

On April 17, 2009, the Administrator signed proposed endangerment and cause or contribute findings for greenhouse gases under Section 202(a) of the Clean Air Act. EPA held a 60-day public comment period, which ended June 23, 2009, and received over 380,000 public comments. These included both written comments as well as testimony at two public hearings in Arlington, Virginia and Seattle, Washington. EPA carefully reviewed, considered, and incorporated public comments and has now issued these final Findings.

On December 7, 2009, the Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride—in the atmosphere threaten the public health and welfare of current and future generations.

- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action was a prerequisite for implementing greenhouse gas emissions standards for vehicles. In collaboration with the National Highway Traffic Safety Administration, EPA finalized emission standards for light-duty vehicles (2012-2016 model years) in May of 2010 and heavy-duty vehicles (2014-2018 model years) in August of 2011."[33]

State Agencies & Regulations

California Clean Air Act

"The California CAA of 1988 establishes an air quality management process that generally parallels the federal process. The California CAA, however, focuses on attainment of the State ambient air quality standards,…which, for certain pollutants and averaging periods, are more stringent than the comparable federal standards. Responsibility for meeting California's standards is addressed by the CARB and local air pollution control districts (such as the eight county SJVAPCD, which administers air quality regulations for Tulare County). Compliance strategies are presented in district-level air quality attainment plans."[34]

"Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased

[33] United States Environmental Protection Agency. Endangerment and Cause or Contribute Findings for Greenhouse Gasses under the Section 202(a) of the Clean Air Act. Accessed August 2021 at: https://www.epa.gov/ghgemissions/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a-clean.

[34] Tulare County General Plan 2030 Update RDEIR. Pages 3.3-2 to 3.3-3.

temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

While dated, this EO remains relevant because a more recent California Appellate Court decision, *Cleveland National Forest Foundation v. San Diego Association of Governments* (November 24, 2014) 231 Cal.App.4th 1056, examined whether it should be viewed as having the equivalent force of a legislative mandate for specific emissions reductions. While the California Supreme Court ruled that the San Diego Association of Governments did not abuse its discretion by declining to adopt the 2050 goal as a measure of significance in light of the fact that the EO does not specify any plan or implementation measures to achieve its goal, the decision also recognized that the goal of a 40 percent reduction in 1990 GHG levels by 2030 is "widely acknowledged" as a "necessary interim target to ensure that California meets its longer-range goal of reducing GHG emissions 80 percent below 1990 levels by the year 2050.

Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed Assembly Bill (AB) 32 (Health and Safety Code § 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). AB 32 anticipates that the GHG reduction goals will be met, in part, through local government actions. CARB has identified a GHG reduction target of 15 percent from current levels for local governments and notes that successful implementation relies on local governments' land use planning and urban growth decisions.

Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which was re-approved by CARB on August 24, 2011, that outlines measures to meet the 2020 GHG reduction goals. To meet these goals, California must reduce its GHG emissions by 30 percent below projected 2020 business-as-usual emissions levels or about 15 percent from today's levels. The Scoping Plan recommends measures for further study and possible state implementation, such as new fuel regulations. It estimates that a reduction of 174 million metric tons of CO_2e (about 191 million U.S. tons) from the transportation, energy, agriculture, and forestry sectors and other sources could be achieved should the State implement all of the measures in the Scoping Plan.

The Scoping Plan is required by AB 32 to be updated at least every five years. The first update to the AB 32 Scoping Plan was approved on May 22, 2014 by CARB. The 2017 Scoping Plan Update was adopted on December 14, 2017. The Scoping Plan Update addresses the 2030 target established by SB 32 as discussed below and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. The key programs that the Scoping Plan Update builds on include: increasing the use of renewable energy in the state, the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, and reduction of methane emissions from agricultural and other wastes.

Executive Order B-30-15

On April 20, 2015 Governor Edmund (Jerry) Brown, Jr., signed EO B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's EO aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union, which adopted the same target in October 2014. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32, discussed above). California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2˚C, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include § 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

Senate Bill X1-2 of 2011, Senate Bill 350 of 2015, and Senate Bill 100 of 2018

SB X1-2 of 2011 requires all California utilities to generate 33 percent of their electricity from renewables by 2020. SB X1-2 sets a three-stage compliance period requiring all California utilities, including independently owned utilities, energy service providers, and community choice aggregators, to generate 20 percent of their electricity from renewables by December 31, 2013; 25 percent by December 31, 2016; and 33 percent by December 31, 2020. SB X1-2 also requires the renewable electricity standard to be met increasingly with renewable energy that is supplied to the California grid from sources within, or directly proximate to, California.

In October 2015, SB 350 was signed by Governor Brown, which requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from renewable resources by 2030. In 2018, SB 100 was signed by Governor Brown, codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard.

2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings

The Building and Efficiency Standards (Energy Standards) were first adopted and put into effect in 1978 and have been updated periodically in the intervening years. These standards are a unique California asset that have placed the State on the forefront of energy efficiency, sustainability, energy independence and climate change issues. The 2019 Building Energy Efficiency Standards improve upon the 2016 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2019 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The 2019 standards are a major step toward meeting Zero Net Energy. According to the California Energy Commission, single-family homes built with the 2019 standards will use about 7 percent less energy due to energy efficiency measures versus those built under the 2016 standards and nonresidential buildings will use about 30 percent less energy (due mainly to lighting upgrades) (CEC 2018). The most significant efficiency improvement to the residential Standards include the introduction of photovoltaic into the perspective package, improvements for attics, walls, water heating and lighting. Buildings permitted on or after January 1, 2020, must comply with the 2019 Standards. These new standards apply only to certain nonresidential building types, as specified in the requirements."[35]

Regional Policy & Regulations

California Air Resources Board (ARB or CARB)

"The Air Resources Board (ARB or Board) has established State ambient air quality standards (State standards) to identify outdoor pollutant levels considered safe for the public. After State standards are established, State law requires ARB to designate each area as attainment, nonattainment, or unclassified for each State standard. The area designations, which are based on the most recent available data, indicate the healthfulness of air quality throughout the State."[36] On July 22, 2004, the California Air Resources Board adopted the 2004 Revisions to the California State Implementation Plan for Carbon Monoxide[37].

California Air Pollution Control Officers Association (CAPCOA)

"In January 2008, the California Air Pollution Control Officers Association (CAPCOA) issued a "white paper" on evaluating GHG emissions under CEQA (CAPCOA, 2008). The CAPCOA white paper strategies are not guidelines and have not been adopted by any regulatory agency; rather, the paper is offered as a resource to assist lead agencies in considering climate change in environmental documents."[38]

The California Association of Air Pollution Control Officers (CAPCOA) represents all thirty-five local air quality agencies throughout California. CAPCOA, which has been in existence since 1975, is dedicated to protecting the public health and providing clean air for all our residents and visitors to breathe, and initiated the Greenhouse Gas Reduction Exchange.[39]

[35] *"Air Quality & Greenhouse Gas Assessment Three Rivers Hampton Inn and Suites Project."* July 2020. Pages 31-34. Prepared by ECORP Consulting Inc. and included in Appendix "A" of this Draft EIR.

[36] California Air Resources Board. Air Quality Standards and Area Designations. Accessed October 2021 at: http://www.arb.ca.gov/desig/desig.htm.

[37] California Air Resources Board. 2004 Revisions to the California State Implementation Plan for Carbon Monoxide. Accessed October 2021 at: http://www.arb.ca.gov/planning/sip/co/co.htm.

[38] Tulare County General Plan 2030 Update RDEIR. Page 3.4-12.

[39] California Air Pollution Control Officers Association. Accessed October 2021 at: http://www.capcoa.org/.

"The Greenhouse Gas Reduction Exchange (GHG Rx) is a registry and information exchange for greenhouse gas emissions reduction credits designed specifically to benefit the state of California. The GHG Rx is a trusted source of locally generated credits from projects within California, and facilitates communication between those who create the credits, potential buyers, and funding organizations."[40] Four public workshops were held throughout the state including in the SJVAPCD. The mission is to provide a trusted source of high quality California-based greenhouse gas credits to keep investments, jobs, and benefits in-state, through an Exchange with integrity, transparency, low transaction costs and exceptional customer service.[41]

San Joaquin Valley Unified Air Pollution Control District (Air District)

"The San Joaquin Valley Air Pollution Control District is a public health agency whose mission is to improve the health and quality of life for all Valley residents through efficient, effective and entrepreneurial air quality-management strategies."[42] "The San Joaquin Valley Air Pollution Control District is made up of eight counties in California's Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare and the San Joaquin Valley Air Basin portion of Kern."[43]

"On December 17, 2009, the District's Governing Board adopted the District Policy: *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. The District's Governing Board also approved the guidance document: *Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects Under CEQA*. In support of the policy and guidance document, District staff prepared a staff report: *Addressing Greenhouse Gas Emissions Under the California Environmental Quality Act*. These documents adopted in December of 2009 continue to be the relevant policies to address GHG emissions under CEQA. As these documents may be modified under a separate process, the latest versions should be referenced to determine the District's current guidance at the time of analyzing a particular project." [44]

"It is widely recognized that no single project could generate enough GHG emissions to noticeably change the global climate temperature. However, the combination of GHG emissions from past, present and future projects could contribute substantially to global climate change. Thus, project specific GHG emissions should be evaluated in terms of whether or not they would result in a cumulatively significant impact on global climate change. GHG emissions, and their associated contribution to climate change, are inherently a cumulative impact issue. Therefore, project-level impacts of GHG emissions are treated as one-in-the-same as cumulative impacts.

In summary, the staff report evaluates different approaches for assessing significance of GHG emission impacts. As presented in the report, District staff reviewed the relevant scientific

[40] Ibid.

[41] California Air Pollution Control Officers Association. Accessed October 2021 at: http://www.ghgrx.org/.

[42] San Joaquin Valley Air Pollution Control District. About the District. Accessed October 2021 at: http://www.valleyair.org/General_info/aboutdist.htm#Mission.

[43] Ibid.

[44] Air District. GAMAQI. Section 8.9. Page 110.

information and concluded that the existing science is inadequate to support quantification of the extent to which project specific GHG emissions would impact global climate features such as average air temperature, average rainfall, or average annual snow pack. In other words, the District was not able to determine a specific quantitative level of GHG emissions increase, above which a project would have a significant impact on the environment, and below which would have an insignificant impact. This is readily understood, when one considers that global climate change is the result of the sum total of GHG emissions, both manmade and natural that occurred in the past; that is occurring now; and will occur in the future.

In the absence of scientific evidence supporting establishment of a numerical threshold, the District policy applies performance based standards to assess project-specific GHG emission impacts on global climate change. The determination is founded on the principal that projects whose emissions have been reduced or mitigated consistent with the California Global Warming Solutions Act of 2006, commonly referred to as “AB 32”, should be considered to have a less than significant impact on global climate change. For a detailed discussion of the District’s establishment of thresholds of significance for GHG emissions, and the District’s application of said thresholds, the reader is referred to the above referenced staff report, District Policy, and District Guidance documents.”[45]

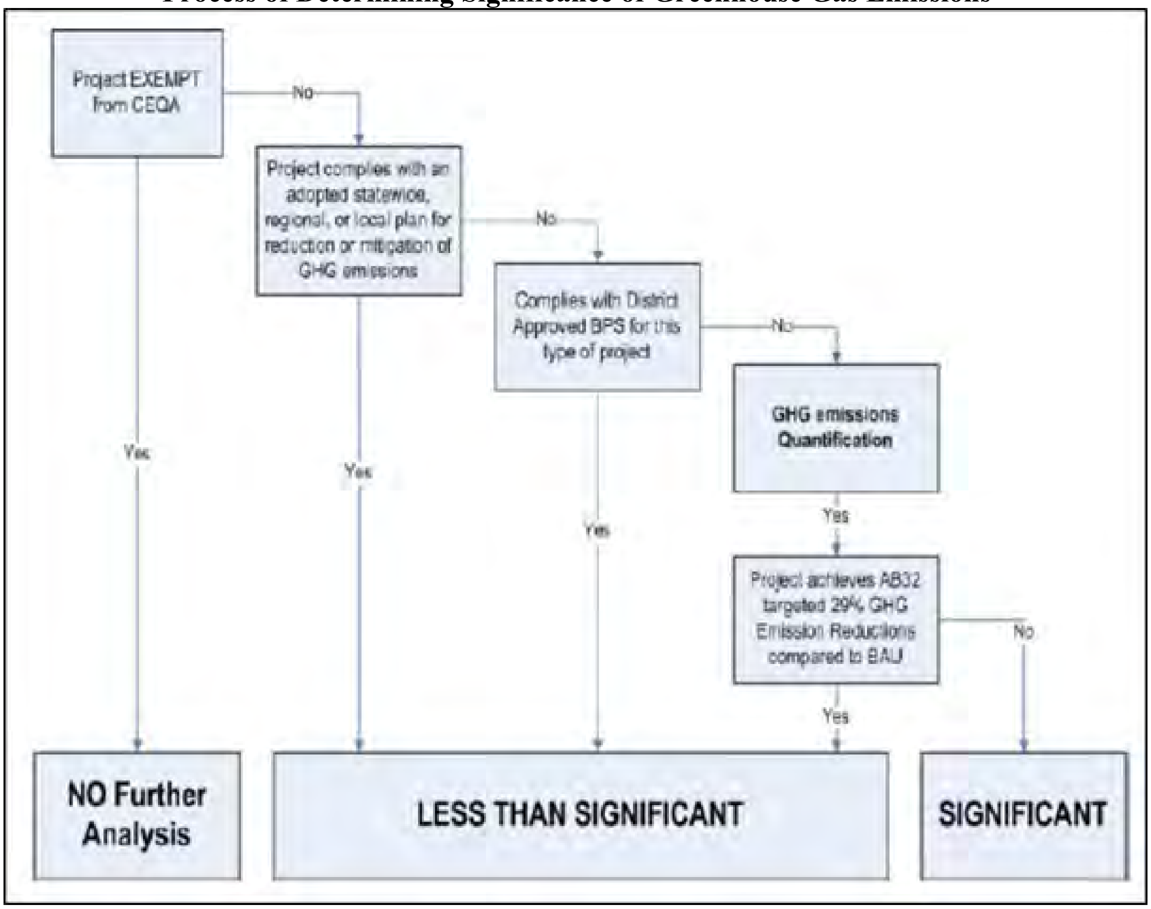
“As presented in Figure 6 (Process of Determining Significance of Greenhouse Gas Emissions) [of the GAMAQI], the policy provides for a tiered approach in assessing significance of project specific GHG emission increases.

- Projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the Lead Agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the Lead Agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement Best Performance Standards (BPS).
- Projects implementing BPS would not require quantification of project specific GHG emissions. Consistent with CEQA Guideline, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.
- Projects not implementing BPS would require quantification of project specific GHG emissions and demonstration that project specific GHG emissions would be reduced or mitigated by at least 29%, compared to Business as Usual (BAU), including GHG emission reductions achieved since the 2002-2004 baseline period, consistent with GHG emission reduction targets established in ARB’s AB 32 Scoping Plan. Projects achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.

[45] Ibid. Section 8.9. 111-112.

The District guidance for development projects also relies on the use of BPS. For development projects, BPS includes project design elements, land use decisions, and technologies that reduce GHG emissions. Projects implementing any combination of BPS, and/or demonstrating a total 29 percent reduction in GHG emissions from business-as-usual (BAU), would be determined to have a less than cumulatively significant impact on global climate change."[46] **Figure 3.6-3** provides a visual summary of the Air District's process for determining significance of project-related GHG emissions.

Figure 3.6-3
Process of Determining Significance of Greenhouse Gas Emissions



The Air District's *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Project under CEQA* states, "Projects implementing Best Performance Standards in accordance with this guidance would be determined to have a less than significant individual and cumulative impact on global climate change and would not require project specific quantification of GHG emissions. Projects exempt from the requirements of CEQA, and projects complying with an approved GHG emission reduction plan or mitigation program would also be determined to

[46] Op. Cit. Section 8.9.1.

have a less than significant individual or cumulative impact. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources and have a certified final CEQA document. Projects not implementing BPS would require quantification of project specific GHG emissions. To be determined to have a less than significant individual and cumulative impact on global climate changes, such projects must be determined to have reduced or mitigated GHG emissions by 29%, consistent with GHG emission reduction targets established in ARB's AB 32 Scoping Plan. Furthermore, quantification of GHG emissions would be expected for all projects for which the lead agency has determined that an Environmental Impact Report is required, regardless of whether the project incorporates Best Performance Standards."[47]

"If total GHG emissions reductions measures add up to 29% or more, are enforceable, and are required as a part of the development's approval process, the project achieves the Best Performance Standard (BPS) for the respective type of development project. Thus, the GHG emissions from the development project would be determined to have a less than individually and cumulatively significant impact on global climate change for CEQA purposes." [48]

"By definition, BPS for development projects is achieving a project-by-project 29% reduction in GHG emissions, compared to BAU. Thus, it is reasonable to conclude that Lead Agencies implementing the proposed *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* threshold will achieve an overall reduction in GHG emissions consistent with AB 32 emission reduction targets…"[49]

Local Policy & Regulations

<u>Tulare County Climate Action Plan</u>

"Tulare County adopted the Tulare County Climate Action Plan (CAP) in 2012. Since then, the CAP was updated in 2018 to establish GHG reduction targets which support the SB 32 2030 target signed by Governor Brown in 2016.

The 2018 CAP Update incorporates new baseline and future year inventories to reflect the latest information and updates the County's strategy to address the SB 32 2030 target. The 2030 target requires the State to reduce emissions by 40 percent below 1990 levels from the 2017 Scoping Plan and County data. The CAP identifies the County's fair share of reductions required to maintain consistency with the State target.

The CAP provides a CEQA consistency checklist for project review of projects below a certain size limit. Proposed development projects that are consistent with the emission reduction and adaptation measures included in the CAP and the programs that are developed as a result of the CAP, would be considered to have a less than significant cumulative impact on climate change

[47] Air District. Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Project under CEQA. Page 4.
[48] Ibid. 7-8.
[49] Op. Cit. 8.

and emissions consistent with CEQA Guidelines Section 15064(h)(3) (as amended to comply with SB 97)."[50]

"The Tulare County Climate Action Plan (CAP) serves as a guiding document for County of Tulare ("County") actions to reduce greenhouse gas emissions and adapt to the potential effects of climate change. The CAP is an implementation measure of the 2030 General Plan Update. The General Plan provides the supporting framework for development in the County to produce fewer greenhouse gas emissions during Plan buildout. The CAP builds on the General Plan's framework with more specific actions that will be applied to achieve emission reduction targets consistent with California legislation."[51]

The CAP follows a four-step process recommended by the Institute for Local Government, including identification of a baseline year (2007) and emissions inventory; projected future year inventories (2020 and 2030); and provision of policies, regulations, and programs that achieve reductions by the target years. …The policies, regulations, and programs considered in the CAP include those by federal, state, and local governments.[52] The following provides a summary of CAP actions:

- "Identifies sources of greenhouse gas emissions caused by activities within the unincorporated areas of Tulare County and estimates how these emissions may change over time.
- Establishes a reduction target of reducing Tulare County's greenhouse gas emissions to demonstrate consistent with AB 32 (2006) and CARB Scoping Plan targets. [This requires a reduction of 6 percent on average from new development in excess of those achieved from adopted regulations.]
- Provides energy use, transportation, land use, water conservation, and solid waste strategies to bring Tulare County's greenhouse gas emissions levels to the reduction target.
- Mitigates the impacts of Tulare County activities on climate change (by reducing greenhouse gas emissions consistent with the direction of the State of California via AB 32, Governor's Order S-03-05, and the 2009 amendments to the CEQA Guidelines to comply with SB 97 (2008). The CEQA Guidelines encourage the adoption of policies or programs as a means of addressing comprehensively the cumulative impacts of projects. (See CEQA Guidelines, Sections 15064(h)(3), 15130(c).)
- Allows the greenhouse gas emissions inventory and CAP to be updated every five years and to respond to changes in science, effectiveness of emission reduction measures and federal, state, regional, or local policies to further strengthen the County's response to the challenges of climate change.

[50] "Air Quality & Greenhouse Gas Assessment Three Rivers Hampton Inn and Suites Project." July 2020. Page 35. Prepared by ECORP Consulting Inc. and included in Appendix "A" of the Three Rivers Hampton Inn and Suites Draft EIR. This document can be requested of RMA staff or viewed at: https://tularecounty.ca.gov/rma/index.cfm/planning-building/environmental-planning/environmental-impact-reports/hampton-inn-suites-three-rivers/

[51] Tulare County Climate Action Plan. Page 1. Accessed March 2021 at: http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/220Climate%20Action%20Plan/CLIMATE%20ACTION%20PLAN%202018%20UPDATE.pdf

[52] Ibid. 3.

- Provides substantial evidence that the emission reductions estimated in the CAP are feasible.
- Serves as the threshold of significance within the County of Tulare for climate change impacts, by which all applicable developments within the County will be reviewed.
- Proposed development projects that are consistent with the emission reduction and adaptation measures included in the CAP and the programs that are developed as a result of the CAP, would be considered to have a less than significant cumulative impact on climate change and emissions consistent with CEQA Guidelines 15064(h)(3) as amended to comply with SB 97."[53]

Tulare County General Plan Policies

"The Tulare County General Plan contains numerous policies aimed at reducing GHG emissions. The 2018 CAP Update incorporates new baseline and future year inventories to reflect the latest information and updates the County's strategy to address the SB 32 2030 target. The 2030 target requires the State to reduce emissions by 40 percent below 1990 levels from the 2017 Scoping Plan and County data. The CAP identifies the County's fair share of reductions required to maintain consistency with the state target.

The CAP references the General Plan policies as tools for reducing GHG emissions. These policies are divided into the categories of Transportation Strategies, Building Energy Efficiency, Water Conservation Energy Savings, Solid Waste Reduction and Recycling, and Agricultural Programs and Incentives. The policies are aimed at County action and do not specifically mandate action at the project level."[54]

The Tulare County 2030 General Plan Update contains a number of policies that apply to projects within the County of Tulare. A summary of the General Plan policies that are most pertinent to the proposed Project are identified below.

AQ-1.5 California Environmental Quality Act (CEQA) Compliance - The County shall ensure that air quality impacts identified during the CEQA review process are consistently and reasonably mitigated when feasible.

AQ-1.7 Support Statewide Climate Change Solutions - The County shall monitor and support the efforts of Cal/EPA, CARB, and the SJVAPCD, under AB 32 (Health and Safety Code §38501 et seq.), to develop a recommended list of emission reduction strategies. As appropriate, the County will evaluate each new project under the updated General Plan to determine its consistency with the emission reduction strategies.

AQ-1.8 Greenhouse Gas Emissions Reduction Plan/Climate Action Plan - The County will develop a Greenhouse Gas Emissions Reduction Plan (Plan) that identifies greenhouse gas emissions within the County as well as ways to reduce those emissions. The Plan will incorporate

[53] Op. Cit. 5.
[54] Op. Cit.

the requirements adopted by the California Air Resources Board specific to this issue. In addition, the County will work with the Tulare County Association of Governments and other applicable agencies to include the following key items in the regional planning efforts.

1. Inventory all known, or reasonably discoverable, sources of greenhouse gases in the County,
2. Inventory the greenhouse gas emissions in the most current year available, and those projected for year 2020, and
3. Set a target for the reduction of emissions attributable to the County's discretionary land use decisions and its own internal government operations.

AQ-1.9 Support Off-Site Measures to Reduce Greenhouse Gas Emissions - The County will support and encourage the use of off-site measures or the purchase of carbon offsets to reduce greenhouse gas emissions.

AQ-1.10 Alternative Fuel Vehicle Infrastructure - County shall support the development of necessary facilities and infrastructure needed to encourage the use of low or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations, including CNG filling stations.)

AQ-3.5 Alternative Energy Design - The County shall encourage all new development, including rehabilitation, renovation, and redevelopment, to incorporate energy conservation and green building practices to maximum extent feasible. Such practices include, but are not limited to: building orientation and shading, landscaping, and the use of active and passive solar heating and water systems.

ERM-4.1 Energy Conservation and Efficiency Measures - The County shall encourage the use of solar energy, solar hot water panels, and other energy conservation and efficiency features in new construction and renovation of existing structures in accordance with State law.

ERM-4.7 Reduce Energy Use in County Facilities - Continue to integrate energy efficiency and conservation into all County functions.

ERM-4.8 Energy Efficiency Standards - The County shall encourage renovations and new development to incorporate energy efficiency and conservation measures that exceed State Title 24 standards. When feasible, the County shall offer incentives for use of energy reduction measures such as expedited permit processing, reduced fees, and technical assistance.

<u>Tulare County Climate Action Plan</u>

"The Tulare County Climate Action Plan (CAP) serves as a guiding document for County of Tulare ("County") actions to reduce greenhouse gas emissions and adapt to the potential effects of climate change. The CAP is an implementation measure of the 2030 General Plan Update. The General Plan provides the supporting framework for development in the County to produce fewer greenhouse gas emissions during Plan buildout. The CAP builds on the General Plan's framework with more specific actions that will be applied to achieve emission reduction targets consistent with California legislation."[55]

The CAP follows a four-step process recommended by the Institute for Local Government, including identification of a baseline year (2007) and emissions inventory; projected future year inventories (2020 and 2030); and provision of policies, regulations, and programs that achieve reductions by the target years. …The policies, regulations, and programs considered in the CAP include those by federal, state, and local governments.[56] The following provides a summary of CAP actions:

- "Identifies sources of greenhouse gas emissions caused by activities within the unincorporated areas of Tulare County and estimates how these emissions may change over time.
- Establishes a reduction target of reducing Tulare County's greenhouse gas emissions to demonstrate consistent with AB 32 (2006) and CARB Scoping Plan targets. [This requires a reduction of 6 percent on average from new development in excess of those achieved from adopted regulations.]
- Provides energy use, transportation, land use, water conservation, and solid waste strategies to bring Tulare County's greenhouse gas emissions levels to the reduction target.
- Mitigates the impacts of Tulare County activities on climate change (by reducing greenhouse gas emissions consistent with the direction of the State of California via AB 32, Governor's Order S-03-05, and the 2009 amendments to the CEQA Guidelines to comply with SB 97 (2008). The CEQA Guidelines encourage the adoption of policies or programs as a means of addressing comprehensively the cumulative impacts of projects. (See CEQA Guidelines, Sections 15064(h)(3), 15130(c).)
- Allows the greenhouse gas emissions inventory and CAP to be updated every five years and to respond to changes in science, effectiveness of emission reduction measures and federal, state, regional, or local policies to further strengthen the County's response to the challenges of climate change.
- Provides substantial evidence that the emission reductions estimated in the CAP are feasible.
- Serves as the threshold of significance within the County of Tulare for climate change impacts, by which all applicable developments within the County will be reviewed.
- Proposed development projects that are consistent with the emission reduction and adaptation measures included in the CAP and the programs that are developed as a result of the CAP, would be considered to have a less than significant cumulative impact on climate change and emissions consistent with CEQA Guidelines 15064(h)(3) as amended to comply with SB 97."[57]

[55] Tulare County Climate Action Plan. Page 1. Accessed August 2021 at: http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/220Climate%20Action%20Plan/CLIMATE%20ACTION%20PLAN%202018%20UPDATE.pdf

[56] Ibid. 3.

[57] Op. Cit. 5.

IMPACT EVALUATION

Would the project:

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

Project Impact Analysis: ***Less Than Significant Impact***

"SJVAPCD's GAMAQI, states: "[I]n the absence of scientific evidence supporting establishment of a numerical threshold, the District policy applies performance based standards to assess project-specific GHG emission impacts on global climate change. The determination is founded on the principal that projects whose emissions have been reduced or mitigated consistent with the California Global Warming Solutions Act of 2006, commonly referred to as 'AB 32', should be considered to have a less than significant impact on global climate change."

The SJVAPCD has adopted guidance documents for assessing and mitigating GHG impacts on global climate change. Rather than establishing specific numeric thresholds of significance (as in the case of criteria pollutant emissions), the SJVAPCD guidance utilizes a tiered approach to assess cumulative impacts on global climate change. The GAMAQI recommends a three-tier approach:

- Projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the Lead Agency with jurisdiction over the affected resource and supported by a CEQA-compliant environmental review document adopted by the Lead Agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement BPS.
- Projects implementing BPS would not require quantification of project-specific GHG emissions. Consistent with CEQA Guidelines, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.
- Projects not implementing BPS would require quantification of project specific GHG emissions and demonstration that project specific GHG emissions would be reduced or mitigated by at least 29%, compared to BAU, including GHG emission reductions achieved since the 2002-2004 baseline period, consistent with GHG emission reduction targets established in CARB's AB 32 Scoping Plan. Projects achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG."[58]

[58] Air Quality and GHG Technical Report (AQ & GHG Report). Prepared by Yorke Engineering, LLC. July 2021. Page 5-16. See Appendix "A" of this Draft EIR.

Landfill Diversion Emissions

"The diversion of organic waste from the landfill to composting and bioenergy production will reduce the quantity of organic matter disposed of in the landfill. Organic matter decomposing in landfills produces GHG emissions; thus, a reduction in organic waste disposal will avoid the emissions of these pollutants.

Direct CO_2 emissions from composting and bioenergy production are biogenic emissions, which were excluded from the GHG inventory because biogenic CO_2 is considered part of the natural carbon cycle and does not contribute to global warming. Further, since the bioenergy facility will generate electricity from biogenic fuel sources, the electricity produced will not contribute to climate change. Thus, any electricity generated on-site and consumed by either the bioenergy facility or compost facility was excluded from this analysis.

GHG emissions associated with the diversion of organic material from landfill to composting and bioenergy production are estimated using EPA's Waste Reduction Model (WARM); the results are summarized in Table 5-1 [of the AQ & GHG Technical Report, **Table 3.6-2** in this Draft EIR]. BAU emissions from the landfill are negative, i.e., a reduction in GHG emissions, which may be counterintuitive, as landfill diversion is a recognized GHG reduction strategy. This can be attributed to two factors. First, the landfill operates a landfill gas (LFG) collection system with genset engines and a flare, which convert the LFG to CO_2. Because the GHGs generated in the landfill derive from the decomposition of organic matter, the CO_2 is considered biogenic and is not counted. It is only the methane not collected by the LFG collection system that is counted towards the landfill emissions inventory. Second, a portion of the organic waste disposed in a landfill does not decompose and is sequestered. Comparing the quantity of carbon sequestered to the quantity of carbon released as methane yields a small negative number. By comparison, diverting organic waste to composting and bioenergy production yields a larger negative number – a net reduction in GHG emissions compared to landfilling. A complete discussion and emission calculations are provided in Appendix B [of the AQ & GHG Technical Report, included in Appendix "A" of this document]."[59]

Table 3.6-2
Summary of Baseline to Project GHG Emissions[60]

Parameter	Baseline (Business as Usual)	Proposed Composting	Proposed Bioenergy
Disposal Quantity	225,000 TPY	200,000 TPY	25,000 TPY
GHG Emissions	(3,977)	(17,378)	

[59] Ibid. 5-13 and 5-14.
[60] Op. Cit. 5-14.

Construction GHG Emissions

"The construction emissions analysis was prepared using CalEEMod version 2016.3.2, the official statewide land use computer model designed to provide a uniform platform for estimating potential criteria pollutant and GHG emissions associated with construction of land use projects. The model quantifies direct emissions from construction (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The mobile source emission factors used in the model include the Pavley standards and Low Carbon Fuel Standards. The model also identifies project design features, regulatory measures, and mitigation measures to reduce GHG emissions, along with calculating the benefits achieved from the selected measures.

Construction GHG emissions are summarized in Table 5-2 [of the AQ & GHG Technical Report, **Table 3.6-3** in this Draft EIR]. A complete discussion and emission calculations are provided in Appendix B [of the AQ & GHG Technical Report, included in Appendix "A" of this document].[61]

Table 3.6-3
Construction Greenhouse Gas Emissions Summary[62]

GHG	Emissions (MT)			
	Compost Facility Phase 1[1]	Compost Facility Phase 2	Compost Facility Phase 3	Bioenergy Facility
CO_2	456	97	97	171
CH_4	0.1	0.02	0.02	0.0
N_2O	0.0	0.0	0.0	0.0
CO_2e	458	98	98	172

Note:
1. As noted elsewhere, the Project will be implemented in either three phases (Phase 1 at 100,000 TPY, Phases 2 and 3 each at 50,000 TPY), or in four phases (each phase at 50,000 TPY). Three phases are discussed herein, as construction impacts are higher if Phase 1 has 100,000 TPY capacity than if it has 50,000 TPY capacity.

Operational Mobile Source Emissions

"Emissions estimates have been prepared for the mobile sources required to operate the proposed composting and bioenergy facilities. The mobile sources include employee travel to and from the facility, support vehicle traffic, heavy equipment operation needed to move feedstock into the processing units, finished compost delivery vehicle traffic, and biochar delivery vehicle traffic. As noted elsewhere, because the compost and bioenergy facilities are co-located at the landfill, there will be no new emissions associated with feedstock transport to the compost or bioenergy facilities, so mobile source emissions associated with waste transport to the facility are not included in the Project emission inventory.

[61] Op. Cit.
[62] Op. Cit.

Emissions estimates have been prepared for on-road and off-road vehicle and equipment exhaust emissions. Operational mobile source emissions are summarized in Table 5-3 [of the AQ & GHG Technical Report, **Table 3.6-4** in this Draft EIR]. A complete discussion and emission calculations are provided in Appendix C [of the AQ & GHG Technical Report, included in Appendix “A” of this document].”[63]

Table 3.6-4
Summary of Mobile Source GHG Emissions[64]

Activity	**CO_2 (MT/yr.)**	**CH_4 (MT/yr.)**	**N_2O (MT/yr.)**	**CO_2e (MT/yr.)**
On-road Vehicle Exhaust	1,425	0.0	0.2	1,489
Off-road Equipment Exhaust	1,158	47	9	1,162
Total	2,583	47	9	2,651

Total Project GHG Emissions

“GHG emissions are summarized in Table 5-4 [of the AQ & GHG Technical Report, **Table 3.6-5** in this Draft EIR]. As shown, the proposed Project results in a net decrease in GHG emissions of over 10,700,000 MT CO_2e per year.”[65]

Table 3.6-5
GHG Emissions – Total Project[66]

Activity	**CO_2 (MT/yr)**	**CH_4 (MT/yr)**	**N_2O (MT/yr)**	**CO_2e (MT/yr)**
Construction (amortized over 30 years)	27	0.0	0.0	27
Mobile Sources	2,583	47	9	2651
Compost Facility	–	–	–	(17,378)
Bioenergy Facility	–	–	–	
Subtotal New Sources	*2,583*	*47*	*9*	*(14,700)*
Baseline – Landfill	–	–	–	(3,977)
Total	–	–	–	**(10,723)**

[63] Op. Cit. 5-15.
[64] Op. Cit.
[65] Op. Cit.
[66] Op. Cit.

"As shown in Table 5-4 [of the AQ & GHG Technical Report, **Table 3.6-5** in this Draft EIR], the estimated annual GHG emissions associated with proposed Project result in a net GHG reduction of over 10,700 MT CO_2e per year compared to BAU.

GHG emissions will also occur during construction activities associated with the proposed Project. Construction emissions are amortized over a 30-year life of the project. The construction emissions are small relative to the operating emission reductions, and when amortized over the life of the project, construction emissions reduce the overall Project benefit slightly, but the Project will still achieve a net GHG reduction of over 10,700 MT CO2e per year.

Neither the compost facility nor the bioenergy facility is expected to be subject to the Cap-and-Trade program. However, while Project emissions do not create a compliance obligation for the operators of the compost and bioenergy facilities under Cap-and-Trade, the emissions are covered by the Cap-and-Trade program in connection with the activities of other source categories, such as electricity generation and fuel suppliers.

The SJVAPCD's CEQA Cap-and-Trade Policy also recommends that projects that are required to comply with CARB's GHG Cap-and-Trade program be determined to have a less than cumulatively significant impact on global climate change. This policy is included in the SJVAPCD's December 2009 CEQA GHG policies (described above) and 2015 GAMAQI, which states that a project whose emissions have been reduced or mitigated consistent with AB 32 should be considered to have a less than significant impact on global climate change. (SJVAPCD 2015a).

This approach would include both the CARB's GHG Cap-and-Trade program and other adopted GHG-reducing regulations (such as AB 341 and SB 605) as adopted GHG emissions reduction plans. Under the SJVAPCD's tiered approach in assessing the significance of project-specific GHG emissions increases, projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the Project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions."[67]

"The proposed Project yields a net reduction in GHG emissions of over 10,700 MT per year. The reductions are achieved through landfill diversion, a key element of the State's GHG reduction strategy. These reductions far exceed the 29% reduction targeted by AB 32 and established by the SJVAPCD as a significance threshold. Further, AB 32's Cap-and-Trade program provides mitigation for the Project's vehicles (feedstock delivery, compost and biochar shipment, employee commute, off-road equipment) and electricity usage.

Since the proposed Project is consistent with AB 32, provides a net decrease in GHG emissions, and the emissions that do occur (e.g., electricity usage, fuel combustion in vehicles)

[67] Op. Cit 5-17 and 5-18.

are covered by the Cap-and-Trade program, the proposed Project will have no significant adverse impacts related to GHG emissions, and instead would provide a benefit."[68]

As discussed above, Project-related GHG emissions, generated either directly or indirectly, will not have a significant impact on the environment. As such, the proposed Project will result in ***Less Than Significant Project-specific Impacts*** related to this Checklist Item.

Cumulative Impact Analysis: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is the San Joaquin Valley Air Basin. As the proposed Project will result in Less Than Significant Project-specific Impacts, ***Less Than Significant Cumulative Impacts*** will also occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***Less Than Significant Impact***

The proposed Project will result in a ***Less Than Significant Project-specific and Cumulative Impact*** related to this Checklist Item.

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

Project Impact Analysis: ***Less Than Significant Impact***

As the proposed Project is located in an unincorporated area of Tulare County, the most applicable GHG plans are Executive Order S-3-05, AB 32, Executive Order B-30-15, SB 32, and the Tulare County CAP. The evaluation below assesses the Project's consistency with the CAP, and the potential for the Project to conflict with the recommended actions identified by ARB in its 2017 Climate Change Scoping Plan.

"Californians dispose of about 30 million tons of solid waste in landfills each year. Organic wastes decompose in landfills to produce methane, a powerful GHG. While landfills are an effective and relatively safe way to manage some waste, disposal-centric activities result in squandering valuable resources and generate LFG as well as other risks. A large fraction of the organics in the waste stream can be diverted from landfills to composting or digestion facilities to produce beneficial products."

In April 2015, Governor Edmund G. Brown Jr. issued an executive order to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. Reaching this emission reduction target will make it possible for California to reach its ultimate goal of reducing emissions 80 percent under 1990 levels by 2050, as identified in Executive Order S-

[68] Op. Cit. 5-18

3-05. Executive Order B-30-15 also specifically addresses the need for climate adaptation and directs state government to:

- Incorporate climate change impacts into the State's Five-Year Infrastructure Plan;
- Update the Safeguarding California Plan, the State climate adaption strategy to identify how climate change will affect California infrastructure and industry and what actions the State can take to reduce the risks posed by climate change;
- Factor climate change into State agencies' planning and investment decisions; and
- Implement measures under existing agency and departmental authority to reduce GHG emissions.

Executive Order B-30-15 required CARB to update the AB 32 Climate Change Scoping Plan to incorporate the 2030 target. Subsequently, SB 32, which codifies the Executive Order's 2030 emissions reduction target, was approved by the Governor on September 8, 2016. SB 32 requires CARB to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions to ensure that statewide GHG emissions are reduced to at least 40 percent below the 1990 statewide GHG emissions limit no later than December 31, 2030 (the target date established by Executive Order B-30-15). ARB adopted the 2017 Scoping Plan to achieve this goal.

AB 32 requires the California Air Resources Board to design and implement feasible and cost-effective emissions limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). Under AB 32, CalRecycle has the responsibility of developing recycling-based solutions aimed at reducing GHGs. CalRecycle's strategies include landfill methane control and capture; high recycling and zero waste; commercial recycling; composting and other organics products; liquified natural gas from landfill gas. AB 341 (Chapter 476, Statutes of 2011) set a goal of a 75 percent reduction in the amount of waste going to landfills by the year 2020, to be achieved through source reduction, recycling, and composting. AB 1826 (Chesbro, Chapter 727, Statutes of 2014) requires businesses to recycle their organic waste, depending on the amount of waste they generate per week. Cities and counties across the state must implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units. "SB 1383 (Lara, Chapter 395, Statutes of 2016) targets a 50 percent reduction of statewide organic waste disposal from the 2014 level by 2020, and a 75 percent reduction by 2025. [SB 1383] Grants CalRecycle regulatory authority to achieve the organic waste disposal reduction targets and establishes an additional target that not less than 20 percent of currently disposed edible food is recovered for human consumption by 2025."[69]

"In March 2017, CARB adopted the Short-Lived Climate Pollutant Reduction (SLCP) Strategy, establishing a path to decrease GHG emissions and displace fossil-based natural gas use. Strategies include avoiding landfill methane emissions by reducing the disposal of

[69] CalRecycle. Accessed April 2021 at: https://www.calrecycle.ca.gov/Climate/Organics/.

organics through edible food recovery, composting, in-vessel digestion, and other processes; and recovering methane from wastewater treatment facilities and manure methane at dairies and using the methane as a renewable source of natural gas to fuel vehicles or generate electricity. The proposed Project will support the goals of the SLCP Strategy by providing composting and bioenergy production as alternatives to landfilling of organic wastes in Tulare County.

The proposed Project will support compliance with SB 1383 (Lara, Chapter 395, Statutes of 2016). SB 1383 targets short-lived climate pollutants, including methane emissions due to organic waste disposal in landfills. SB 1383 requires the reduction in methane emissions at landfills by reducing landfill disposal of organic waste to 75% below 2014 levels by 2025, including establishing energy infrastructure development and procurement policies needed to encourage in-vessel digestion projects and increase the production and use of renewable gas. The proposed Project will support the goals of SB 1383 by providing composting and bioenergy production as alternatives to landfilling of organic wastes in Tulare County.

To further reduce landfilled solid waste, the legislature adopted AB 341 to achieve more significant waste reductions by setting a goal that 75% of solid waste generated be reduced, recycled, or composted by 2020, and by mandating commercial recycling. AB 1826 (Chesboro, Chapter 727, Statutes of 2014) added requirements regarding mandatory commercial organics recycling. The proposed Project will support the goals of AB 341 and AB 1826 by providing composting and bioenergy production as alternatives to landfilling organic wastes in Tulare County."[70]

The Tulare County CAP is a strategic planning document that identifies sources of GHG emissions within the County, presents current and future emissions estimates, identifies a GHG reduction target for future years, and presents strategic policies and actions to reduce emissions from the development project subject to CEQA. The GHG-reduction strategies in the Plan build key opportunities prioritized by County staff and members of the public.

To be consistent with the CAP, development projects less intense than a 500-unit subdivision or 100,000 square feet of retail or equivalent intensity for other uses can use the CAP consistency checklist. The checklist contains design features and measures that are used to determine consistency. The overarching CAP consistency requirements for all projects are outlined in **Table 3.6-6.**

[70] AQ & GHG Report. Page 5-18 and 5-19. See Appendix "A" of this Draft EIR.

Table 3.6-6 CEQA Project Requirements for Consistency with CAP	
Item	**Project Compliance?**
Project helps to meet the density goals from the Tulare Blueprint	N/A
Consistency with General Plan policies	Yes
Consistency with Rural Valley Land Plans or Foothill Growth Management Plan development criteria	Yes
Consistency with Urban Growth Boundary expansion criteria	N/A
Consistency for development within Rural Community Urban Development Boundaries (UDB) and Hamlet Development Boundaries HDB, and Legacy Development Boundaries (LDB)	N/A
Source: Tulare County 2018 Climate Action Plan, Page 73, Table 17	

The proposed Project will comply with all applicable General Plan policies intended to reduce GHG emissions. The Project site is in an unincorporated area of Tulare County approximately one (1) mile north City of Visalia and is covered by the Rural Valley Lands Plan (RVLP) of the 2030 General Plan (County of Tulare 2012). The Project is located within the boundaries of the existing Visalia Landfill site and does not conflict with the applicable policies of the RVLP. The existing and the projected GHG inventories in the General Plan and the CAP were derived based on the land use designations and associated densities defined in the County's General Plan. The Proposed Project is consistent with the land use designation and development density presented in the General Plan. As such, the Project would not conflict with the land use assumptions used by the County to develop the CAP.

The Air District's GHG Guidance for Land Use Agencies states that projects complying with an approved GHG emission reduction plan or GHG mitigation program would be determined to have a less than significant impact for GHG emissions. **Table 3.6-7** provides a checklist containing all applicable measures that will provide reductions necessary to achieve CAP consistency.

Table 3.6-7 CAP Consistency Checklist		
Checklist Question	**Consistency Method and Criteria**	**Consistency Assessment**
Non-Residential Projects		
Is the project consistent with applicable General Plan goals and policies listed in CAP?[1]	Review CAP General Plan policies to identify applicable policies. If not consistent, provide additional justification for approving the project in light of the inconsistency or revise the project or perform quantitative analysis.	Yes, the proposed Project is consistent with applicable General Plan goals and policies listed in the CAP. The proposed Project will also comply with all State requirements for reducing GHG emissions.
Is the project within a rural community plan or hamlet	If the project requires a plan amendment make findings on why the project is appropriate for the site and	Not applicable; the proposed Project is not within a community, hamlet, or legacy plan boundary.

Table 3.6-7
CAP Consistency Checklist

Checklist Question	Consistency Method and Criteria	Consistency Assessment
plan? If yes, is the project consistent with the plan?	will be consistent with plan goals and policies after approval of the amendment. Amendments for large non-residential projects (100,000 square feet of retail or projects generating 4,200 ADT or higher) in community plan or hamlets should perform a GHG analysis to identify best management practices including site design for walking and bicycling, energy efficiency and self-generation measures, and water conservation as part of the environmental review.	
Is the project an agriculture oriented commercial or industrial project in a rural area of the County?	If yes and the project is consistent with the General Plan, the project will comply with applicable State and local regulations. No further GHG review is required.	Not applicable; the proposed Project is not an agriculture-oriented project.
Is the project a general commercial or industrial project in a rural area of the County? If yes, is the project consistent with the General Plan?	If a plan amendment is required, perform a GHG analysis to identify best management practices including site design to encourage walking and bicycling, energy efficiency and self-generation measures, and water conservation as part of the environmental review. Sites in rural areas with no other development nearby would need to assess pedestrian measures; however, carpool and vanpool parking may be appropriate.	Not applicable; the proposed Project is not a commercial or industrial project. The Project will occur within the existing footprint of the Visalia Landfill.
Is the project required to construct a portion of a bicycle or pedestrian path that is part of an approved bicycle or mobility plan?	If yes, ensure that funding for construction of the project's fair share is included as a condition of approval.	Not applicable; the proposed Project is not a residential, commercial, or industrial development project. As such, itis not required that a bicycle or pedestrian path be constructed.
Is the development site appropriate for locating an improved TCAT transit stop?	Review TCAT transit maps to determine if project is on an existing line. For large projects consult with TCAG and TCAT to determine if project is on a planned route and is suitable for a future transit stop. Work with TCAG to identify a fair share contribution for the transit stop construction and reserve right of way if needed.	Not applicable; the proposed Project is not a residential, commercial, or industrial development project. As such, it will not result in an increase in persons sufficient to warrant TCAT transit service.

Table 3.6-7
CAP Consistency Checklist

Checklist Question	Consistency Method and Criteria	Consistency Assessment
Does the site plan have space set aside for recycling bins or compost collection?	Review site plan to determine if refuse collection area dimensions and location is consistent with County standards.	Not applicable; the proposed Project is not a residential, commercial, or industrial development project. One component of the Project includes composting with material supplied by current waste-stream haul trucks (e.g., green waste) that visit the Landfill daily regardless of the Project.
Does the site include shared EV charging stations per CalGreen requirements?	Review site plan and/or project description to determine if charger installations meet CalGreen requirements. Currently only conduits to future charger locations are required.	Not applicable; the proposed Project is not a residential, commercial, or industrial development project that would require an EV charging station.
Does the project comply with Tulare County Solar Roof Ordinance and/or Title 24 solar installation whichever is more stringent?	The project description should include the solar installation plans for the project. Compare installation plans to Solar Ordinance and Title 24 to determine if the project is in compliance.	Not applicable; the proposed Project is not a residential, commercial, or industrial development project.
Does the project include drought tolerant landscaping and Irrigation systems meeting County standards and the MWELO?	Ensure developers are aware of drought tolerant landscaping and Irrigation requirements from County standards and the MWELO. Include the requirement as a standard condition of approval or similar mechanism.	Not applicable. The proposed Project does not contain any decorative landscape area where it would be necessary to comply with County landscaping standards and the MWELO.
Does the project comply with Title 24 building energy efficiency, lighting, and interior water efficiency requirements?	Prior to issuing building permits, the County will review building plans to ensure Title 24 compliance.	Yes, the proposed Project is consistent with Title 24 requirements. The proposed office building will be required to comply with the current Title 24 energy efficiency standards.
Is the project required to comply with SJVAPCD Rule 9510 Indirect Source Review?	Review project description to determine if the project meets Rule 9510 applicability criteria. For example, 50 single family residential units or 2,000 square feet of retail development. Include Rule 9510 compliance as a condition of approval if applicable.	Not applicable; the proposed Project is subject to Air District New Source Review permitting regulations and therefore, does not require compliance with Indirect Source Review.
Does the project employ over 100 employees arriving for work during peak traffic hours?	Determine if the project has the potential to be a large employer. Include a standard condition of approval to inform the applicant that	Not applicable; the proposed Project would not employ 100 or more employees.

Table 3.6-7
CAP Consistency Checklist

Checklist Question	Consistency Method and Criteria	Consistency Assessment
	the project may be subject to Rule 9410 Employer Trip Reduction Plans.	
Projects Requiring Quantitative Analysis		
Is the project inconsistent with one or more checklist questions?	If the inconsistency would result in a potentially significantly increase GHG emissions, a quantitative analysis may be used to determine if emissions would exceed the threshold of significance for Tulare County.	Not applicable; the proposed Project is consistent with the General Plan and CAP and will comply with all Air District and CalRecycle rules and regulations. Project does not require quantitative assessment.
Does the project contain 500 or more residential units?	Residential projects of this magnitude are considered to be large projects requiring a quantitative GHG analysis to determine significance. This constitutes more than one year's average growth in County residential development and provides sufficient scale to fully integrate energy and water use efficiency, walkability, and infrastructure supporting multimodal transportation into the project. The threshold of significance is a 10 percent reduction from BAU by 2030 or per capita emissions of 4.12 $MTCO_2e$ per person in 2030.	Not applicable; proposed Project is not a residential development. Project does not require quantitative assessment.
Does the project contain 100,000 square feet or more of retail space.?	Shopping centers of this size would provide a large percentage of the retail services of any Tulare County rural community and could be constructed in a designated transportation corridor to serve a regional market. Shopping centers provide an opportunity to fully integrate energy and water use efficiency, walkability, and infrastructure supporting multimodal transportation into the project. The County threshold of significance for projects requiring quantification is a 10 percent reduction from BAU by 2030. Per capita thresholds are not applicable to retail, service, and industrial uses.	Not applicable; proposed Project is not a commercial development. Project does not require quantitative assessment.

Table 3.6-7
CAP Consistency Checklist

Checklist Question	Consistency Method and Criteria	Consistency Assessment
Does the project generate over 4,200 average daily trips?	Motor vehicles produce the largest share of GHG impacts from development projects and provide a surrogate to determine impacts from non-residential projects of many types. The approximate number of trips generated by 100,000 square feet of regional retail are 4,200 trips per day. Trip rates for other uses can be obtained from ITE Trip Generation Manual. An exception to this quantification threshold is neighborhood commercial uses with very high trip generation rates including fast food restaurants and convenience markets with gas pumps. These uses in rural communities often provide services not previously available to residents and required travel to neighboring cities. These uses have high rates of pass by trips and diverted link trips that occur on the way to another destination and are not considered new trips. Highway commercial uses also have high percentages of pass by trips and diverted link trips and are not expected be accessed by vehicles other than cars and trucks. Supermarkets have a high daily trip generation rate of 122 trips/ksf, so a 35,000 square foot supermarket would exceed the 4,200 trip per day quantification threshold.	The proposed Project does not generate over 4,200 average daily trips. The proposed Project does not include new vehicle trips; it merely changes the location of the trip ends. The proposed Project is consistent with the emission projections included in the General Plan and the CAP. However, Air District guidance indicates that emissions quantification is required for any project in which an EIR is prepared. As such, quantification is needed for informational purposes only.

1. The General Plan Policies listed on pages 83-84 and the policies are provided on pages 84-94 of the 2018 CAP. The policies are grouped into four categories as follows: Land Use and Transportation Strategies (includes Transit and Pedestrian Oriented and Traditional Neighborhood Design; Pedestrian and Bicycle Infrastructure; Transit Infrastructure and Support Policies and Measures; Transportation Management Programs; Building Energy Efficiency); Water Conservation Energy Savings; Solid Waste Reduction and Recycling; and Agricultural Programs and Initiatives.

Source: Tulare County CAP 2018 Update. Appendix C. CAP Consistency Checklist. Page 6-9.

As shown in **Table 3.6-7**, the Project is consistent with the applicable General Plan Policies.

The proposed Project includes would not increase the landfill's footprint and it would likely extend its lifetime capacity through diversion by inclusion of a composting facility. The Project would directly support the waste reduction requirements of AB 32 and AB 341 as green waste will be composted on-site rather than transported to an off-site composting facility. Therefore, the Project will provide an overall reduction of GHG emissions.

As noted in the AQ & GHG Technical Report, "By providing composting and bioenergy production as alternatives to landfilling of organic wastes in Tulare County, the proposed Project is consistent with applicable plans, policies, and regulations adopted for the purpose of reducing GHG emissions."[71] As such, ***Less Than Significant Project-specific Impacts*** related to this Checklist Item will occur.

Cumulative Impact Analysis: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is the San Joaquin Valley Air Basin. The Air District's GHG Guidance for Land Use Agencies states that projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions would be determined to have a less than significant individual and cumulative impact for GHG emissions. The proposed Project will continue to comply with all applicable CalRecycle and Air District rules and regulations. The proposed Project is consistent with the Tulare County General Plan and with the Tulare County CAP. As the proposed Project is consistent with aforementioned plans, policies, and regulations, ***Less Than Significant Cumulative Impacts*** related to this Checklist Item will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***Less Than Significant Impact***

As the proposed Project is consistent with aforementioned plans, policies, and regulations, ***Less Than Significant Project-specific and Cumulative Impacts*** related to this Checklist Item will occur.

DEFINITIONS AND/OR ACRONYMS

Definitions

Achieved-in-Practice - "Any equipment, technology, practice or operation available in the United States that has been installed and operated or used at stationary source site for a reasonable period of time sufficient to demonstrate that the equipment, technology, practice or operation is reliable when operated in a manner that is typical for the process. In determining whether equipment, technology, practice or operation is Achieved-in-Practice, the District will consider the extent to which grants, incentives or other financial subsidies influence the economic feasibility of its use."[72]

[71] Ibid. 5-19.

[72] San Joaquin Valley Air Pollution Control District Policy. Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as Lead Agency. Page 6.

Approved Alternate Technology - "Any District approved, Non-Achieved-in- Practice GHG emissions reduction measure equal to or exceeding the GHG emission reduction percentage for a specific BPS."[73]

Baseline - "The three year average (2002-2004) of GHG emissions for a type of equipment or operation within an identified class and category, expressed as annual GHG emissions per unit."[74]

Best Performance Standard - "For a specific Class and Category, the most effective, District approved, Achieved-In-Practice means of reducing or limiting GHG emissions from a GHG emissions source, which is also economically feasible per the definition of Achieved-in-Practice. BPS includes equipment type, equipment design, and operational and maintenance practices for the identified service, operation, or emissions unit class and category."[75]

Business-as-Usual - "The emissions for a type of equipment or operation within an identified class and category projected for the year 2020, assuming no change in GHG emissions per unit of activity as established for the baseline period."[76]

Category - "A District approved subdivision within a "class" as identified by unique operational or technical aspects."[77]

Class - "The broadest District approved division of stationary GHG sources based on fundamental type of equipment or industrial classification of the source operation."[78]

Global Warming - "Global warming is an increase in the temperature of the Earth's troposphere. Global warming has occurred in the past as a result of natural influences, but the term is most often used to refer to the warming predicted by computer models to occur as a result of increased emissions of greenhouse gases."[79]

Greenhouse Gas - "Greenhouse gas (GHG) emissions are the release of any gas that absorbs infrared radiation in the atmosphere. Generally when referenced in terms of global climate they are considered to be harmful. Greenhouse gases include, but are not limited to, water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrochlorofluorocarbons (HCFCs), ozone (O_3), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)."[80]

Operational Boundaries - "Operational boundaries are defined as "[t]he boundaries that determine the direct and indirect emissions associated with operations owned or controlled by the reporting company. This assessment allows a company to establish which operations and sources

[73] Ibid. 6
[74] Op. Cit. 7
[75] Op. Cit.
[76] Op. Cit.
[77] Op. Cit.
[78] Op. Cit.
[79] Tulare County General Plan 2030 Update. Background Report. Page 6-3.
[80] Ibid. Page 6-3.

cause direct and indirect emissions, and to decide which indirect emissions to include that are a consequence of its operations" (GHG Protocol, 2008)."[81]

Acronyms

AB	Assembly Bill (in California)
AIR DISTRICT	San Joaquin Valley Air Pollution Control District
AQ	Air Quality
BAU	Business As Usual
BPS	Best Performance Standards
CAA	Clean Air Act
Cal EPA	California Environmental Protection Agency
CARB or ARB	California Air Resources Board
CEQA	California Environmental Quality Act
CH_4	Methane
CO_2	Carbon Dioxide
DEIR	Draft Environmental Impact Report
EIR	Environmental Impact Report
ERM	Environmental Resources Management
GHG	Greenhouse Gases
HFCs	Hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
MRF/TS	Material Recovery Facility/Transfer Station
MSW	Municipal Solid Waste
N_2O	Nitrous Oxide
OPR	Governor's Office of Planning and Research
PFCs	Perfluorocarbons
SB	Senate Bill (in California)
SF_6	Sulfur Hexafluoride
UNFCCC	United Nations Framework Convention on Climate Change
VMT	Vehicle Miles Travelled
WMO	World Meteorological Organization

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[81] Op. Cit. 6-29.

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Chapter 3.7
Hydrology and Water Quality

SUMMARY OF FINDINGS

The proposed Project will result in a ***Less Than Significant Impact*** related to Hydrology and Water Quality. A detailed review of potential impacts is provided in the following analysis.

INTRODUCTION

California Environmental Quality Act (CEQA) Requirements

This section of the draft EIR addresses potential impacts to Hydrology and Water Quality. As required in Section 15126, all phases of the proposed Project will be considered as part of the potential environmental impact.

As noted in 15126.2 (a), "[a]n EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area, as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected. For example, an EIR on a subdivision astride an active fault line should identify as a significant effect the seismic hazard to future occupants of the subdivision. The subdivision would have the effect of attracting people to the location and exposing them to the hazards found there. Similarly, the EIR should evaluate any potentially significant impacts of locating development in other areas susceptible to hazardous conditions (e.g., floodplains, coastlines, wildfire risk areas) as identified in authoritative hazard maps, risk assessments or in land use plans addressing such hazards areas."[1]

The environmental setting provides a description of the Hydrology and Water Quality in the County. The regulatory setting provides a description of applicable Federal, State and Local regulatory policies that were developed in part from information contained in the Tulare

[1] CEQA Guidelines. Section 15126.2 (a).

County 2030 General Plan, Tulare County General Plan Background Report and/or Tulare County General Plan Revised DEIR incorporated by reference and summarized below. Additional documents utilized are noted as appropriate. A description of the potential impacts of the proposed Project is provided and includes the identification of feasible mitigation measures (if necessary and feasible) to avoid or lessen the impacts.

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA checklist item questions. The following are potential thresholds for significance:

- Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.
- Project will substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
- Project will 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, substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, in a manner which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- Project in flood hazard, tsunami, seiche zones, risk release of pollutants due to project inundation.

ENVIRONMENTAL SETTING

"The Tulare Lake Hydrologic Region covers approximately 10.9 million acres (17,050 square miles) and includes all of Kings and Tulare counties and most of Fresno and Kern counties... The southern portion of the San Joaquin Valley is subdivided into two separate basins, the San Joaquin and the Tulare, by a rise in the valley floor resulting from an accumulation of alluvium between the San Joaquin River and the Kings River fan. The valley floor in this region had been a complex series of interconnecting natural sloughs, canals, and marshes.

The economic development of the region is closely linked to the surface water and groundwater resources of the Tulare Lake region. Major rivers draining into the Tulare Lake region include the Kings, Kaweah, Tule, and Kern rivers. The original ecological character of the area has been changed dramatically, largely from the taming of local rivers for farming. In the southern portion of the region, significant geographic features include the lakebeds of the former Buena Vista/ Kern and Tulare lakes, comprising the southern half of the region; the Coast Ranges to the west; the Tehachapi Mountains to the south; and the southern Sierra Nevada to the east. The Tulare Lake region is one of the nation's leading agricultural production areas, growing a wide variety of crops on about 3 million irrigated acres. Agricultural production has been a mainstay of the region since the late 1800s. However, since the mid-1980s, other economic sectors, particularly the service sector, have been growing."[2]

The Tulare Lake Hydrologic Region has watershed areas (surface water) and groundwater sub-basin areas are shown in **Figure 3.7-1; Figure 3.7-2** shows the Tulare Lake Hydrologic Region.

Watershed (Surface Water)

"The Tulare Lake region is divided into several main hydrologic subareas: the alluvial fans from the Sierra foothills and the basin subarea (in the vicinity of the Kings, Kaweah, and Tule rivers and their distributaries); the Tulare Lake bed; and the southwestern uplands. The alluvial fan/basin subarea is characterized by southwest to south flowing rivers, creeks, and irrigation canal systems that convey surface water originating from the Sierra Nevada. The dominant hydrologic features in the alluvial fan/basin subarea are the Kings, Kaweah, Tule, and Kern rivers and their major distributaries from the western flanks of the Sierra."[4] "The Kaweah River begins in Sequoia National Park, flows west and southwest, and is impounded by Terminus Dam. It subsequently spreads into many distributaries around Visalia and Tulare trending toward Tulare Lake."[3]

"Groundwater Aquifers and Wells

Groundwater resources in the Tulare Lake region are supplied by both alluvial and fractured rock aquifers. Alluvial aquifers are composed of sand and gravel or finer grained sediments, with groundwater stored within the voids, or pore space, between the alluvial sediments. Fractured-rock aquifers consist of impermeable granitic, metamorphic, volcanic, and hard sedimentary rocks, with groundwater being stored within cracks, fractures, or other void spaces. The distribution and extent of alluvial and fractured-rock aquifers and water wells vary significantly within the region. A brief description of the aquifers for the region is provided below.

[2] State of California Department of Water Resources. "*California Water Plan Update 2013, Tulare Lake Hydrologic Region"*. Page TL-11.
[3] Ibid.

Figure 3.7-1 – Groundwater Basins and Sub-basins Within the Tulare Lake Hydrologic Region

Figure 3.7-2
Tulare Lake Hydrologic Region

Alluvial Aquifers

The Tulare Lake Hydrologic Region contains 12 groundwater basins and 7 subbasins recognized in California Department of Water Resources (DWR) *Bulletin 18-2003* (California Department of Water Resources 2003) and underlie approximately 8,400 square miles, or about 50 percent of the region. The majority of the groundwater in the region is stored in alluvial aquifers. Figure TL-3 [of the California Water Plan Update 2013] shows the location of the alluvial groundwater basins and subbasins and Table TL-1 [of the California Water Plan Update 2013] lists the associated names and numbers. Pumping from the alluvial aquifers in the region accounts for about 38 percent of California's total average annual groundwater extraction. The most heavily used groundwater basins in the region include Kings, Westside, Kaweah, Tulare Lake, Tule, and Kern County. These basins account for approximately 98 percent of the average 6.3 million acre- feet (maf) of groundwater pumped annually during the 2005-2010 period. Groundwater wells in the San Joaquin Valley extend to depths of more than 1,000 feet (Page 1986). Based on a series of irrigation pump tests, groundwater pumping rates in the various subbasins were determined to range from about 650 gallons per minute (gpm) to about 1,650 gpm (Burt 2011)."[4]

Fractured-Rock Aquifers

Fractured-rock aquifers are generally found in the mountain and foothill areas adjacent to alluvial groundwater basins; as such, fractured-rock aquifers would not be found on the Valley floor nor within the Project site/location.

Surface Water Quality

"Surface water quality in the Basin is generally good, with excellent quality exhibited by most eastside streams. The Regional Water Board intends to maintain this quality."[5] Specific objectives outlined in the Water Quality Control Plan are listed below: [6]

- **Ammonia:** Waters shall not contain un-ionized ammonia in amounts which adversely affect beneficial uses. In no case shall the discharge of wastes cause concentrations of un-ionized ammonia (NH3) to exceed 0.025 mg/l (as N) in receiving waters.
- **Bacteria:** In waters designated REC-1, the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml.
- **Biostimulatory Substances:** Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

[4] Op. Cit. 13.

[5] State of California Department of Water Resources. *"Water Quality Control Plan for the Tulare Lake Basin"*. Third Edition. May 2018. Page 3-9. Accessed August 2021 at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/California-Water-Plan/Docs/Update2013/Regional-Reports/Water-Plan-Update-2013-Tulare-Lake-Regional-Report.pdf

[6] Ibid. 3-2 to 3-7.

- **Chemical Constituents:** Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses.
- **Color:** Waters shall be free of discoloration that causes nuisance or adversely affects beneficial uses.
- **Dissolved Oxygen:** Waste discharges shall not cause the monthly median dissolved oxygen concentrations (DO) in the main water mass (at centroid of flow) of streams and above the thermocline in lakes to fall below 85 percent of saturation concentration, and the 95 percentile concentration to fall below 75 percent of saturation concentration.
- **Floating Material:** Waters shall not contain floating material, including but not limited to solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.
- **Oil and Grease:** Waters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
- **pH:** The pH of water shall not be depressed below 6.5, raised above 8.3, or changed at any time more than 0.3 units from normal ambient pH.
- **Pesticides:** Waters shall not contain pesticides in concentrations that adversely affect beneficial uses.
- **Radioactivity:** Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life nor which result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life
- **Salinity:** Waters shall be maintained as close to natural concentrations of dissolved matter as is reasonable considering careful use of the water resources.
- **Sediment:** The suspended sediment load and suspended sediment discharge rate of waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
- **Settleable Material:** Waters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
- **Tastes and Odors:** Waters shall not contain taste- or odor-producing substances in concentrations that cause nuisance, adversely affect beneficial uses, or impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to domestic or municipal water supplies.
- **Temperature:** Natural temperatures of waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses.
- **Toxicity:** All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
- **Turbidity:** Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses.

Specific water quality objectives for ground waters outlined in the Water Quality Control Plan are summarized as follows: [7]

- **Bacteria:** In ground waters designated MUN, the concentration of total coliform organisms over any 7-day period shall be less than 2.2/100 ml.
- **Chemical Constituents:** Ground waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses.
- **Pesticides:** No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses.
- **Radioactivity:** Radionuclides shall not be present in ground waters in concentrations that are deleterious to human, plant, animal, or aquatic life, or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal or aquatic life.
- **Salinity:** All ground waters shall be maintained as close to natural concentrations of dissolved matter as is reasonable considering careful use and management of water resources.
- **Tastes and Odors:** Ground waters shall not contain taste- or odor producing substances in concentrations that cause nuisance or adversely affect beneficial uses.
- **Toxicity:** Ground waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial use(s)."[8]

According to the "*California Water Plan Update 2013, Tulare Lake Hydrologic Region"*, "Generally, the quality and the beneficial uses of the deep groundwaters remain the same as before humans entered the valley. A few areas within the Tulare Lake Basin have groundwaters that are naturally unusable or of marginal quality for certain beneficial uses. (Central Valley Regional Water Quality Control Board 2004) However, anthropogenic sources have impacted many of the shallower zones. Groundwater in the shallower part of the aquifer generally contains higher concentrations of anthropogenic contaminants, such as nitrates and pesticides, than the deeper part of the aquifer. The shallower part of the aquifer is generally younger water that indicates more recently recharged water. So, shallower wells, such as domestic supply wells, may provide better indication of pollutants from current land use activities. Pollutants from current land use activities may eventually impact deeper wells such as public supply wells (Burow et al. 2008). The following are the contaminants of concern in groundwater for this region:

- Salinity (Central Valley Regional Water Quality Control Board 2004).
- Nitrate (Dubrovsky et al. 1998, Burow et al. 2008, Center for Watershed Sciences 2012).

[7] Ibid. 3-10 through 3-12.

[8] California Regional Water Quality Control Board Central Valley Region. *"Water Quality Control Plan for the Tulare Lake Basin Second Edition"*. Revised January 2015 (with Approved Amendments). Pages III-7 through III-9. Accessed August 2021 at: https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/tlbp_201501.pdf.

- DBCP (1,2-dibromo-3-chloropropane) (Dubrovsky et al. 1998, Burow et al. 2008, State Water Resources Control Board 2013).
- Arsenic (State Water Resources Control Board 2013).
- Gross Alpha Particle Activity and Uranium (State Water Resources Control Board 2013).
- Chromium 6 (State Water Resources Control Board 2011b).
- Localized contamination by (State Water Resources Control Board 2013):
  - Organic Compounds (Benzene, tetrachloroethylene (PCE), trichloroethylene (TCE), and perchlorate).
  - Fluoride"[9]

As discussed in the "*California Water Plan Update 2013, Tulare Lake Hydrologic Region"(2013 CA Water Plan)* , the key ground water quality issues include the following.

Salinity: "Degradation of groundwater in the Tulare Lake Basin by salts is unavoidable without a plan for removing salts from the basin. Some of the salt load to the groundwater resource is primarily the result of natural processes within the basin, but some also occurs due to water imported from other basins to supply agricultural irrigation water. Natural processes include salt loads leached from the soils by precipitation, valley floor runoff, and native surface waters. Salts that are not indigenous to the basin water resources results from human activity. Salts come from imported water, soil leached by irrigation, animal wastes, fertilizers, and other soil amendments, municipal use, industrial wastewaters, and oil field wastewaters. These salt sources, all contributors to salinity increases, should be managed to the extent practicable to reduce the rate of ground water degradation. (Central Valley Regional Water Quality Control Board 2004)."[10]

Nitrates: "In a 1998 USGS study, nitrate concentrations in 24 percent (21 of 88) of the domestic wells sampled during 1993-1995 in the regional aquifer survey and land-use studies of the eastern San Joaquin Valley exceeded the drinking-water standard of 10 mg/L established by the EPA. A subsequent USGS study found that concentrations of nitrate and pesticides in the shallow part of the aquifer system at depths of domestic wells in the study area have increased over time due to continued contributions of nitrates and current use pesticides in the recharge water. Also, concentrations of nitrates and pesticides in the shallow part of the aquifer are likely to move to deeper parts of the groundwater flow system (Burow et al. 2008). The recent University of California, Davis report also found that travel times of nitrates from source to wells range from a few years to decades in domestic wells, and from years to many decades and even centuries in deeper production wells. While the quality of the shallower part of the aquifer is the result of past land use activities, the soil profile contains a stockpile of these contaminants that will continue to recharge the shallow aquifer and cause migration of

[9] State of California Department of Water Resources. "*California Water Plan Update 2009, Tulare Lake Hydrologic Region*". Page TL-60 and TL-61. Accessed August 2021 at https://water.ca.gov/Programs/California-Water-Plan/Water-Plan-Updates, then access zip file "v3_tularelake_cwp2009.pdf".

[10] Ibid. 61.

contaminants to the deeper aquifer. Human generated nitrate sources to groundwater include nitrogen applied to croplands, percolation of wastewater treatment plant and food processing wastes, leachate from septic system drain fields, urban parks, lawns, golf courses, leaky sewer systems, recharge from animal corrals and manure storage lagoons, and downward migration of nitrate-contaminated water via wells. Agricultural fertilizers and animal wastes applied to cropland are by far the largest regional sources of nitrate in groundwater; although, other sources can be locally relevant (Center for Watershed Sciences 2012)."[11]

DBCP: "Concentrations of DBCP, a soil fumigant banned since 1977, exceeded the EPA drinking-water standard of 0.2 mg/L in 18 of the 88 (or 20 percent) domestic wells sampled during 1993-1995 (Dubrovsky et al. 1998). DBCP concentrations were above the drinking-water standard in 16 of 50 (or 32 percent) of domestic wells samples in orchards and vineyards from 2001-2002 (Burow et al. 2008)."[12]

Arsenic: "Public supply wells with levels of arsenic in the raw and untreated water that exceed the maximum contaminant level (MCL) were found in the south and western part of the Tulare Lake. Arsenic is generally considered to be naturally occurring (State Water Resources Control Board 2013). Arsenic has been linked to cancer of the bladder, lungs, skin, kidney, nasal passages, liver, and prostate (U.S. Environmental Protection Agency 2012a)."[13]

Gross Alpha Particle Activity and Uranium: "Gross alpha particle activity and uranium were found in raw and untreated water for many of the public water systems in the Tulare Lake Basin. These radionuclides are typically naturally occurring but are a concern because of the potential for health effects (State Water Resources Control Board 2013)."[14]

Chromium 6: "Chromium is a metal found in natural deposits of ores containing other elements, mostly as chrome-iron ore. It is also widely present in soil and plants. Recent sampling of drinking water throughout California suggests that hexavalent chromium may occur naturally in groundwater at many locations. Chromium may also enter the environment from human uses. Chromium is used in metal alloys such as stainless steel, protective coatings on metal, magnetic tapes, pigments for paints, cement, paper, rubber, composition floor covering, etc. Elevated levels (above the detection limit of 1 μg/L) of hexavalent chromium have been detected in many active and standby public supply wells along the west or valley floor portion of the Central Valley (State Water Resources Control Board 2011b)."[15]

Localized Contamination: Organic Compounds (Benzene, tetrachloroethylene (PCE), trichloroethylene (TCE), and perchlorate) **and Flouride:** "Benzene, perchlorate, PCE, and TCE have been detected at levels exceeding MCLs in the source water of a few water systems in the Tulare Lake region. Benzene was found in public supply wells in Arvin and Kettleman City. Perchlorate was found in wells in Tehachapi, Stallion Springs, East Tulare, and Exeter.

[11] Op. Cit. 61.
[12] Op. Cit. 62.
[13] Op. Cit.
[14] Op. Cit.
[15] Op. Cit.

PCE was found in public supply wells in the Fresno metropolitan area, Sanger, Arvin, Golden Hills, Oildale, Bakersfield, and Goshen areas. TCE was found in the Fresno and Bakersfield metropolitan areas (State Water Resources Control Board 2013). Benzene and perchlorate occur in the environment both naturally and due to human-made sources. PCE was the main solvent used for dry cleaning. Its occurrence in the environment is also associated with textile operations and metal degreasing operations. TCE is most associated with metal degreasing operations.

Fluoride was found at levels exceeding MCLs in raw and untreated water in the Sierra and San Emigdio Mountains areas of Kern County (State Water Resources Control Board 2013). While fluoride is added to public drinking water supplies as a public health measure for reducing cavities among the treated population, it can also occur naturally as a result of the geological composition of soils and bedrock (U.S. Environmental Protection Agency 2011)."[16]

Surface Water Supply

"Surface water supplies for the Tulare Lake Basin include developed supplies from the Central Valley Project (CVP), the State Water Project (SWP), rivers, and local projects. Surface water also includes the supplies for required environmental flows. Required environmental flows are comprised of undeveloped supplies designated for wild and scenic rivers, supplies used for instream flow requirements, and supplies used for Bay-Delta water quality and outflow requirements. Finally, surface water includes supplies available for reapplication downstream. Urban wastewater discharges and agricultural return flows, if beneficially used downstream, are examples of reapplied surface water."[17]

"Along the eastern edge of the valley, the Friant-Kern Canal is used to divert San Joaquin River water from Millerton Lake for delivery to agencies extending into Kern County. All of the Tulare Lake region's streams are diverted for irrigation or other purposes, except in the wettest years. Historically, they drained into Tulare Lake, Kern Lake, or adjacent Buena Vista Lake. The latter ultimately drained to Tulare Lake, which is about 30 feet lower in elevation."[18]

"The Kings, Kaweah, Tule, and Kern Rivers, which drain the west face of the Sierra Nevada Mountains, are of excellent quality and provide the bulk of the surface water supply native to the Basin. Imported surface supplies, which are also of good quality, enter the Basin through the San Luis Canal/California Aqueduct System, Friant-Kern Canal, and the Delta- Mendota Canal. Adequate control to protect the quality of these resources is essential, as imported surface water supplies contribute nearly half the increase of salts occurring within the Basin."[19]

Groundwater Supply

[16] Op. Cit.
[17] Tulare County General Plan 2030 Update, Background Report. Page 10-7.
[18] State of California Department of Water Resources. *"California Water Plan Update 2009, Tulare Lake Hydrologic Region"*. Page TL-5.
[19] California Regional Water Quality Control Board Central Valley Region. *"Water Quality Control Plan for the Tulare Lake Basin"*. May 2018. Page 1-2.

"Surface water supplies tributary to or imported for use within the Basin are inadequate to support the present level of agricultural and other development. Therefore, ground water resources within the valley are being mined to provide additional water to supply demands."[20]

"Groundwater in Tulare County occurs in an unconfined state throughout, and in a confined state beneath its western portion. Extensive alluvial fans associated with the Kings, Kaweah, and Tule Rivers provide highly permeable areas in which groundwater in the unconfined aquifer system is readily replenished. Interfan areas between the streams contain less permeable surface soils and subsurface deposits, impeding groundwater recharge and causing well yields to be relatively low. The mineral quality of groundwater in Tulare County is generally satisfactory for all uses."[21] "Groundwater recharge is primarily from natural streams, other water added to streambeds, from deep percolation of applied irrigation water, and from impoundment of surface water in developed water bank/percolation ponds."[22]

"The Tulare Lake region has experienced water-short conditions for more than 100 years, which has resulted in a water industry that has consciously developed—through careful planning, management and facility design—the possibility of a shortage occurring in any year. Water demand is more or less controlled by available, reliable long-term water supplies. Over the years, agricultural acreage has risen and dropped largely based on water supplies. The region initially developed with surface water supplies; but local water users learned these supplies could widely vary in volume from year to year and drought conditions could quickly develop. The introduction of deep well turbines resulted in a dramatic rise in groundwater use in the early 1900s, subsequently resulting in dropping groundwater levels and land subsidence. Surface water storage and conveyance systems built to alleviate the overuse of groundwater provided an impounded supply of water that could be used during years with deficient surface water. This resulted in a regional reliance on conjunctive water use in the development of the local water economy. Efforts to address Delta environmental issues and the subsequent loss of surface water to the region is increasing groundwater use and creating concern that additional pumping will increase subsidence."[23]

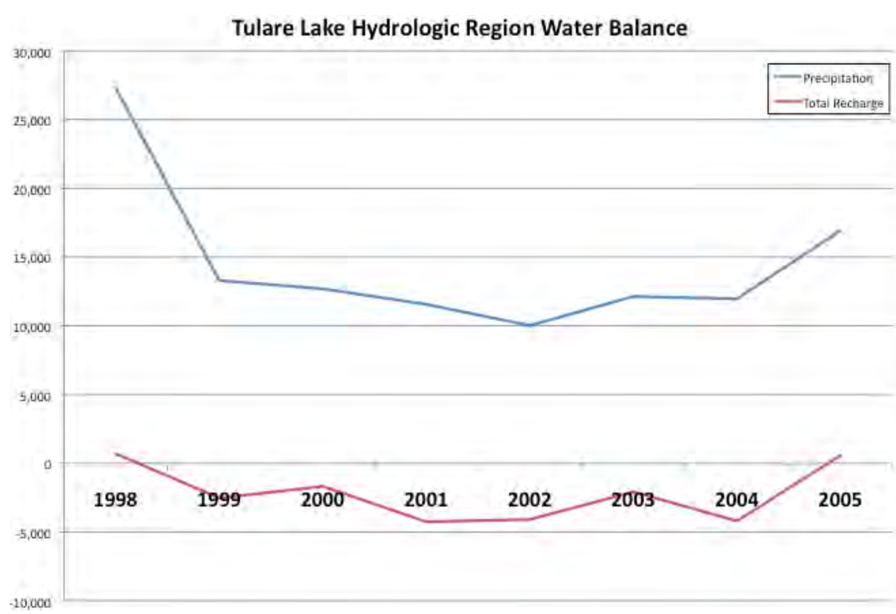
According to the *2009 California Water Plan*, water storage has fluctuated between 2003 and 2010. The data suggests that variations occur as a result of changing precipitation levels; see **Table 3.7-1** and **Figure 3.7-3**.

[20] Ibid.
[21] Tulare County General Plan 2030 Update Background Report. Page 10-11.
[22] State of California Department of Water Resources. *"California Water Plan Update 2009, Tulare Lake Hydrologic Region"*. Page TL-17.
[23] Ibid. TL-19.

Table 3.7-1
Tulare Lake Hydrologic Water Balance for 2003-2010 (thousand acre-feet)[24]

Tulare Lake Region	Water Year							
	2003	2004	2005	2006	2007	2008	2009	2010
Water Entering the Region								
Precipitation	12,137	11,964	19,939	17,135	7,031	10,724	9,945	16,185
Inflow from Oregon/Mexico	0	0	0	0	0	0	0	0
Inflow from Colorado River	0	0	0	0	0	0	0	0
Imports from Other Regions	3,696	4,239	5,174	5,944	4,434	2,797	2,704	4,456
Total	**17,311**	**16,780**	**22,848**	**23,079**	**11,465**	**13,521**	**12,649**	**20,641**
Water Leaving the Region								
Consumptive Use of Applied Water	7,667	8,221	6,953	7,376	8,214	8,592	8,684	7,668
Outflow to Oregon/Nevada/Mexico	0	0	0	0	0	0	0	0
Exports to Other Regions	1,898	1,961	1,724	2,269	2,053	1,215	1,204	1,502
Statutory Required Outflow to Salt Sink	0	0	0	0	0	0	0	0
Additional Outflow to Salt Sink	458	457	300	468	456	514	456	456
Evaporation, Evapotranspiration of Native Vegetation, Groundwater Subsurface Outflows, Natural and Incidental Runoff, Ag Effective Precipitation & Other Outflows	10,090	10,342	13,297	13,241	5,303	8,528	7,667	13,095
Total	**20,113**	**20,981**	**22,274**	**23,350**	**16,026**	**18,849**	**18,011**	**22,721**
Storage Changes in Region: [+] Water added to storage, [-] Water removed from storage								
Change in Surface Reservoir Storage	173	-199	680	-108	-473	-59	101	259
Change in Groundwater Storage	-2975	-4,002	-106	163	-4,088	5,269	5,463	2,339
Total	**-2,802**	**-4,201**	**574**	**-4,256**	**-4,088**	**-5,329**	**-5,362**	**-2,080**

Figure 3.7-3



[24] State of California Department of Water Resources. "*California Water Plan Update 2013, Tulare Lake Hydrologic Region*". TL-54.

Groundwater overdraft is expected to decline statewide by 2020. The reduction in irrigated acreage in drainage problem areas on the west side of the San Joaquin Valley is expected to reduce groundwater demands in the Tulare Lake region by 2020."[25] According to the 2009 California Water Plan Update, it is anticipated that there will be a 550,000 acre-feet reduction in the water demand in the Tulare Lake Hydrologic Area under Current Growth trends. Slow & Strategic Growth trends may further decrease water demand, while Expansive Growth trends may increase water demand.

"There are 19 entities in Tulare County with active programs of groundwater management. These management programs include nearly all types of direct recharge of surface water. Groundwater recovery is accomplished primarily through privately owned wells. Among the larger programs of groundwater management are those administered by the Kaweah Delta Water Conservation District, the Kings River Water Conservation District, the Tulare Irrigation District, the Lower Tule Water Users Association, and the Alta Irrigation District, utilizing water from the Friant-Kern Canal and local streams. The Kings River Water Conservation District covers the western county."[26] **Table 3.7-2** lists irrigation districts in Tulare County water supply sources.

Table 3.7-2
Irrigation Districts in Tulare County[27]

Entity	Surface Water	Imported Water Source	Groundwater Extraction
Alpaugh Irrigation District	NA	Friant-Kern Canal (1,000af average)	19,000 af
Alta Irrigation District	Kings River	Friant-Kern Canal (surplus)	230,000 af
Delano-Earlimart Irrigation District	NA	Friant-Kern Canal (146,050 af average)	8,000 af
Exeter Irrigation District	NA	Friant-Kern Canal (1,000 af average)	14,000 af
Hills Valley Irrigation District	NA	Cross Valley Canal (2,000 af average)	1,000 af
Ivanhoe Irrigation District	Kaweah River	Friant-Kern Canal (11,650 af average)	15,000 af
Kaweah Delta Water Cons. District	Kaweah River	Friant-Kern Canal (24,000 af average)	130,000 af
Kern-Tulare Water District	Kern River	Cross Valley Canal (41,000 af average)	33,000 af
Lindmore Irrigation District	NA	Friant-Kern Canal (44,000 af average)	28,000 af
Lower Tule River Irrigation Dist.	Tule River	Friant-Kern Canal (180,200 af average) Cross Valley Canal (31,000 af average)	NA
Lindsay-Strathmore Irrigation Dist.	NA	Friant-Kern Canal (24,150 af average)	NA
Orange Cove Irrigation District	NA	Friant-Kern Canal (39,200 af average)	30,000 af
Pioneer Water Irrigation District	Tule River		3,000 af
Pixley Irrigation District	NA	Friant-Kern Canal (1,700 af average) Cross Valley Canal (31,000 af average)	130,000 af
Porterville Irrigation District	Tule River	Friant-Kern Canal (31,000 af average)	15,000 af
Rag Gulch Water District	Kern River	Friant-Kern Canal (3,700 af average) Cross Valley Canal (13,300 af average)	
Saucelito Irrigation District	Tule River	Friant-Kern Canal (37,600 af average)	15,000 af
Stone Corral Irrigation District	NA	Friant-Kern Canal (10,000 af average)	5,000 af
Teapot Dome Irrigation District	NA	Friant-Kern Canal (5,600 af average)	
Terra Bella Irrigation District	NA	Friant-Kern Canal (29,000 af average)	2,000 af
Tulare Irrigation District	Kaweah River	Friant-Kern Canal (100,500 af average)	65,000 af

[25] State of California Department of Water Resources. "*California Water Plan Update 2009, Tulare Lake Hydrologic Region*". Page TL-54.
[26] Ibid. 10-12.
[27] Bookman-Edmonston Engineering Inc. Water Resources Management in the Southern San Joaquin Valley, Table A-1.

Irrigation Districts in Tulare County

The Tulare County Resource Management Agency maintains a list of special districts that provide sewer and/or water service that cannot currently meet the demand of new development projects. **Table 3.7-3** indicates that following water and/or sewer districts are either under a temporary cease and desist order by the Regional Water Control Board prohibiting any new connections, or have other limitations for water and sewer connections.

Table 3.7-3
Water and/or Sewer Districts With Limitations in Tulare County[28]

Alpaugh Joint Powers Authority Water District	Richgrove Public Utility District
Cutler Public Utility District	Seville Zone of Benefit (County RMA)
Delft Colony Zone of Benefit (County RMA)	Seville Water Company
Earlimart Public Utility District	Springville Public Utility District
El Rancho Zone of Benefit (County RMA)	Tooleville Zone of Benefit (County RMA)
Orosi Public Utility District	Traver Zone of Benefit (County RMA)
Pixley Public Utility District	Wells Tract Zone of Benefit (County RMA)
Pratt Mutual Water Company	
Source: Tulare County RMA.	

Flooding

"Flooding is a natural occurrence in the Central Valley because it is a natural drainage basin for thousands of watershed acres of Sierra Nevada and Coast Range foothills and mountains. Two kinds of flooding can occur in the Central Valley: general rainfall floods occurring in the late fall and winter in the foothills and on the valley floor; and snowmelt floods occurring in the late spring and early summer. Most floods are produced by extended periods of precipitation during the winter months. Floods can also occur when large amounts of water (due to snowmelt) enter storage reservoirs, causing an increase in the amount of water that is released."[29]

"Floods in the Tulare Lake Hydrologic Region can be caused by heavy rainfall; by dams, levees, or other engineered structures failing; or by extreme wet-weather patterns. Historically, in the Tulare Lake region flooding originates principally from melting of the Sierra snowpack and from rainfall. Flooding from snowmelt typically occurs in the spring and has a lengthy runoff period. Flooding in the region was intermittent, with severe flooding some years and drought in other years. Flash and slow-rise flooding are the most commonly experienced types of flooding in this hydrologic region. Floods that occur in the Tulare Lake region take a variety of forms and can be classified into flash, alluvial fan, debris flow, stormwater, slow-rise, and engineered structure failure flooding. For a complete record of floods, refer *California Flood Future Report, Attachment C: Flood history of California* technical memorandum (California Department of Water Resources and the U.S. Army Corps of Engineers 2013a)."[30]

[28] State of California Department of Water Resources. "*California Water Plan Update 2009, Tulare Lake*". Page TL-17.
[29] Tulare County General Plan 2030 Update Background Report. Page 8-13.
[30] State of California Department of Water Resources. "*California Water Plan Update 2009, Tulare Lake Hydrologic Region*". Page TL-30.

"Official floodplain maps are maintained by the Federal Emergency Management Agency (FEMA). FEMA determines areas subject to flood hazards and designates these areas by relative risk of flooding on a map for each community, known as the Flood Insurance Rate Map (FIRM). A 100-year flood is considered for purposes of land use planning and protection of property and human safety. The boundaries of the 100-year floodplain are delineated by FEMA on the basis of hydrology, topography, and modeling of flow during predicted rainstorms."[31]

"The flood carrying capacity in rivers and streams has decreased as trees, vegetation, and structures (e.g., bridges, trestles, buildings) have increased along the Kaweah, Kings, and Tule Rivers. Unsecured and uprooted material can be carried down a river, clogging channels and piling up against trestles and bridge abutments that can, in turn, give way or collapse, increasing blockage and flooding potential. Flooding can force waters out of the river channel and above its ordinary floodplain. Confined floodplains can result in significantly higher water elevations and higher flow rates during high runoff and flood events."[32]

"Dam failure can result from numerous natural or human activities, such as earthquakes, erosion, improper siting, rapidly rising flood waters, and structural and design flaws. Flooding due to dam failure can cause loss of life, damage to property, and other ensuing hazards. Damage to electric-generating facilities and transmission lines associated with hydro-electric dams could also affect life support systems in communities outside the immediate hazard area."[33]

REGULATORY SETTING

Federal Agencies & Regulations

Clean Water Act/NPDES

"The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. "Clean Water Act" became the Act's common name with amendments in 1972… Under the CWA, EPA has implemented pollution control programs such as setting wastewater standards for industry. We have also set water quality standards for all contaminants in surface waters… The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained. EPA's National Pollutant Discharge Elimination System (NPDES) permit program controls discharges. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters."[34]

[31] Tulare County General Plan 2030 Update Background Report. Page 8-14.
[32] Ibid.
[33] Op. Cit. 8-17.
[34] U.S. Environmental Protection Agency. Summary of the Clean Water Act. Accessed August 2021 at: http://www.epa.gov/lawsregs/laws/cwa.html..

Safe Drinking Water Act

"The Safe Drinking Water Act (SDWA) is the main federal law that ensures the quality of Americans' drinking water. Under SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards… SDWA was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and ground water wells. (SDWA does not regulate private wells which serve fewer than 25 individuals.)"[35]

United States Environmental Protection Agency (EPA)

The mission of EPA is to protect human health and the environment.
"EPA's purpose is to ensure that:

- all Americans are protected from significant risks to human health and the environment where they live, learn and work;
- national efforts to reduce environmental risk are based on the best available scientific information;
- federal laws protecting human health and the environment are enforced fairly and effectively;
- environmental protection is an integral consideration in U.S. policies concerning natural resources, human health, economic growth, energy, transportation, agriculture, industry, and international trade, and these factors are similarly considered in establishing environmental policy;
- all parts of society -- communities, individuals, businesses, and state, local and tribal governments -- have access to accurate information sufficient to effectively participate in managing human health and environmental risks;
- environmental protection contributes to making our communities and ecosystems diverse, sustainable and economically productive; and
- the United States plays a leadership role in working with other nations to protect the global environment."[36]

United States Army Corps of Engineers (USACE or Corps)

"The Department of the Army Regulatory Program is one of the oldest in the Federal Government. Initially it served a fairly simple, straightforward purpose: to protect and maintain the navigable capacity of the nation's waters. Time, changing public needs, evolving policy, case law, and new

[35] U.S. Environmental Protection Agency. Summary of the Safe Drinking Water Act. Accessed August 2021 at: http://water.epa.gov/lawsregs/rulesregs/sdwa/index.cfm..
[36] U.S. Environmental Protection Agency. What we do. Accessed August 2021 at: http://www.epa.gov/aboutepa/whatwedo.html

statutory mandates have changed the complexion of the program, adding to its breadth, complexity, and authority.

The Regulatory Program is committed to protecting the Nation's aquatic resources, while allowing reasonable development through fair, flexible and balanced permit decisions. The Corps evaluates permit applications for essentially all construction activities that occur in the Nation's waters, including wetlands."[37]

National Flood Insurance Program

In 1968, Congress created the National Flood Insurance Program (NFIP). "The Act was motivated by the devastating loss of life and property by Hurricane Betsy in 1965 and created the National Flood Insurance Program (NFIP). Since then, the program has aimed to reduce the impact of flooding on private and public structures by providing affordable insurance to property owners, renters and businesses, as well as by encouraging communities to adopt and enforce floodplain management regulations."[38] "These efforts help mitigate the effects of flooding on new and improved structures. Overall, the program reduces the socio-economic impact of disasters by promoting the purchase and retention of general risk insurance, but also of flood insurance, specifically."[39]

State Agencies & Regulations

Porter-Cologne Water Quality Contract Act

"Under the Porter-Cologne Water Quality Control Act (Porter-Cologne), the State Water Resources Control Board (State Board) has the ultimate authority over State water rights and water quality policy. However, Porter-Cologne also establishes nine Regional Water Quality Control Boards (Regional Boards) to oversee water quality on a day-to-day basis at the local/regional level."[40]

State Water Quality Control Board

"The State Water Resources Control Board (State Water Board) was created by the Legislature in 1967. The joint authority of water allocation and water quality protection enables the State Water Board to provide comprehensive protection for California's waters.

The State Water Board consists of five full-time salaried members, each filling a different specialty position. Board members are appointed to four-year terms by the Governor and confirmed by the Senate."[41]

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[37] Army Corps of Engineers. Accessed August 2021 at: http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx.
[38] National Flood Insurance Program Summary. Accessed August 2021 at: https://www.fema.gov/nfip50.
[39] National Flood Insurance Program. Accessed August 2021 at: https://www.fema.gov/national-flood-insurance-program.
[40] California Department of Water Resources. Porter-Cologne Water Quality Control Act Summary. Accessed August 2021 at: http://ceres.ca.gov/wetlands/permitting/Porter_summary.html.
[41] California Water Boards. Mission Statement. Accessed August 2021 at: http://www.waterboards.ca.gov/about_us/water_boards_structure/mission.shtml.

Regional Water Quality Control Board

"There are nine Regional Water Quality Control Boards (Regional Boards). The mission of the Regional Boards is to develop and enforce water quality objectives and implementation plans that will best protect the State's waters, recognizing local differences in climate, topography, geology and hydrology. Each Regional Board has seven part-time members appointed by the Governor and confirmed by the Senate. Regional Boards develop "basin plans" for their hydrologic areas, issue waste discharge requirements, take enforcement action against violators, and monitor water quality."[42]

"The primary duty of the Regional Board is to protect the quality of the waters within the Region for all beneficial uses. This duty is implemented by formulating and adopting water quality plans for specific ground or surface water basins and by prescribing and enforcing requirements on all agricultural, domestic and industrial waste discharges. Specific responsibilities and procedures of the Regional Boards and the State Water Resources Control Board are contained in the Porter-Cologne Water Quality Control Act."[43]

California Department of Water Resources

"DWR's mission is "To manage the water resources of California, in cooperation with other agencies, to benefit the state's people and to protect, restore, and enhance the natural and human environments."[44] DWR provides a summary of their responsibilities as follows; "Our responsibilities and duties include:

- Preventing and responding to floods, droughts, and catastrophic events
- Informing and educating the public on water issues
- Developing scientific solutions
- Restoring habitats
- Planning for future water needs, climate change impacts, and flood protection
- Constructing and maintaining facilities
- Generating power
- Ensuring public safety
- Providing recreational opportunities"[45]

In addition, DWR also conducts the following:

[42] Ibid.
[43] Central Valley Water Quality Control Board. Accessed August 2021 at: http://www.swrcb.ca.gov/centralvalley/about_us/.
[44] Department of Water Resources. "The DWR Mission" accessed August 2021 at: https://water.ca.gov/
[45] California Department of Water Resources. Accessed August 2021 at: https://water.ca.gov/What-We-Do

"Dam Safety - Engineers and engineering geologists review and approve plans and specifications for the design of dams throughout California and oversee their construction to ensure compliance.

Education - We educate students and communities throughout California on water issues and water safety.

Flood Preparedness - We work with communities and emergency responders to prepare for flood season.

Science - Science is integral to our policy and management decisions – our scientists work in a wide range of specialties and develop solutions for the complexities of sustainable water management in California.

Water Supply & Storage – We operate and maintain a complex water storage and supply system, transporting water more than 600 miles from north to south. We also regulate the use of groundwater, which accounts for at least 1/3 of all water use in California.

Drought Mitigation - Because drought is a recurring feature of California's climate, drought preparedness is an ongoing activity that includes managing water supply reliability.

Emergency Management - We protect life and property from catastrophic events such as flood, drought, and dam or levee failure.

Infrastructure - We're responsible for the construction, maintenance, evaluation, and safety of a number of water infrastructure facilities, including 34 storage facilities, 21 dams, and 705 miles of canals and aqueducts.

Recreation - The SWP provides extensive recreational activities, including camping, boating, swimming, hiking, and fishing. We invite the public to explore our 3 visitors centers.

Sustainability - Sustainability is one of our core values; the goal of our work is to ensure the ability of natural ecosystems to meet the needs of future generations."[46]

California Water Boards Central Valley - R5

The California Water Boards Central Valley – R5 (Region 5) defines their missions as, "To preserve, enhance, and restore the quality of California's water resources and drinking water for the protection of the environment, public health, and all beneficial uses, and to ensure proper water resource allocation and efficient use, for the benefit of present and future generations."[47] In addition, the CA Water Boards Central Valley – R5 indicates their Duty as, "The primary duty of the Regional Board is to protect the quality of the waters within the Region for all beneficial uses. This duty is implemented by formulating and adopting water quality plans for specific ground or

[46] California Department of Water Resources. Accessed August 2021 at: http://www.water.ca.gov/about/mission.cfm.
[47] The California Water Boards Central Valley – R5. Accessed August 2021 at: https://www.waterboards.ca.gov/centralvalley/about_us/

surface water basins and by prescribing and enforcing requirements on all agricultural, domestic and industrial waste discharges. Specific responsibilities and procedures of the Regional Boards and the State Water Resources Control Board are contained in the Porter-Cologne Water Quality Control Act."[48]

Sustainable Groundwater Management Act (SGMA)

"On September 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package, composed of AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley), collectively known as the Sustainable Groundwater Management Act (SGMA). For the first time in its history, California has a framework for sustainable, groundwater management - "management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results."

SGMA requires governments and water agencies of high and medium priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. For critically over-drafted basins, that will be 2040. For the remaining high and medium priority basins, 2042 is the deadline."[49]

SB 610 (Costa, 2001)

This Bill requires additional information to be included as part of an urban water management plan if groundwater is identified as a source of water available to the supplier. This law also requires an urban water supplier to include in the plan a description of all water supply projects and programs that may be undertaken to meet total projected water use.

SB 221 (Kuehl, 2001)

This Bill prohibits approval of a tentative subdivision map, or a parcel map for which a tentative subdivision map is not required, or a development agreement for a subdivision of property of more than 500 dwelling units unless the city or county provides written verification from the applicable public water system that a sufficient water supply is available. In addition, the law requires the city or county make a finding that sufficient water supplies are, or will be, available prior to completion of the project.

Local Policy & Regulations

Tulare County Environmental Health Services

"The mission of the Division of Environmental Health is to enhance the quality of life in Tulare County through implementation of environmental health programs that protect public health and

[48] Ibid.

[49] State of California Department of Water Resources. SGMA Groundwater Management. Accessed August 2021 at: https://water.ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management

safety as well as the environment. We accomplish this goal by overseeing and enforcing numerous different programs, from food facility inspections to hazardous waste. All of our inspectors are licensed and/or certified in the field that they practice in and participate in continuing education to maintain licensure."[50] This division requires water quality testing of public water systems. Any project that involves septic tanks and water wells within Tulare County is subject to approval by this agency. All recommendations provided by this division will be added as mitigation measures to ensure reduction of environmental impacts.

Tulare County General Plan Policies

The Tulare County General Plan has a number of policies that apply to projects within County of Tulare. General Plan policies that relate to the proposed Project are listed below.

AG-1.17 Agricultural Water Resources - The County shall seek to protect and enhance surface water and groundwater resources critical to agriculture. The County shall seek to protect and enhance surface water and groundwater resources critical to agriculture.

HS-4.4 Contamination Prevention - The County shall review new development proposals to protect soils, air quality, surface water, and groundwater from hazardous materials contamination.

HS-5.2 Development in Floodplain Zones - The County shall regulate development in the 100-year floodplain zones as designated on maps prepared by FEMA in accordance with the following:

1. Critical facilities (those facilities which should be open and accessible during emergencies) shall not be permitted.
2. Passive recreational activities (those requiring non-intensive development, such as hiking, horseback riding, picnicking) are permissible.
3. New development and divisions of land, especially residential subdivisions, shall be developed to minimize flood risk to structures, infrastructure, and ensure safe access and evacuation during flood conditions.

HS-5.4 Multi-Purpose Flood Control Measures - The County shall encourage multipurpose flood control projects that incorporate recreation, resource conservation, preservation of natural riparian habitat, and scenic values of the County's streams, creeks, and lakes. Where appropriate, the County shall also encourage the use of flood and/or stormwater retention facilities for use as groundwater recharge facilities.

HS-5.9 Floodplain Development Restrictions - The County shall ensure that riparian areas and drainage areas within 100-year floodplains are free from development that may adversely impact floodway capacity or characteristics of natural/riparian areas or natural groundwater recharge areas.

HS-5.11 Natural Design - The County shall encourage flood control designs that respect natural curves and vegetation of natural waterways while retaining dynamic flow and functional integrity.

[50] Tulare County Environmental Health Division. Who Are We. Accessed August 2021 at: https://tularecountyeh.org/eh/index.cfm/about-us/who-are-we/

WR-2.1 Protect Water Quality - All major land use and development plans shall be evaluated as to their potential to create surface and groundwater contamination hazards from point and non-point sources. The County shall confer with other appropriate agencies, as necessary, to assure adequate water quality review to prevent soil erosion; direct discharge of potentially harmful substances; ground leaching from storage of raw materials, petroleum products, or wastes; floating debris; and runoff from the site.

WR-2.2 National Pollutant Discharge Elimination System (NPDES) Enforcement - The County shall continue to support the State in monitoring and enforcing provisions to control non-point source water pollution contained in the U.S. EPA NPDES program as implemented by the Water Quality Control Board.

WR-2.3 Best Management Practices (BMPs) - The County shall continue to require the use of feasible BMPs and other mitigation measures designed to protect surface water and groundwater from the adverse effects of construction activities, agricultural operations requiring a County Permit and urban runoff in coordination with the Water Quality Control Board.

WR-2.4 Construction Site Sediment Control - The County shall continue to enforce provisions to control erosion and sediment from construction sites.

WR-2.5 Major Drainage Management - The County shall continue to promote protection of each individual drainage basin within the County based on the basins unique hydrologic and use characteristics.

WR-2.6 Degraded Water Resources - The County shall encourage and support the identification of degraded surface water and groundwater resources and promote restoration where appropriate.

WR-2.8 Point Source Control - The County shall work with the Regional Water Quality Control Board to ensure that all point source pollutants are adequately mitigated (as part of the California Environmental Quality Act review and project approval process) and monitored to ensure long-term compliance.

WR-3.10 Diversion of Surface Water - Diversions of surface water or runoff from precipitation should be prevented where such diversions may cause a reduction in water available for groundwater recharge.

IMPACT EVALUATION

Would the project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Project Impact Analysis: ***Less Than Significant Impact***

The proposed Project consists of development and operation of a covered aerated static pile (CASP) compost facility to comply with the upcoming SB 1383 regulations. The compost facility will be located on the County's Visalia Landfill property that encompasses approximately 634 acres, of which the compost facility will occupy approximately 36 acres, located in a soil borrow recessed approximately 20 feet below grade at the southwest corner of the existing landfill. The composting facility will be designed to accept up to 200,000 tons per year (TPY) in increments of 50,000 TPY technology modules and can store up to 200,000 cubic yards on-site of organic material that would have otherwise been landfilled. The compost facility would include installing processing and composting equipment, a 50,000 square foot processing building, concrete and asphaltic concrete compost pads, and a lined storm water storage pond.

The proposed Project will also add a 2.0 mega-watt (MW) biomass conversion facility on a 2-acre site adjacent to the proposed composting facility within the boundaries of the existing landfill. The facility will produce electricity, heat and biochar using wood fuel that will be provided by local activities to reduce landfill disposal to meet the mandates of SB 1383 to reduce 75% of all organic, which includes wood waste, from landfill disposal by 2025.

The biomass facility will utilize approximately 18,000 bone dry tons (BDT) of wood chips per year or 25,000 tons of per year of wet recovered wood waste and produce approximately a net amount (after parasitic load) 2.0 MW of electrical energy per hour. In addition to this the facility will also produce approximately 20-30 MM BTU of waste heat and approximately 300-600 pounds of biochar per hour.

See Chapter Two – Project Description for more specific Project description information. A *Report of Composting Site Information – Visalia Landfill Composting* Facility, by Edgar & Associates (July 2021, Appendix "D") provided information pertaining to the operations and requirements of the proposed Project.

Water Quality and Waste Discharge Requirements

Regulatory oversight of compost facilities is provided by CalRecycle [formerly the California Integrated Waste Management Board (CIWMB)] and the Local Enforcement Agency (LEA), Tulare County Environmental Health Department. The project would also be subject to Regional Water Quality Control Board (RWQCB) and the State Water Resources Control Board (SWRCB) requirements.

CalRecycle requires that the project applicant meet design, operation, record keeping, environmental health standards, and employee training requirements for a Compostable Materials Handling Facility, apply for and maintain permit conditions, and be inspected at least monthly.

Site improvements would be required by the SWRCB as part of the approval process for the Project. The landfill currently has a site-specific water quality permit, called Waste Discharge

Requirements (WDRs). The landfill operates under SWRCB Order WQ 2015-0121-DWQ. The composting facility will be permitted under the General Order. To comply with new permitting requirements, site improvements will include constructing a new lined storm water storage pond, as well as improvements to working surfaces such as paving active composting and/or processing areas to meet the SWRCB's specifications.

All receiving, composting, processing, and storage areas will be constructed with concrete or asphaltic concrete paved surfaces. These areas will be equipped with drainage conveyance features (ditches, swales, curbing, etc.) that will be lined or constructed with materials meeting the General Order hydraulic conductivity specifications (1 x 10^{-5} centimeters per second or less). All drainage from these conveyances' areas will drain to the lined storm water storage pond. The lined pond construction will comply with the General Order specifications and include (in ascending order) a prepared subgrade, a geosynthetic clay liner (GCL), and a 60-mil high-density polyethylene geomembrane. The liner system will also be equipped with a pan lysimeter monitoring device completed under the lowest point of the pond.

The lined storm water storage pond will be used for the collection of storm water run-off generated from the entire composting facility, except for the Covered Aerated Static Pile (CASP) concrete pad, which will be serviced by an above ground storage tank (AST). Storm water run-off from selected earthen side slopes adjoining the composting facility will also be diverted to the lined storm water storage pond. Storm water retained in this pond will be available for use in the composting operations. Based on water balance calculations for the Facility, it is estimated that the pond storage can supply approximately 15 – 30% percent of the annual water demand, depending upon climatic conditions and operational capacity of the composting operations.

The CASP composting area will be self-contained with respect to leachate and storm water run-off. This concrete pad will be equipped with interior swales and perimeter concrete walls and curbs to collect all leachate and storm water run-off generated within the pad and convey the collected water to a series of sumps for eventual pumping into an AST to be located in the southwest corner of the CASP composting area.

Accumulated storm water will be used as process water for the compost operation.

The proposed onsite storm water system is subject to the requirements of the NPDES Storm Water Permit adopted by the SWRCB. This permit requires that discharges of pollutants from areas of new development be reduced to the maximum extent practicable. Compliance with this standard requires that control measures be incorporated into the design of new development to reduce pollution discharges in site runoff over the life of the project.

The RWQCB is responsible for administering NPDES permit requirements, such as the use of construction and operational BMPs, to ensure that projects are in compliance with water quality standards as set forth in the CWA. The SWRCB through the creation of a Storm Water Quality Task Force has published the California Storm Water Best Management Practice

Construction Handbook, which identifies a listing of acceptable BMPs to be used in meeting water standards as outlined by the CWA.

The discharger shall ensure that the Storm Water Pollution Prevention Plans (SWPPPs) for the project sites are developed and amended or revised by a qualified SWPPP Developer (QSD). The SWPPP shall be designed to address the following two major objectives:

1. To help identify the sources of pollution that affect the quality of industrial stormwater discharges and authorized non-stormwater discharges.
2. To describe and ensure the implementation of BMPs to reduce or prevent pollutants in industrial stormwater discharges and authorized non-stormwater discharges.

The SWPPP must identify a specific individual or individuals within the facility organization as members of the Pollution Prevention Team (PPT). The PPT may have personnel that overlap with related pollution control responsibilities such as a spill prevention and response team. The PPT is responsible for:

- Developing the SWPPP
- Assisting the facility manager in SWPPP implementation and revision
- Conducting the monitoring activities

The SWPPP must include a narrative description of the facility's industrial activities, associated potential pollutant sources, and potential pollutants that could be discharged in stormwater discharges or authorized non-stormwater discharges.

There is no public wastewater service or septic system on the compost site or planned for development. Portable toilet facilities would be provided for employees. The employees would have access to the landfill facilities' gate for access to the portable toilet facilities.

The stormwater collection system has been designed to accommodate the proposed Project. The proposed expansion Project will not cause a significant increase in impacts above and beyond what is already occurring and/or is permitted on the site. Therefore, Project compliance with CalRecycle, SWRCB, and RWQCB rules, requirements and regulations, as well as implementation of the SWPPP and BMPs, would result in a ***Less Than Significant Impact*** to this resource.

<u>Cumulative Impact Analysis</u>: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is the Tulare Lake Basin. This cumulative analysis is based on information provided from the Regional Water Quality Control Board in the Water Quality Control Plan for the Tulare Lake Basin and the requirements of Tulare County Environmental Health.

As noted earlier, the proposed Project will be required to comply with all local, state, and/or federal required; requirements of CalRecycle, SWRCB, and the RWQCB. Therefore, the proposed Project will result in ***Less Than Significant Cumulative Impacts*** related to this Checklist item.

Mitigation Measure(s): ***None Required***.

Conclusion: ***Less Than Significant Impact***

Project-specific and cumulative impacts related to this Checklist Item will be reduced to a ***Less Than Significant Impact*** because of compliance with CalRecycle, SWRCB, and RWQCB rules, requirements and regulations, as well as implementation of the SWPPP and BMPs.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that project may impede sustainable groundwater management of the basin?

Project Impact Analysis: ***Less Than Significant Impact***

The proposed Project will require a moderate increase in water use above existing landfill baseline conditions. Two existing wells are available on the landfill property for water supply. The "Cotton Gin Well" is located in the south-central portion of the property and has a well yield ranging from approximately 400 to 900 gallons per minute (GPM). This well is currently used for the landfill operations. The average daily water use for the landfill operations is approximately 118,000 gallons per day (GPD). As for the composting operations, the typical summer day for an average 400 tons per day (TPD) CASP compost facility, or 100,000 TPY, is 168 TPD of water or 40,000 GPD or 56 GPM for 12 hours pumping per day, or 10 trips per day for a 4,000 gallon water truck. The typical summer day for an average 800 TPD CASP compost facility, or 200,000 TPY, is 336 TPD of water or 80,000 GPD or 112 GPM for 12 hours pumping per day or 20 trips per day for a 4,000 gallon water truck. These usages equate to an average daily demand for both the landfill operations and compost facility of approximately 158,000 to 198,000 GPD. The Cotton Gin Well's 400 to 900 GPM yield is sufficient to accommodate this demand.

The second on-site well ("Northeast Well") is located in the northeast corner of the property and is currently used for contingency purposes only. No information is currently available with regard to its well yield characteristics. However, based on the local hydrogeologic depositional environment, it is reasonable to conclude that its yield is likely on the order of several hundred GPM, which would be sufficient to service the composting operations.

The Project will include a lined storm water storage pond for the collection of storm water run-off generated from the entire composting facility, except for the CASP concrete pad, which will be serviced by an AST. Storm water run-off from selected earthen side slopes adjoining the composting facility will also be diverted to the lined storm water storage pond. Storm water retained in this pond will be available for use in the composting operations. Based on water balance calculations for the Facility, it is estimated that the pond storage can supply approximately 15 – 30% percent of the annual water demand, depending upon climatic conditions and operational capacity of the composting operations.

A 60,000-gallon dedicated water tank for fire control purposes will be located within the compost facility operating area.

As previously noted, the average daily water use for the landfill operations is approximately 118,000 gallons per day (GPD). The anticipated average daily demand for both the landfill operations and compost facility is estimated to be between 158,000 to 198,000 GPD. This results in an increase in daily water use of between 40,000 and 80,000 GPD, depending on conditions. However, as noted earlier, the on-site stormwater storage pond can supply approximately 15 – 30% of the annual water demand. This results in a water savings of between 23,700 and 47,400 GPD. Taking this into account, the proposed Project would result in an increase in water usage (above existing landfill basin conditions of 118,000 GPD) of between 16,300 and 32,600 GPD. This relatively modest increase in water use can be sufficiently served by the existing wells on-site and no construction of new wells or expansion of existing wells is necessary.

Therefore, the proposed Project will result in a ***Less Than Significant Impact*** to this resource.

Cumulative Impact Analysis: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is the Tulare Lake Basin. This cumulative analysis is based on the information provided in the California Water Plan Update 2009, Tulare Lake.

As noted in the California Water Plan 2009, Regional Report 3, Tulare Lake, it is estimated that future water demand will be reduced by 550,000 acre-feet in future conditions. The proposed Project will result in a relatively modest increase in water usage, but will be offset by between 15 – 30% due to re-using stormwater during the composting process. The impact is determined to have ***Less Than Significant Cumulative Impacts.***

Additionally, the County has available surface water storage facilities to allow for future recharge areas should they be required. Therefore, development of the proposed Project will not significantly impact groundwater recharge in the cumulative, and impacts will be ***Less Than Significant.***

Mitigation Measure(s): ***None Required.***

Conclusion: ***Less Than Significant Impact***

As noted earlier, ***Less Than Significant Project-specific and Cumulative Impacts*** related to this Checklist Item would occur.

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 stormwater drainage systems or provide substantial additional sources of polluted runoff?

Project Impact Analysis: ***Less Than Significant Impact***

The existing drainage patterns on the proposed Project site will be modified due installation of the compost facility and biomass facility. All receiving, composting, processing, and storage areas will be constructed with concrete or asphaltic concrete paved surfaces. These areas will be equipped with drainage conveyance features (ditches, swales, curbing, etc.) that will be lined or constructed with materials meeting the General Order hydraulic conductivity specifications (1 x 10^{-5} centimeters per second or less). All drainage from these conveyances' areas will drain to the lined storm water storage pond. The lined pond construction will comply with the General Order specifications and include (in ascending order) a prepared subgrade, a geosynthetic clay liner (GCL), and a 60-mil high-density polyethylene geomembrane. The liner system will also be equipped with a pan lysimeter monitoring device completed under the lowest point of the pond.

The lined storm water storage pond will be used for the collection of storm water run-off generated from the entire composting facility, except for the Covered Aerated Static Pile (CASP) concrete pad, which will be serviced by an above ground storage tank (AST). Storm water run-off from selected earthen side slopes adjoining the composting facility will also be diverted to the lined storm water storage pond. Storm water retained in this pond will be available for use in the composting operations.

The CASP composting area will be self-contained with respect to leachate and storm water run-off. This concrete pad will be equipped with interior swales and perimeter concrete walls and curbs to collect all leachate and storm water run-off generated within the pad and convey the collected water to a series of sumps for eventual pumping into an AST to be located in the southwest corner of the CASP composting area.

Accumulated storm water will be used as process water for the compost operation.

The proposed onsite storm water system is subject to the requirements of the NPDES Storm Water Permit adopted by the SWRCB. This permit requires that discharges of pollutants from areas of new development be reduced to the maximum extent practicable. Compliance with this standard requires that control measures be incorporated into the design of new development to reduce pollution discharges in site runoff over the life of the project.

The RWQCB is responsible for administering NPDES permit requirements, such as the use of construction and operational BMPs, to ensure that projects are in compliance with water quality standards as set forth in the CWA. The SWRCB through the creation of a Storm Water Quality Task Force has published the California Storm Water Best Management Practice Construction Handbook, which identifies a listing of acceptable BMPs to be used in meeting water standards as outlined by the CWA.

The discharger shall ensure that the Storm Water Pollution Prevention Plans (SWPPPs) for the project sites are developed and amended or revised by a qualified SWPPP Developer (QSD). The SWPPP shall be designed to address the following two major objectives:

1. To help identify the sources of pollution that affect the quality of industrial stormwater discharges and authorized non-stormwater discharges.
2. To describe and ensure the implementation of BMPs to reduce or prevent pollutants in industrial stormwater discharges and authorized non-stormwater discharges.

The SWPPP must identify a specific individual or individuals within the facility organization as members of the Pollution Prevention Team (PPT). The PPT may have personnel that overlap with related pollution control responsibilities such as a spill prevention and response team. The PPT is responsible for:

- Developing the SWPPP
- Assisting the facility manager in SWPPP implementation and revision
- Conducting the monitoring activities

The SWPPP must include a narrative description of the facility's industrial activities, associated potential pollutant sources, and potential pollutants that could be discharged in stormwater discharges or authorized non-stormwater discharges.

The lined storm water storage pond will be used for the collection of storm water run-off generated from the entire composting facility, except for the Covered Aerated Static Pile (CASP) concrete pad, which will be serviced by an above ground storage tank (AST). Storm water run-off from selected earthen side slopes adjoining the composting facility will also be diverted to the lined storm water storage pond. Storm water retained in this pond will be available for use in the composting operations.

The site is not crossed by any rivers, streams, canals, or irrigation ditches.

The stormwater collection system has been designed to accommodate the proposed Project and runoff will not exceed the stormwater system’s capacity. The proposed expansion Project will not cause a significant increase in impacts above and beyond what is already occurring and/or is permitted on the site. In addition, existing regulations and existing permit requirements will ensure that Project impacts remain less than significant. Therefore, ***Less Than Significant Impacts*** related to this Checklist Item will occur.

Cumulative Impact Analysis: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is Tulare County. The proposed Project will not result in significant impacts to these resources, as such, ***Less Than Significant Cumulative Impacts*** related to this Checklist Item will occur.

Mitigation Measure(s): ***None Required***.

Conclusion: ***Less Than Significant Impact***

As noted earlier, ***Less Than Significant Project-specific and Cumulative Impacts*** related to this Checklist Item would occur.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Project Impact Analysis: ***Less Than Significant Impact***

The proposed expansion is located within a minimal flood hazard area and is located more than 100 miles from the ocean. It is not located along a lake shore that may be potential for threats to tsunami or seiche, therefore, no impact. As noted earlier, the Project site has been designed to capture, store and dispose of surface runoff in a manner which will not result in flooding on or off site. The proposed Project will not cause a significant increase in impacts above and beyond what is already occurring and/or is permitted on the site. As such ***Less Than Significant Project-specific Impacts*** related to this Checklist Item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. The proposed Project will not affect the drainage pattern of any off-site parcels, ***No Cumulative Impacts*** related to this Checklist Item will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***Less Than Significant Impact***

As noted earlier, ***Less Than Significant Project-specific or Cumulative Impacts*** related to this Checklist Item will occur.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Project Impact Analysis: ***Less Than Significant Impact***

As indicated earlier in Item a), the proposed Project would not violate any water quality standards or waste discharge requirements; or otherwise substantially degrade surface or groundwater quality; and would not conflict with or obstruct a water quality control plan. As indicated in Item b) the proposed Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that project may impede sustainable groundwater management of the basin.

Therefore, based on the analysis above, the Project would result in ***Less Than Significant Project-specific Impacts*** related to this Checklist Item.

Cumulative Impact Analysis: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the requirements of the Central Valley Regional Water Quality Control Board.

As noted above, the proposed Project will not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. As such, ***a Less Than Significant Cumulative Impacts*** related to this Checklist Item will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***Less Than Significant Impact***

As noted earlier, a ***Less Than Significant Project-specific or Cumulative Impacts*** related to this Checklist Item will occur.

DEFINITIONS AND/OR ACRONYMS

Acronyms

AB	Assembly Bill (in California)
AF	Acre-feet
AG	Agriculture
AST	Above-ground Storage Tank
AMP	Agricultural Management Plan
CASP	Covered Aerated Static Pile
CIMIS	California Irrigation Management Information System
CWA	Federal Clean Water Act
CVP	Central Valley Project
DEIR	Draft Environmental Impact Report
DWR	State of California Department of Water Resources
EIR	Environmental Impact Report
ERM	Environmental Resources Management
FEMA	Federal Emergency Management Agency
EPA	United States Environmental Protection Agency
HS	Health and Safety
LAMP	Local Agency Management Program
MCL	Maximum Contaminant Level
M&I	Municipal and Industrial
MW	Megawatts
NFIP	National Flood Insurance Program
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
PCE	Tetrachloroethylene
SB	Senate Bill (in California)
SDWA	Safe Drinking Water Act
SGMA	Sustainable Groundwater Management Act
SMARA	Surface Mining and Reclamation Act
SWP	State Water Project
SWPP	Stormwater Pollution Prevention Plan
SWQCB	State Water Quality Control Board
RWQCB	Regional Water Quality Control Board
TCE	Trichloroethylene
TDS	Total Dissolved Solids
UWMP	Urban Water Management Plan
WR	
WSA	Water Supply Assessment
U.S. ACE	United States Army Corps of Engineers

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Chapter 3.8
Transportation

SUMMARY OF FINDINGS

The proposed Project will result in a ***Less Than Significant Impact*** related to Transportation and Traffic. A review of potential impacts is provided in the following analysis.

INTRODUCTION

California Environmental Quality Act (CEQA) Requirements

This section of the draft EIR addresses potential impacts to Transportation. As required in Section 15126, all phases of the proposed Project will be considered as part of the potential environmental impact.

As noted in Section 15126.2 (a), "[a]n EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected. For example, an EIR on a subdivision astride an active fault line should identify as a significant effect the seismic hazard to future occupants of the subdivision. The subdivision would have the effect of attracting people to the location and exposing them to the hazards found there. Similarly, the EIR should evaluate any potentially significant impacts of locating development in other areas susceptible to hazardous conditions (e.g., floodplains, coastlines, wildfire risk areas) as identified in authoritative hazard maps, risk assessments or in land use plans addressing such hazards areas."[1]

The environmental setting provides a description of the Transportation and Traffic in the County. The regulatory setting provides a description of applicable Federal, State and Local regulatory policies that were developed in part from information contained in the Tulare County 2030 General

[1] CEQA Guidelines, Section 15126.2 (a).

Plan, Tulare County General Plan Background Report, and/or Tulare County 2030 General Plan EIR incorporated by reference and summarized below. Additional documents utilized are noted as appropriate. A description of the potential impacts of the proposed Project is provided and includes the identification of feasible mitigation measures (if necessary and feasible) to avoid or lessen the impacts.

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist item questions. The following are potential thresholds for significance.

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities
- conflict or be inconsistent with CEQA Guidelines section 15064.3,
- subdivision (b)
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or
- dangerous intersections) or incompatible uses (e.g., farm equipment)
- Result in inadequate emergency access

ENVIRONMENTAL SETTING

"Tulare County has two major regional highways, State Highway [Route] 99 and 198. State Highway [Route] 99 connects Tulare County to Fresno and Sacramento to the north and Bakersfield to the south. State Highway 198 connects from U.S. Highway 101 on the west and continues eastward to Tulare County, passing through the City of Visalia and into Sequoia National Park. The highway system in the County also includes State highways, County-maintained roads, and local streets within each of the eight cities."[2]

"Tulare County's transportation system is composed of several State Routes, including three freeways, multiple highways, as well as numerous county and city routes. The county's public transit system also includes two common carriers (Greyhound and Orange Belt Stages), the AMTRAK Service Link, other local agency transit and paratransit services, general aviation, limited passenger air service and freight rail service.

Travel within Tulare County is a function of the size and spatial distribution of its population, economic activity, and the relationship to other major activity centers within the Central Valley (such as Fresno and Bakersfield) as well as more distant urban centers such as Los Angeles, Sacramento, and the Bay Area. In addition, there is considerable travel between the northwest portions of Tulare County and southern Fresno County and travel to/from Kings County to the west. Due to the interrelationship between urban and rural activities (employment, housing, services, etc.) and the low average density/ intensity of land uses, the private automobile is the dominant mode of travel for residents in Tulare County."[3]

[2] Tulare County General Plan 2030 Update. Page 13-2. Accessed August 2021 at: http://generalplan.co.tulare.ca.us/index.asp.
[3] Tulare County General Plan 2030 Update Background Report, page 5-4.

"Some prominent county roadways include, but are not limited to, Alta Avenue (Road 80), Caldwell Avenue/Visalia Road (Avenue 280), Demaree Road/Hillman Street (Road 108), Tulare Avenue (Avenue 232), Olive Avenue (Avenue 152), Spruce Road (Road 204), El Monte Way (Avenue 416), Paige Avenue (Avenue 216), Farmersville Boulevard (Road 164), Road 192, and Road 152. Additionally, the highway system includes numerous county-maintained local roads, as well as local streets and highways within each of the eight cities and several unincorporated communities."[4]

Road Capacity and Level of Service

"Capacity

"According to the 2010 Highway Capacity Manual (HCM), capacity is defined as "the maximum sustainable hourly flow rate at which persons or vehicles reasonably can be expected to traverse a point or a uniform section of a lane or roadway during a given time period under prevailing roadway, environmental, traffic and control conditions, usually expressed as vehicles per hour or persons per hour." The ratio of the roadway volume to its capacity, V/C, can be useful in determining the preliminary Level of Service (LOS) of a roadway.

*V*olume = Actual number of vehicles.
*C*apacity = Maximum number of vehicles on a particular segment of roadway during a specific time frame.

Level of Service (LOS)

LOS is categorized by two parameters: uninterrupted flow and interrupted flow. Uninterrupted flow facilities have no fixed elements, such as traffic signals, that cause interruptions in traffic flow (e.g., freeways, highways, and controlled access, some rural roads). Interrupted flow facilities have fixed elements that cause an interruption in the flow of traffic such as stop signs and signalized intersections.

The difference between uninterrupted flow and interrupted LOS is defined in the following summaries in **Tables 3.8-1** and **3.8-2**.

Table 3.8-1 Uninterrupted Traffic Flow Facilities LOS[5]	
LOS A	Describes free-flow operations. Free-Flow Speed (FFS) prevails on the freeway, and vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. The effects of incidents or point breakdowns are easily absorbed.
LOS B	Represents reasonably free-flow operations, and FFS on the freeway is maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high. The effects of minor incidents and point breakdowns are still easily absorbed.

[4] Tulare County General Plan 2030 Update Background Report, page 5-7.
[5] Ibid. 7 and 8.

LOS C	Provides for flow with speeds near the FFS of the freeway. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver. Minor incidents may still be absorbed, but the local deterioration in service quality will be significant. Queues may be expected to form behind any significant blockages
LOS D	At this level speeds begin to decline with increasing flows, with density increasing more quickly. Freedom to maneuver within the traffic stream is seriously limited and drivers. At this level speeds begin to decline with increasing flows, with density increasing more quickly. Freedom to maneuver within the traffic stream is seriously limited and drivers
LOS E	Describes operation at capacity. Operations on the freeway at this level are highly volatile because there are virtually no useable gaps within the traffic stream, leaving little room to maneuver within the traffic stream. Any disruption to the traffic stream, such as vehicles entering from a ramp or changing lanes, can establish a disruption wave that propagates throughout the upstream traffic flow. At capacity, the traffic stream has no ability to dissipate even the most minor disruption, and any incident can be expected to produce a serious breakdown and substantial queuing. The physical and psychological comfort afforded to drivers is poor.
LOS F	Describes breakdown, or unstable flow. Such conditions exist within queues forming behind bottlenecks. Breakdowns occur for a number of reasons: Traffic incidents can temporarily reduce the capacity of a short segment, so that the number of vehicles arriving at a point is greater than the number of vehicles that can move through it. Points of recurring congestion, such as merge or weaving segments and lane drops, experience very high demand in which the number of vehicles arriving is greater than the number of vehicles that can be discharged. In analyses using forecast volumes, the projected flow rate can exceed the estimated capacity of a given location.

Table 3.8-2 Interrupted Traffic Flow Facilities LOS[6]	
LOS A	Describes operations with a control delay of 10 seconds/vehicle or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
LOS B	Describes operations with a control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A, with reasonably unimpeded travel between intersections
LOS C	Describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual cycle failures (i.e.one or more queued vehicles are not able to depart as a result of the insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping. May be longer queues and operations between locations may be more restricted.
LOS D	Describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. Travel speeds are about 40 percent below free flow speeds. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
LOS E	Describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent. Average travel speed is one-third of free flow speeds. The facility is generally at full capacity

[6] Op. Cit. B-8 and B –9.

Table 3.8-2 Interrupted Traffic Flow Facilities LOS[6]	
LOS F	Describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue. Extremely slow speeds with average delay of 80 seconds or more. Frequent stop and go conditions.

"Caltrans policy defines LOS D as an acceptable operating condition when planning for future state facilities in urbanized areas. TCAG monitors traffic levels of service on the regional roads. An LOS of D or better is the goal on urban roads, and C on rural roads."[7]

"A clean alternative to adding additional lanes to highways, streets, and roads is to provide mass transit systems. Mass transportation provides transportation to large numbers of people to designated destinations by bus or train. In Tulare County, buses are the primary mode of public transportation. Fixed Route and Dial-A-Ride services are provided by Visalia Transit, Tulare Intermodal Express (TIME), Porterville Transit, Dinuba Transit, and Tulare County Area Transit (TCaT). The City of Woodlake also operates a Dial-a-Ride only service."[8] "Public transportation in Tulare County also takes the form of shared-ride companies, carpools, and vanpools. Fixed route transit is generally used in the more populated urban areas while demand responsive transit and blended paratransit are often used in rural areas and communities."[9]

"Goals for all transit agencies are to integrate transit into the growth and development of their cities and communities. As developments and road designs occur, transit shall be integrated when possible. High and medium density neighborhoods, commercial, medical, educational, and employment areas can all benefit from transit. Arterials and transit friendly corridors should be identified in cities and communities to serve the anticipated population growth to become transit users or transit dependent. Transit Plans and General Plans shall determine the feasibility and steps to implement express bus service and bus rapid transit, where demands exist or will exist in the future."[10]

The proposed Project lies within the central portion of the San Joaquin Valley, approximately one (1) mile north of the City of Visalia at the intersection of Road 80 and Avenue 328.

<u>Area Roadways</u>

Avenue 328 currently exists as a two-lane undivided arterial without bike lanes and without a posted speed limit in the Project area.

Road 80 (Route J19) currently exist as four-lane divided roadway without bike lanes and with a posted speed limit of 65 MPH in the Project area.

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[7] Op. Cit. B-9.
[8] Op. Cit. B-51.
[9] Op. Cit. B-52.
[10] Op. Cit.

Airport

"There are nine public use airports in Tulare County. These include six publicly owned and operated facilities (Porterville Municipal, Sequoia Field, Tulare Municipal [Mefford Field], Visalia Municipal, Woodlake, and Harmon Field [currently closed]) and three privately owned and operated airports (Alta Airport [currently closed], Thunderhawk Field, and Eckert Field). Badger Field is under consideration for Federal Aviation Administration (FAA) recertification as a restricted private airfield (as of August 2006)."[11] The Visalia Municipal Airport is the nearest public airport and is located approximately 4 miles south of the Project site.

Design for Emergency Access

According to § 21060.3 and § 15359 of the CEQA Guidelines, an "Emergency" means a sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services. "Emergency" includes such occurrences as fire, flood, earthquake, or other soil or geologic movements, as well as such occurrences as riot, accident, or sabotage. A Proposed Project could potentially generate impacts through inadequate design for emergency access.

Alternative Transportation

"Transit planning in Tulare County is done at the county and local level. The Tulare County Association of Governments (TCAG) is the County's designated Metropolitan Planning Organization (MPO) and also serves as the Tulare County Council of Governments, Transportation Authority, and Regional Transportation Planning Agency. TCAG's nine member agencies include eight incorporated cities (Dinuba, Exeter, Farmersville, Lindsay, Porterville, Tulare, Visalia, and Woodlake) and Tulare County."[12] Fixed routes transit services operating in Tulare County are provided by Dinuba Area Regional Transit (DART), Porterville Transit (COLT), Tulare Intermodal Express (TIME), Tulare County Area Transit (TCaT), Visalia Transit, and Visalia-Fresno intercity service (V-Line).[13]

REGULATORY SETTING

Federal Agencies & Regulations

None that apply to the proposed Project.

State Agencies & Regulations

Caltrans: Transportation Concept Reports

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[11] Tulare County General Plan 2030 Update. Page 13-2.

[12] Tulare County Association of Governments. Tulare County Long Range Transit Plan. Final Report. Page 2-2. Accessed August 2021 at: https://tularecog.org/tcag/planning/transit-planning/transit-plans/transit-development-plans-short-and-long-range-transit-plans/tulare-county-regional-long-range-transit-plan/

[13] Ibid. 2-30 through 2-31.

Caltrans has prepared a number concept reports for State Routes, Interstate Routes, and U.S. Routes. Tulare County is located in Caltrans District 6. Caltrans' SR 65 Transportation Concept Report (TCR) applies to this Project.

Caltrans Guide for the Preparation of Traffic Impact Studies

"The California Department of Transportation (Caltrans) has developed this "Guide for the Preparation of Traffic Impact Studies" in response to a survey of cities and counties in California. The purpose of that survey was to improve the Caltrans local development review process (also known as the Intergovernmental Review/California Environmental Quality Act or IGR/CEQA process). The survey indicated that approximately 30 percent of the respondents were not aware of what Caltrans required in a traffic impact study (TIS). In the early 1990s, the Caltrans District 6 office located in Fresno identified a need to provide better quality and consistency in the analysis of traffic impacts generated by local development and land use change proposals that effect State highway facilities. At that time, District 6 brought together both public and private sector expertise to develop a traffic impact study guide. The District 6 guide has proven to be successful at promoting consistency and uniformity in the identification and analysis of traffic impacts generated by local development and land use changes. The guide developed in Fresno was adapted for statewide use by a team of Headquarters and district staff. The guide will provide consistent guidance for Caltrans staff who review local development and land use change proposals as well as inform local agencies of the information needed for Caltrans to analyze the traffic impacts to State highway facilities. The guide will also benefit local agencies and the development community by providing more expeditious review of local development proposals."[14]

Local Policy & Regulations

Tulare County Transportation Control Measures (TCM)

"Transportation Control Measures (TCM) are designed to reduce vehicle miles traveled, vehicle idling, and/or traffic congestion in order to reduce vehicle emissions. Currently, Tulare County is a nonattainment region under the Federal Clean Air Act (CAA) and the California Clean Air Act (CCAA). Both of these acts require implementation of TCMs. These TCMs for Tulare County are as follows:

- Rideshare Programs;
- Park and Ride Lots;
- Alternate Work Schedules;
- Bicycle Facilities;
- Public Transit;
- Traffic Flow Improvement; and
- Passenger Rail and Support Facilities."[15]

[14] Caltrans Guide for the Preparation of Traffic Studies. Page ii. Accessed August 2021. https://www.contracosta.ca.gov/DocumentCenter/View/34121/Caltrans2002-TIS-Guidelines-PDF.
[15] Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report. Page 3.2-2.

Tulare County Association of Governments (TCAG)

"TCAG is the federally designated Metropolitan Planning Organization (MPO) for Tulare County under federal transportation planning laws that requires preparation of RTPs (23 USC Section 134 et seq.)"[16] "Federal transportation planning regulations (23 CFR Parts 450 and 771; 49 CFR Part 613) require that RTPs have at least a 20-year horizon. For the 2018 RTP/SCS TCAG has selected a horizon year of 2042."[17] "In addition, federal Clean Air Act transportation conformity requirements apply in all MPO nonattainment and maintenance areas under Section 176(c) of the Clean Air Act (CAA), as amended. "Transportation conformity" requires that federal funding and approval are given to transportation plans, programs and projects that are consistent with the air quality goals established by a State Implementation Plan (SIP). For MPO nonattainment regions, the MPO, Federal Highway Administration (FHWA), and Federal Transit Administration (FTA) are responsible for making the RTP conformity determination."[18] "The state requirements for RTPs (Section 65080 of the California Government Code) largely mirror the federal requirements and require Metropolitan Planning Organizations (MPOs)/Regional Transportation Planning Agencies (RTPAs) in urban areas to adopt and submit an updated RTP to the California Transportation Commission (CTC) and the California Department of Transportation (Caltrans) every four years. To ensure a degree of statewide consistency in the development of RTPs, the CTC under Government Code Section 14522 prepared RTP Guidelines.1 The most recently adopted guidelines by the CTC are the 2017 Regional Transportation Plan Guidelines for Metropolitan Planning Organizations. The adopted guidelines include a requirement for program level performance measures, which include objective criteria that reflect the goals and objectives of the RTP."[19] Also, pursuant to SB 375, TCAG is required to submit a Sustainable Communities Strategy (integrated with the RTP) to CARB for the purpose of determining whether the GHG reduction targets have been met.[20] The Tulare County Association of Government has prepared the 2018 Regional Transportation Plan. Specific policies that may apply to the Proposed Project are listed as follows:

TRANSPORTATION SYSTEM MANAGEMENT (TSM) TRANSPORTATION DEMAND MANAGEMENT (TDM) MEASURES, TRANSPORTATION CONTROL MEASURES (TCM), and INTELLIGENT TRANSPORTATION SYSTEMS (ITS) PROGRAMS

"GOAL: IMPROVE TRANSPORTATION MOBILITY AND OPERATIONS BY IMPROVING AND UTILIZING TSM STRATEGIES, TDM MEASURES, TCMs, AND ITS PROGRAMS.

TRANSPORTATION SYSTEM MANAGEMENT (TSM)

[16] Tulare County Association of Governments 2018 RTP. Program EIR. 3.0 Project Description. Page 3.0-1 https://tularecog.org/tcag/planning/rtp/rtp-20181/

[17] Ibid. 3.0-6.

[18] Op. Cit.

[19] Op. Cit. 3.0-7.

[20] Op. Cit.

(TSM strategies coordinate travel modes through operating, regulating, and service policies to achieve maximum efficiency and productivity for the whole circulation system.)

Objective: Improve vehicular flow and efficiency by promoting and programming operational improvement projects.

Policies:

1. Encourage adaptive signal timing and/or coordination programs in urbanized areas.
2. Support implementation of bus pullouts for stops on busy roadways.
3. Encourage removal of on-street parking in heavily congested areas.
4. Recommend that traffic is channeled and access is controlled on arterials and major collectors.
5. Support installation of adequate left and right turn pockets to allow increased vehicle queuing/stacking, as necessary.
6. Encourage improvements in design of signalized intersections to improve turning for large vehicles.
7. Support passing lanes, roundabout construction, and other operational improvements when warranted.
8. Encourage bicycle-friendly loop detectors at intersections.

TRANSPORTATION CONTROL MEASURES (TCMs)

(TCMs reduce vehicle trips, vehicle miles traveled, vehicle idling, and/or traffic congestion to reduce motor vehicle emissions.)

Objective: Support the reduction of automotive emissions and fuel consumption associated with urban travel.

Policies:

1. Evaluate the feasibility of implementing Express Bus and/or transit bus preemption/priority.
2. Evaluate future need for ramp metering.
3. Continue to coordinate and implement the College of Sequoias student transit pass program and the Tulare County Regional T-Pass.
4. Continue to participate in the Calvans vanpool program, providing incentives, if feasible.
5. Promote and implement projects using (or composed of) traffic calming devices and strategies.
6. Encourage cities to consider parking policies, including pricing and development parking requirements.
7. Encourage cities to provide signal prioritization for transit vehicles.

INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

(Intelligent Transportation Systems are a range of technologies including processing, control, communication, and electronics that are applied to a transportation system. It also includes an advanced approach to traffic management.)

Objective: Encourage the use of Intelligent Transportation Systems (ITS) technology by participating in the upkeep and implementation of the San Joaquin Valley Intelligent Transportation System Strategic Deployment Plan and the local Urban Area ITS Plan(s).

Policies

1. Periodically update Tulare County Region's Urbanized Area ITS Plan(s).
2. Support and update the San Joaquin Valley ITS Strategic Deployment Plan as needed.
3. Support Intelligent Transportation Systems for upgrading state highway interchanges from rural to urban standards.
4. Coordinate ITS improvements and infrastructure with public safety agencies."[21]

Tulare County General Plan Policies

The Tulare County General Plan has a number of policies that apply to projects within County of Tulare. General Plan policies that relate to the proposed Project are listed below.

LU-7.6 Screening - The County shall require landscaping to adequately screen new industrial uses to minimize visual impacts.

TC-1.14 Roadway Facilities - As part of the development review process, new development shall be conditioned to fund, through impact fees, tonnage fees, and/or other mechanism, the construction and maintenance of roadway facilities impacted by the project. As projects or locations warrant, construction or payment of pro-rata fees for planned road facilities may also be required as a condition of approval.

TC-1.15 Traffic Impact Study - The County shall require an analysis of traffic impacts for land development projects that may generate increased traffic on County roads. Typically, applicants of projects generating over 100 peak hour trips per day or where LOS "D" or worse occurs, will be required to prepare and submit this study. The traffic impact study will include impacts from all vehicles, including truck traffic. [Note, effective January 1, 2020 Vehicle Miles Travelled, (VMT) superseded LOS as the CEQA threshold metric.]

TC-1.16 County Level Of Service (LOS) Standards - The County shall strive to develop and manage its roadway system (both segments and intersections) to meet a LOS of "D" or better in accordance with the LOS definitions established by the Highway Capacity Manual.

[21] Tulare County Association of Governments 2018 RTP. Program EIR. 2.0 Policy Element. Pages A-15 through A-17. Accessed August 2021 at: https://tularecog.org/tcag/planning/rtp/

HS-1.9 Emergency Access - The County shall require, where feasible, road networks (public and private) to provide for safe and ready access for emergency equipment and provide alternate routes for evacuation.

IMPACT EVALUATION

Would the project:

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Project Impact Analysis: ***Less Than Significant Impact***

Operation

The compost site would be accessed from Avenue 328 via an existing ingress/egress roadway that currently services the landfill. There would be no increase in the currently permitted tonnage limits stated in the Solid Waste Facility Permit for the landfill, as the current green waste and wood waste is being diverted to a different area of the site now, and the new organic wastes tons would be diverted directly to the compost facility instead of to its current area within the existing landfill.

The biomass conversion facility would be located adjacent to the proposed composting site. Since the biomass conversion facility would use wood waste that would otherwise be sent to the existing landfill, it will not result in any additional vehicle trips (other than employee vehicle trips).

Employee Trips

The Project is expected to utilize approximately 10-15 employees. To determine the number of daily trips that would occur, the "General Light Industrial" (ITE code 110) category was used for the Project, since there is no specific ITE category for a landfill/composting facility. According to the ITE manual, the Project would result in an additional 45 daily trips. The relatively minor amount of employee trips is not anticipated to have any significant impact on surrounding roadway and intersection operations.

Determination

The proposed Project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system nor would it conflict with an applicable congestion management program. The development of the composting and biomass conversion facility would not result in an increase in population nor corresponding to an increase in vehicle travel; therefore, new or modified intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit would not be required.

Cumulative Impact Analysis: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is Tulare County. As identified previously, there would be no increase in the currently permitted tonnage limits stated in the Solid Waste Facility Permit for the landfill, as the current green waste and wood waste is being diverted to a different area of the site now, and the new organic wastes tons would be diverted directly to the compost facility instead of to the existing landfill. The only new trips occurring associated with the Project are the employee trips, which are estimated to be 45 trips per day (with 10-15 employees). Because of the minimal number of new vehicle trips, it is determined that there would be no cumulative impact. As such, ***Less Than Significant Cumulative Impact*** related to this Checklist item will occur.

Conclusion: ***Less Than Significant Impact***

As noted earlier, ***Less Than Significant Project-specific or Cumulative Impacts*** related to this Checklist Item will occur.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Project Impact Analysis: ***Less Than Significant Impact***

Senate Bill 743 (SB 743) was passed in 2013 by the California legislature and was signed into law by the governor. In the areas where SB 743 is implemented, delay-based metrics such as roadway capacity and level of service will no longer be the performance measures used for the determination of the transportation impacts of projects in studies conducted under CEQA. Instead, new performance measures such as vehicle miles travelled (VMT) or other similar measures will be used. July 1, 2020 was the statewide implementation date for SB 743. In June 2020, Tulare County adopted its SB 743 Guidelines which provided screening criteria based on project size and other criteria. The small project criteria is summarized as follows; "Some projects are small enough that they can be presumed to have a less than significant transportation impact without doing a detailed VMT analysis. For Tulare County, projects that generate less than 500 trips per day can be presumed to have a less than significant impact (see Appendix D [of the County's Guidelines] for additional information on how this value was determined). Trip generation would normally be determined using the current edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. Other potential sources include the San Diego Association of Governments (SANDAG) trip generation guide (Not So Brief Guide of Vehicular Traffic Generation Rates in the San Diego Region, April 2002), articles in the ITE Journal, as well as trip generation rates obtained from other accepted sources. In some cases, project applicants may choose to conduct counts of existing similar facilities in order to determine trip generation rates.[22] The 10-15 employees anticipated to be utilized for the Project will generate an additional 45 trips per day in accordance with

[22] County of Tulare. SB 743 Guidelines. June 2020. Page 6. Accessed October 2021 at: https://tularecounty.ca.gov/rma/index.cfm/rma-documents/planning-documents/tulare-county-sb-743-guidelines-final/

implementation of the Project. Further, as allowed in SB 743, goods movement trips are exempt. As noted in Tulare County SB 743 Guidelines, "It is important to note that goods movement (e.g., the transport of raw or finished products from one location to another, for example, transfer of milk to an ice cream producing plant and then the transfer of ice cream to a distributor or directly to a retailer) is not subject to SB 743 and only passenger trips need to be considered in a VMT analysis."[23] As noted earlier, the current green waste and wood waste is currently being diverted to a different area of the site now, and the new organic wastes tons would be diverted directly to the compost facility instead of to its current area within the existing landfill. As such, the Project does not change the number of haul trucks used to import green or wood waste. Since "raw" products (i.e., green or wood waste) and finished product (i.e., composting material) are considered goods movement; they are exempt from VMT.

Therefore, as goods movement is exempt, the Project is below the established threshold of 500 trips per day and would not result in a significant impact. No mitigation is required.

As such, the Project would result in a ***Less Than Significant Impact*** to this resource.

Cumulative Impact Analysis: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

As there will be a less than significant impact on the Project level, a ***Less Than Significant Cumulative Impact*** related to this Checklist Item will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***Less Than Significant Impact***

As noted earlier, ***Less Than Significant Project-specific or Cumulative Impacts*** related to this Checklist Item will occur.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Project Impact Analysis: ***Less Than Significant Impact***

The proposed composting facility and biomass conversion facility would be located on approximately 24 acres at the southwest corner of the existing 634-acre landfill. The 24-acre area would be located in a soil borrow pit approximately 20 feet below and grade. Operation of the Project will be performed on a self-contained, 4.4-acre concrete pad. Additionally, a 50,000 square foot processing building, approximately 14 acres of asphaltic concrete paved

[23] Ibid. iv.

pads for receiving, pre-processing, curing, screening, and storage, and a 35.9 acre-foot (AF) lined storm water pond to collect contact water will be installed. A 20-foot-wide perimeter fire lane would surround the composting site. An additional 20-foot fire lane would be placed between the phased composting areas and distinct operational areas. The 24-acre area is currently vacant and graded. Access to this area will be from the main entrance along Avenue 328. Once inside the landfill, vehicles utilizing the composting facility will be directed to the area. All other existing landfill traffic patterns will remain the same as existing conditions.

The existing site access/egress is located at a sufficient distance from any intersection to allow for safe vehicular access/egress to and from the site. The site is self-contained and does not impact any surrounding land uses.

Cumulative Impact Analysis: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

As noted earlier, no significant design changes that would cause a hazard are proposed. As such, ***Less Than Significant Cumulative Impact*** related to this Checklist Item will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***No Impact***

As noted earlier, ***Less Than Significant Project-specific or Cumulative Impacts*** related to this Checklist Item will occur.

d) Result in inadequate emergency access?

Project Impact Analysis: ***Less Than Significant Impact***

The Project site is currently accessed/egressed via an existing entrance road from Avenue 328. There is also an alternate entrance (closed to the public) along Road 80. Emergency access to the site will remain as approved on the existing landfill, and adequate space will be maintained for emergency vehicles to turn around on site. As such, there will be a ***Less Than Significant Impact*** to this resource.

Cumulative Impact Analysis: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

The existing site currently has adequate access/egress for emergency vehicles. The Project will not cumulatively limit access/egress to any of the surrounding properties. Therefore, a ***Less Than Significant Impact*** to this Checklist Item will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***Less Than Significant Impact***

As noted earlier, ***Less Than Significant Project-specific or Cumulative Impacts*** related to this Checklist Item will occur.

DEFINITIONS AND/ORACRONYMS

Acronyms

AADT	Average Annual Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
CAA	Federal Clean Air Act
CCAA	California Clean Air Act
CARB	California Air Resources Board
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CTC	California Transportation Commission
COLT	Porterville Transit
DART	Dinuba Area Transit
DEIR	Draft Environmental Impact Report
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HCM	Highway Capacity Manual (2010)
IGR	Intergovernmental Review
ITS	Intelligent Transportation Systems
LOS	Level of Service (LOS)
LU	Land Use
MPO	Metropolitan Planning Organization
OPR	Office of Planning and Research
PHF	Peak hour factor
RMA	Resource Management Agency (of Tulare County)
RTP	Regional Transportation Plan
TCM	Transportation Control Measures
TDM	Transportation Demand Management
TIME	Tulare Intermodal Express
TC	Traffic and Circulation
TCAG	Tulare County Association of Governments
TCR	Transportation Concept Report
TCaT	Tulare County Area Transit
TIS	Traffic Impact Study
TSM	Transportation System Management
SB	Senate Bill (State of California)
SIP	State Implementation Plan
SR	State Route
V/C	volume/capacity
V-Line	Visalia-Fresno intercity service
VMT	Vehicle Miles Travelled

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Chapter 3.9
Tribal Cultural Resources

SUMMARY OF FINDINGS

The proposed Project will result in a ***Less Than Significant Impact With Mitigation*** to Tribal Cultural Resources. A records search was performed through the California Historical Resources Information System (CHRIS), which is included in Appendix "C" of this draft Environmental Impact Report (draft EIR or EIR). The records search included recorded historical and archaeological sites and maps of the affected area by personnel at the Southern San Joaquin Information Center (SSJVIC), located at California State University, Bakersfield, California. A Sacred Lands File Request was also submitted to the Native American Heritage Commission (NAHC). Letters and follow-up phone calls were made to tribal organizations on the NAHC contact list, to determine whether tribal cultural resources were known in or near the Project. These investigations determined no previously reported cultural resources within the project area and three previous cultural studies within the area. There are two recorded resources within a one-half mile radius of the Project site; both unnamed ditches. This information, and additional analysis in the resource discussion item, are used as the basis for determining that this Project will result in a less than significant impact with mitigation.

INTRODUCTION

California Environmental Quality Act (CEQA) Requirements

Several CEQA statutes and guidelines address requirements for cultural resources, including historic and archaeological resources. If a proposed Project may cause a substantial adverse change in the significance of a historical resource, then the project may be considered to have a significant effect on the environment, and the impacts must be evaluated under CEQA.[1] The definition of "historical resources" is included in Section 15064.5 of CEQA Guidelines, and includes both historical and archaeological resources. "Substantial adverse change" is defined as "physical demolition, destruction, relocation, or alteration of the resource…"

Section 15064.5 also provides guidelines when there is a probable likelihood of Native American remains existing in the project site. Provisions for the accidental discovery of historical or unique archaeological resources accidentally discovered during construction include a recommendation for evaluation by a qualified archaeologist, with follow up as necessary.

Public Resources Code Section 5097.5 prohibits excavation or removal of any "vertebrate paleontological site…or any other archaeological, paleontological or historical feature, situated on

[1] California Public Resources Code. Division 13. Chapter 2.6. Section 21084.1. Accessed July 2021 at: http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum=21084.1.

public lands, except with express permission of the public agency having jurisdiction over such lands."

This section of the draft EIR for the proposed Project meets CEQA requirements by addressing potential impacts to cultural resources on the proposed Project site. The "Environmental Setting" section provides a description of cultural resources in the region, with special emphasis on the proposed Project site and vicinity. The "Regulatory Setting" section provides a description of applicable State and local regulatory policies. Results of the reports from CHRIS are included. A description of potential impacts is provided, along with feasible mitigation measures to reduce the impacts to less than significant.

CEQA Thresholds of Significance

"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:

- Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources a defined in Public Resources Code section 5020.1(k), or
- 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."[2]

ENVIRONMENTAL SETTING

"Tulare County lies within a culturally rich province of the San Joaquin Valley. Studies of the prehistory of the area show inhabitants of the San Joaquin Valley maintained fairly dense populations situated along the banks of major waterways, wetlands, and streams. Tulare County was inhabited by aboriginal California Native American groups consisting of the Southern Valley Yokuts, Foothill Yokuts, Monache, and Tubatulabal. Of the main groups inhabiting the Tulare County area, the Southern Valley Yokuts occupied the largest territory."[3]

"California's coast was initially explored by Spanish (and a few Russian) military expeditions during the late 1500s. However, European settlement did not occur until the arrival into southern California of land-based expeditions originating from Spanish Mexico starting in the 1760s. Early settlement in the Tulare County area focused on ranching. In 1872, the Southern Pacific Railroad entered Tulare County, connecting the San Joaquin Valley with markets in the north and east. About the same time, valley settlers constructed a series of water conveyance systems (canals, dams, and ditches) across the valley. With ample water supplies and the assurance of rail transport

[2] CEQA Guidelines. Appendix "G", Item XVIII. Tribal Cultural Resources.
[3] Tulare County General Plan Update 2030. Page 8-5.

for commodities such as grain, row crops, and fruit, a number of farming colonies soon appeared throughout the region."[4]

"The colonies grew to become cities such as Tulare, Visalia, Porterville, and Hanford. Visalia, the County seat, became the service, processing, and distribution center for the growing number of farms, dairies, and cattle ranches. By 1900, Tulare County boasted a population of about 18,000. New transportation links such as SR 99 (completed during the 1950s), affordable housing, light industry, and agricultural commerce brought steady growth to the valley. The California Department of Finance estimated the 2007 Tulare County population to be 430,167."[5]

"Tulare County's known and recorded cultural resources were identified through historical records, such as those found in the National Register of Historic Places, the Historic American Building Survey/Historic American Engineering Record (HABS/HAER), the California Register of Historic Resources, California Historical Landmarks, and the Tulare County Historical Society list of historic resources."[6]

Due to the sensitivity of many prehistoric, ethnohistoric, and historic archaeological sites, locations of these resources are not available to the general public. The Information Center at California State University, Bakersfield houses records associated with reported cultural resources surveys, including the records pertinent to sensitive sites, such as burial grounds, important village sites, and other buried historical resources protected under state and federal laws.

As described earlier, a CHRIS search was performed on behalf of the Project on March 2, 2021, which included recorded historical and archaeological sites and maps of the affected area. The results indicate that no cultural resources have been recorded on-site; however, there are two recorded resources within one-half mile of the site; two unnamed ditches.

Natural Setting

The Project area is located approximately one (1) mile north of the City of Visalia, in an agricultural area of the San Joaquin Valley. The site is highly developed and currently utilized for landfill operations. Its elevation is approximately 290-298 feet above sea level. The St. John's River lies approximately 1.3 miles to the north of the Project site and is identified as a Riverine Habitat by the National Wetlands Inventory (NWI) Mapper[7].

Prehistory

"Although a relatively small amount of information is known concerning the earliest occupants of the Tulare County region, it is clear that much of the San Joaquin Valley and Sierra foothills have been occupied throughout most of the Holocene Epoch (~10,000 B.P. [Before Present] to the

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[4] Ibid.

[5] Op. Cit. Page 8-6.

[6] Tulare County General Plan 2030 Update *Background Report.* Page 9-56.

[7] United States Environmental Protection Agency, NEPAssist. National Wetlands Inventory Mapper. Accessed July 2021 at: https://nepassisttool.epa.gov/nepassist/nepamap.aspx.

present). The reconstruction of cultures inhabiting the subject area during the late Paleo-Indian to early Archaic Periods (~9,000 B.P. to ~3,000 B.P.) has proven difficult based on erosion and depositional patterns of the San Joaquin. Over the millennia, these processes have redeposited or deeply buried the evidence of much of those early cultures."[8]

"A number of investigations into San Joaquin Valley prehistory have been conducted in Tulare County. Much of the literature has supported the notion that the inhabitants of the San Joaquin Valley maintained fairly dense populations situated along the banks of major waterways, wetlands, and streams. Although many sites are more obvious, many of the earliest archaeological records for the region have likely been buried beneath the vast alluvial deposits created by erosion and depositional processes indicative of the valley and Sierra foothills, especially over the last 9,000 years.[9]"

Ethnohistory

"Tulare County was inhabited by indigenous California Indian groups consisting of the Southern Valley Yokuts, Foothill Yokuts, Monache, and Tubatulabal. Most information regarding these groups is based on Spanish government and Franciscan mission records of the 18th and 19th centuries, and in studies conducted during the 1900s to 1930s by American and British ethnographers. The ethnographic setting presented below is derived from the early works, as compiled by W. J. Wallace, Robert F.G. Spier, and Charles R. Smith (Handbook of North American Indians, Volume 8, Washington: Smithsonian Institution, 1978), with statistical information provided by the California Native American Heritage Commission."[10]

"Of the five main groups inhabiting the Tulare County area, the Southern Valley Yokuts occupied the largest territory, which is defined roughly by the crest of the Diablo Range on the west and the foothills of the Sierra Nevada on the east, and from the Kings River on the north, to the Tehachapi Mountains on the south. The Foothill Yokuts inhabited the western slopes of the Sierra Nevada, between the Fresno River and Kern River, with settlements generally occurring between the 2,000 to 4,000- foot elevations. The Tubatulabal inhabited the Sierra Nevada Mountains, at the higher elevations, near Mt. Whitney in the east, extending westward along the drainages of the Kern River, and the Kern RiverSouth Fork. The Monache were comprised of six small groups that lived in the Sierra east of the Foothill Yokuts, in locations ranging between 3,000 to 7,000 foot elevations."[11]

Historic Setting

"California's coast was initially explored by Spanish and some Russian military expeditions during the late 1500s. However, European settlement did not occur until the arrival into southern California of land-based expeditions originating in Spanish Mexico. The early groups arrived during the 1760s, and consisted of Spanish military, Mexican Indian, Franciscan missionary, and

8 Tulare County General Plan 2030 Update Background Report. Page 9-53.

[9] Ibid.

[10] Op. Cit. 9-53, 9-54.

[11] Ibid.

citizen colonists. Thus began what is today known as the Spanish Period (1769-1822). This period includes the establishment of a chain of 21 Franciscan missions, constructed in old California, from San Diego to Sonoma. With the establishment of the missions came the exertion of Spanish religious and military authority over California's indigenous population, and the development of presidios, civilian ranchos, and pueblos throughout California. Although the region known today as Tulare County did not come under the jurisdiction of a mission proper, periodically small numbers of indigenous tribal members fleeing the control of distant missions would enter the valley."[12]

"In 1822, the colonial territory of Mexico won its independence from Spain, and established a republic. Because it lay strategically situated within the new republic's northern frontier, California remained a territory of Mexico, and home to a new group of ranchers and settlers that arrived to take advantage of large land grants being offered by the new government. During the 1840s, Mexico awarded five grants (known as ranchos) on what later became Tulare County lands. However, in 1860, Kern County was formed from a portion of Tulare County; all five Tulare County ranchos were included within the new Kern County boundaries."[13]

"In 1846, hostilities between Mexico and the United States led to war. Two years later (1848), war ended, and the United States and Mexico signed the Treaty of Guadalupe Hidalgo. As part of the post-war arrangements, Mexico ceded California and the Southwest to the United States. In 1848-1849, the discovery of gold in northern California brought tens of thousands of itinerant miners, merchants, and speculators. By 1850, the huge influx of prospective citizens allowed California to skip the usual stage of territorial status, and enter the union as a state. Two years later (1852), Tulare County was formed from the southern portion of Mariposa County. And, although Tulare County is listed today as the seventh largest of California's 58 counties (containing 4,840 square miles), several other counties were subsequently carved from Tulare, including Fresno (1856), Kern (1860), Inyo (1866), and Kings Counties (1893)."[14]

"Early settlement in the Tulare County area focused on ranching. In 1872, the Southern Pacific Railroad entered Tulare County, connecting the San Joaquin Valley with markets in the north and east. About the same time, valley settlers constructed a series of water conveyance systems (canals, dams, and ditches) across the valley. With ample water supplies and the assurance of rail transport for commodities such as grain, row, crops, and fruit, a number of farming colonies soon appeared throughout the region. Colonies such as Mt. Whitney, Orosi, Oakview, Holliday, Vina, and McCall's offered affordable farmland, water, and modern transportation. The colonies grew to become cities such as Tulare, Visalia, Porterville, and Hanford. Visalia, the county seat, became the service, processing, and distribution center for the growing number of farms, dairies, and cattle ranches. By 1900, Tulare County boasted a population of about 18,000. New transportation links such as Highway 99 (completed during the 1950s), affordable housing, light industry, and agricultural commerce brought steady growth to the valley. The U.S. Census Bureau estimated the 2007 Tulare County population to be 429,000 (TCAG, 2007)."[15]

[12] Ibid.
[13] Op. Cit. 9-55.
[14] Ibid.
[15] Ibid.

Records Search Results and Native American Consultation

Upon written request, the NAHC is required to conduct a Sacred Lands File search for sites located on or near a project site. The NAHC maintains a contact list of Native American Tribes as having traditional lands located within the County's jurisdiction. Tulare County RMA submitted a Sacred (SLF) to the NACH in order to obtain a list of Native American Tribes the County should consult regarding tribal cultural resources (see Appendix "C"). The NAHC provided a letter to the County letter from the NACH dated March 12, 2021 describing negative results of the SLF search.

A records search conducted by the Southern San Joaquin Valley Information Center (SSJVIC) resulted in no previously reported cultural resources within the project area (see Appendix "C"). There have been no previous cultural resource studies conducted within the Project area; however, there have been three cultural resource studies conducted within a one-half mile radius. There are no recorded resources within the Project area and there are two recorded resources within the one-half mile radius; both unnamed ditches. There are no resources that are listed in the National Register of Historic Resources, the California Points of Historical Interest, California Inventory of Historic Resources, or the California State Historic Landmarks.

REGULATORY SETTING

Federal Agencies & Regulations

The National Historic Preservation Act

"With passage of the National Historic Preservation Act (NHPA) in 1966, Congress made the federal government a full partner and a leader in historic preservation. While Congress recognized that national goals for historic preservation could best be achieved by supporting the drive, enthusiasm, and wishes of local citizens and communities, it understood that the federal government must set an example through enlightened policies and practices.

In the words of the NHPA, the federal government's role is to "provide leadership" for preservation, "contribute to" and "give maximum encouragement" to preservation, and "foster conditions under which our modern society and our prehistoric and historic resources can exist in productive harmony." Indeed, an underlying motivation for passage of the NHPA was to transform the federal government from an agent of indifference, frequently responsible for needless loss of historic resources, to a facilitator, an agent of thoughtful change, and a responsible steward for future generations.

Section 106 of the NHPA requires that federal agencies take into account the effects of their actions on historic properties and give the ACHP an opportunity to comment on any effects. The ACHP has issued regulations that guide how agencies should fulfill this responsibility."[16]

[16] Advisory Council on Historic Preservation. National Historic Preservation Act. Accessed July 2021 at: https://www.achp.gov/preservation-legislation.

State Agencies & Regulations

California State Office of Historic Preservation (OHP)

"The California State Office of Historic Preservation (OHP) is responsible for administering federally and state mandated historic preservation programs to further the identification, evaluation, registration and protection of California's irreplaceable archaeological and historical resources under the direction of the State Historic Preservation Officer (SHPO), appointed by the governor, and the State Historical Resources Commission, a gubernatorial appointee, and the State Historic Resources Commission."[17]

"OHP's responsibilities include: Identifying, evaluating, and registering historic properties; Ensuring compliance with federal and state regulatory obligations; Encouraging the adoption of economic incentives programs designed to benefit property owners; Encouraging economic revitalization by promoting a historic preservation ethic through preservation education and public awareness and, most significantly, by demonstrating leadership and stewardship for historic preservation in California."[18]

"The California Historical Resources Information System (CHRIS) maintains a wide range of documents and materials relating to historical resources (e.g., buildings, structures, objects, historic and archaeological sites, landscapes, districts). The CHRIS operates structurally through the California Office of Historic Preservation (OHP), nine Information Centers (ICs), and the State Historical Resources Commission (SHRC). The OHP administers and coordinates the CHRIS and presents proposed CHRIS policies to the SHRC, which approves these polices in public meetings, under authorization of Public Resources Code 5020.4(a)(2) and 5020.4(a)(3). Policies are codified in the CHRIS Information Center Rules of Operations Manual.[19]

"The CHRIS Information Centers (ICs) are located on California State University and University of California campuses in regions throughout the state. The nine ICs provide historical resources information, generally on a fee-for-service basis, to local governments, state and federal agencies, Native American tribes, and individuals with responsibilities under the National Environmental Policy Act, the National Historic Preservation Act, and the California Environmental Quality Act (CEQA), as well as to the general public. Currently, the OHP and the ICs each maintain separate parts of the CHRIS Inventory. The OHP's portion of the Inventory is forwarded to the ICs according to their county-based service areas so that it can be accessed by CHRIS users. It is statewide in scope, but primarily includes information that has been submitted directly to the OHP. Each of the ICs maintains a part of the CHRIS Inventory that although it is geographically limited to that IC's service area, includes both information forwarded from the OHP and information that has been submitted directly to that IC by users of the CHRIS. These different parts of the CHRIS Inventory are a combination of paper documents and maps and digital files (whether submitted digitally or converted to that format by the CHRIS). The collective information managed

[17] California State Parks. Office of Historic Preservation. Mission and Responsibilities. Accessed July 2021 at: https://ohp.parks.ca.gov/?page_id=1066.

[18] Ibid.

[19] California State Parks. California Office of Historic Preservation. California Historical Resources Information System. Accessed July 2021 at: http://ohp.parks.ca.gov/?page_id=1068.

electronically in the CHRIS Inventory is generally referred to as the CHRIS Database."[20] Tulare, Fresno, Kern, Kings and Madera counties are served by the Southern San Joaquin Valley Historical Resources Information Center (Center), located at California State University, Bakersfield, in Bakersfield, CA. The Center provides information on known historic and cultural resources to governments, institutions and individuals.[21]

A historical resource may be eligible for inclusion in the California Register of Historical Resources (CRHR) if it meets the following four Criteria for Designation:

> "Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States (Criterion 1).
>
> Associated with the lives of persons important to local, California or national history (Criterion 2).
>
> 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 (Criterion 3).
>
> Has yielded, or may be likely to yield, information important in prehistory or local, California or national history (Criterion 4)."[22]

Tribal Consultation Requirements: SB 18 (Burton, 2004) [23]

On September 29, 2004, Governor Schwarzenegger signed Senate Bill 18, Tribal Consultation Guidelines, into law. This bill amended Section 815.3 of the Civil Code, to amend Sections 65040.2, 65092, 65351, 65352, and 65560 of, and to add Sections 65352.3, 65352.4, and 65562.2 to, the Government Code, relating to traditional tribal cultural Places. SB 18, enacted March 1, 2005, creates a mechanism for California Native American Tribes to identify culturally significant sites that are located within public or private lands within the city or county's jurisdiction. SB 18 requires cities and counties to contact, and offer to consult with, California Native American Tribes before adopting or amending a General Plan, a Specific Plan, or when designating land as Open Space, for the purpose of protecting Native American Cultural Places (PRC 5097.9 and 5097.993). The Native American Heritage Commission (NAHC) provides local governments with a consultation list of tribal governments with traditional lands or cultural places located within the Project Area of Potential Effect. Tribes have 90 days from the date on which they receive notification to request consultation, unless a shorter timeframe has been agreed to by the tribe.

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[20] California State Parks. California Office of Historic Preservation. About the CHRIS Information Centers. Accessed July 2021 at: http://ohp.parks.ca.gov/?page_id=28730.

[21] California State Parks. California Office of Historic Preservation. CHRIS Information Center Locations and Contacts. Accessed July 2021 at: https://ohp.parks.ca.gov/?page_id=30331.

[22] California State Parks. Office of Historic Preservation. California Register of Historical Resources. Accessed July 2021 at: http://www.ohp.parks.ca.gov/?page_id=21238.

[23] California Legislative Information. Senate Bill No. 18, Chapter 905. Accessed July 2021 at: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200320040SB18.

Tribal Consultation Requirements: AB 52 (Gatto, 2014)[24]

This bill was approved by Governor Brown on September 25, 2014 and became effective July 1, 2015. This bill amended Section 5097.94 of, and to add Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3 to, the Public Resources Code, relating to Native Americans. The bill specifies that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource, as defined, is a project that may have a significant effect on the environment. This bill requires a lead agency to begin consultation with a California Native American tribe that is traditionally and culturally affiliated (can be a tribe anywhere within the State of California) with the geographic area of the proposed project, if the tribe requested to the lead agency, in writing, to be informed by the lead agency of proposed projects in that geographic area and the tribe requests consultation, prior to determining whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project.

As shown in the NAHC website, "In 1976, the California State Government passed AB 4239, establishing the Native American Heritage Commission (NAHC) as the primary government agency responsible for identifying and cataloging Native American cultural resources. Up until this point, there had been little government participation in the protection of California's cultural resources. As such, one of the NAHC's primary duties, as stated in AB 4239, was to prevent irreparable damage to designated sacred sites, as well as to prevent interference with the expression of Native American religion in California.

Furthermore, the bill authorized the Commission to act in order to prevent damage to and insure Native American access to sacred sites. Moreover, the Commission could request that the court issue an injunction for the site, unless it found evidence that public interest and necessity required otherwise.

In addition, the bill authorized the commission to prepare an inventory of Native American sacred sites located on public lands and required the commission to review current administrative and statutory protections accorded to such sites.

In 1982, legislation was passed authorizing the Commission to identify a Most Likely Descendant (MLD) when Native American human remains were discovered any place other than a dedicated cemetery. MLDs were granted the legal authority to make recommendations regarding the treatment and disposition of the discovered remains. These recommendations, although they cannot halt work on the project site, give MLDs a means by which to ensure that the Native American human remains are treated in the appropriate manner.

Today, the NAHC provides protection to Native American human burials and skeletal remains from vandalism and inadvertent destruction. It also provides a legal means by which Native American descendants can make known their concerns regarding the need for sensitive treatment

[24] California Legislative Information. Assembly Bill No. 52, Chapter 532. Accessed July 2021 at: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB52.

and disposition of Native American burials, skeletal remains, and items associated with Native American burials."[25]

CEQA Guidelines: Archaeological Resources

Section 15064.5(c) of CEQA Guidelines provides specific guidance on the treatment of archaeological resources as noted below.

"(1) When a Project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subdivision (a).

(2) If a lead agency determines that the archaeological site is an historical resource, it shall refer to the provisions of Section 21084.1 of the Public Resources Code, and this section, Section 15126.4 of the Guidelines, and the limits contained in Section 21083.2 of the Public Resources Code do not apply.

(3) If an archaeological site does not meet the criteria defined in subdivision (a), but does meet the definition of a unique archeological resource in Section 21083.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c–f) do not apply to surveys and site evaluation activities intended to determine whether the Project location contains unique archaeological resources.

(4) If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the Project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or EIR, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process."[26]

CEQA Guidelines: Human Remains

Public Resources Code Sections 5097.94 and 5097.98 provide guidance on the disposition of Native American burials (human remains), and fall within the jurisdiction of the Native American Heritage Commission:

"(d) When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the Project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code Section 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any Items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission. Action implementing such an agreement is exempt from:

[25] Native American Heritage Commission. About the Native American Heritage Commission. Accessed July 2021 at: http://nahc.ca.gov/about/.
[26] CEQA Guidelines. Section 15064.5(c).

(1) The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5).

(2) The requirements of CEQA and the Coastal Act."[27]

"(e) In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:

(1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

(A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and

(B) If the coroner determines the remains to be Native American:

1. The coroner shall contact the Native American Heritage Commission within 24 hours.

2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.

3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or

(2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.

(A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.

(B) The descendant identified fails to make a recommendation; or

(C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner."[28]

"(f) As part of the objectives, criteria, and procedures required by Section 21082 of the Public Resources Code, a lead agency should make provisions for historical or unique archaeological resources accidentally discovered during construction. These provisions should include an immediate evaluation of the find by a qualified archaeologist. If the find

[27] Ibid. Section 15064.5(d).
[28] Ibid. Section 15064.5(e).

is determined to be an historical or unique archaeological resource, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation should be available. Work could continue on other parts of the building site while historical or unique archaeological resource mitigation takes place."[29]

Local Policy & Regulations

Tulare County General Plan Policies

The Tulare County General Plan has a number of policies that apply to projects within the County of Tulare.[30] General Plan policies that relate to the proposed Project are listed below.

ERM-6.1 Evaluation of Cultural and Archaeological Resources - The County shall participate in and support efforts to identify its significant cultural and archaeological resources using appropriate State and Federal standards.

ERM-6.2 Protection of Resources with Potential State or Federal Designations - The County shall protect cultural and archaeological sites with demonstrated potential for placement on the National Register of Historic Places and/or inclusion in the California State Office of Historic Preservation's California Points of Interest and California Inventory of Historic Resources. Such sites may be of Statewide or local significance and have anthropological, cultural, military, political, architectural, economic, scientific, religious, or other values as determined by a qualified archaeological professional.

ERM-6.3 Alteration of Sites with Identified Cultural Resources - When planning any development or alteration of a site with identified cultural or archaeological resources, consideration should be given to ways of protecting the resources. Development can be permitted in these areas only after a site specific investigation has been conducted pursuant to CEQA to define the extent and value of resource, and Mitigation Measures proposed for any impacts the development may have on the resource.

ERM-6.4 Mitigation - If preservation of cultural resources is not feasible, every effort shall be made to mitigate impacts, including relocation of structures, adaptive reuse, preservation of facades, and thorough documentation and archival of records.

ERM-6.8 Solicit Input from Local Native Americans - The County shall continue to solicit input from the local Native American communities in cases where development may result in disturbance to sites containing evidence of Native American activity and/or to sites of cultural importance.

ERM-6.9 Confidentiality of Archaeological Sites - The County shall, within its power, maintain confidentiality regarding the locations of archaeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts.

[29] Ibid. Section 15064.5(f).
[30] Tulare County General Plan 2030 Update, Part 1 – Goals and Policies Report.

ERM-6.10 Grading Cultural Resources Sites - The County shall ensure all grading activities conform to the County's Grading Ordinance and California Code of Regulations, Title 20, § 2501 et. seq.

IMPACT EVALUATION

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)?

Project Impact Analysis: ***Less Than Significant Impact With Mitigation***

A resource may be listed as an historical resource in the California Register if it meets any of the following National Register of Historic Places criteria: Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; is associated with the lives of persons important in our past; 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; has yielded, or may be likely to yield, information important in prehistory or history.[31]

The proposed Project will result in no impact upon known sites 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). A records search was performed through the California Historical Resources Information System (CHRIS), which is included in Appendix "C." The records search included recorded historical and archaeological sites and maps of the affected area by personnel at the Southern San Joaquin Information Center (SSJVIC), located at California State University, Bakersfield, California. The results indicate that there have been no previous cultural resource studies conducted within the Project area; however, there have been three cultural resource studies conducted within a one-half mile radius. There are no recorded resources within the Project area and there are two recorded resources within the one-half mile radius; both unnamed ditches. There are no resources that are listed in the National Register of Historic Resources, the California Points of Historical

[31] California Legislative Information. Public Resources Code – PRC 5024.1. Accessed July 2021 at: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum=5024.1.

Interest, California Inventory of Historic Resources, or the California State Historic Landmarks.

A Sacred Lands File Request was also submitted to the Native American Heritage Commission (NAHC). Letters and follow-up emails were made to tribal organizations on the NAHC contact list, to determine whether tribal cultural resources were known in or near the Project. Although no historical, cultural, or tribal cultural resources were identified in the cultural study, it is possible that subsurface discoveries could occur. Also, as responses were received from the tribes that were notified in compliance with AB 52 requirements, however unlikely, it is not anticipated that Native American tribal cultural resources or remains will be found at any site within the Project planning area. As such, **Mitigation Measures 3.9-1** and **3.9-2** (which are identical to Mitigation Measures 3.3-1 and 3.3-3) are included in the unlikely event that Native American remains or tribal cultural resources are unearthed during any ground disturbance activities. These measure require that all work will immediately halt and the NAHC will be contacted to assess the findings and make appropriate mitigation recommendations. Therefore, there will be ***Less Than Significant Project-specific Impacts With Mitigation*** related to this Checklist Item.

Cumulative Impact Analysis: ***Less Than Significant Impact With Mitigation***

The proposed Project would contribute to cumulative impacts related to this Checklist Item if Project-specific impacts were to occur. As previously discussed, based on the analysis noted earlier, Project-specific impacts to Tribal Cultural Resources will be reduced to a level of ***Less Than Significant Project-specific.*** As such, there will be ***Less than Significant Cumulative Impacts With Mitigation*** with the implementation of **Mitigation Measures 3.9-1** and **3.9-2**.

Mitigation Measure(s): ***See Mitigation Measure 3.9-1 and 3.9-2***

Measure 3.9-1. In the event that archaeological or paleontological resources are discovered during site excavation, the County shall require that grading and construction work on the project site be immediately suspended until the significance of the features can be determined by a qualified archaeologist or paleontologist. In this event, the property owner shall retain a qualified archaeologist/paleontologist to make recommendations for measures necessary to protect any site determined to contain or constitute an historical resource, a unique archaeological resource, or a unique paleontological resource or to undertake data recover, excavation analysis, and curation of archaeological or paleontological materials. County staff shall consider such recommendations and implement them where they are feasible in light of Project design as previously approved by the County.

3.9-2. Consistent with Section 7050.5 of the California Health and Safety Code and (CEQA Guidelines) Section 15064.5, if human remains of Native American origin are discovered during Project construction, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Public Resources Code Sec. 5097). In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:

1. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
    a. The Tulare County Coroner/Sheriff must be contacted to determine that no investigation of the cause of death is required; and
    b. If the coroner determines the remains to be Native American:
        i. The coroner shall contact the Native American Heritage Commission within 24 hours.
        ii. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.
        iii. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code section 5097.98, or
2. Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.
    a. The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.
    b. The descendant fails to make a recommendation; or
    c. The landowner or his authorized representative rejects the recommendation of the descendent.

Therefore, as noted earlier, in the unlikely event that Tribal Cultural Resources are discovered, implementation of **Mitigation Measures 3.9-1** and **3.9-2** would result in ***Less Than Significant Project-specific With Mitigation*** because of this Project.

Conclusion: ***Less Than Significant Impact With Mitigation***

As previously discussed, based on the analysis noted earlier, impacts to Tribal Cultural Resources will be reduced to a level of ***Less Than Significant Project-specific and Cumulative Impacts With Mitigation*** with the implementation of **Mitigation Measures 3.9-1** and **3.9-2**.

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?

Project Impact Analysis: ***Less Than Significant Impact With Mitigation***

See earlier discussion at Item a).

Cumulative Impact Analysis: ***Less Than Significant Impact With Mitigation***

See earlier discussion at Item a).

Mitigation Measure(s): ***See Mitigation Measures 3.9-1 and 3.9-2***

See earlier discussion at Item a).

Conclusion: ***Less Than Significant Impact With Mitigation***

See earlier discussion at Item a).

DEFINITIONS AND/OR ACRONYMS

ACRONYMS

AB	Assembly Bill (in California)
CEQA	California Environmental Quality Act
CHRIS	California Historic Resources Information System
CRHR	California Register of Historical Resources
EIR	Environmental Impact Report
ERM	Environmental Resources Management
DEIR	Draft Environmental Impact Report
HABS/HAER	Historic American Building Survey/Historic American Engineering Record
ICs	Information Centers
MLD	Most Likely Descendant
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act of 1966
NWI	National Wetlands Inventory
OHP	California State Office of Historic Preservation
SB	Senate Bill (in California)
SHPO	State Historic Preservation Officers
SHRC	State Historical Resources Commission
SLF	Lands File Search
SR	State Route
SSJVIC	Southern San Joaquin Valley Information Center

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Chapter 4
Cumulative Impact Summary

CUMULATIVE IMPACTS ANALYSIS UNDER CEQA

Section 15355 Cumulative Impacts

"“Cumulative impacts” refer to 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. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.”[1]

Section 15130 Discussion of Cumulative Impacts

“(a) An EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable, as defined in section 15065(a)(3). Where a lead agency is examining a project with an incremental effect that is not “cumulatively considerable,” a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

(1) As defined in Section 15355, a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.

(2) When the combined cumulative impact associated with the project's incremental effect and the effects of other projects is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR. A lead agency shall identify facts and analysis supporting the lead agency's conclusion that the cumulative impact is less than significant.

(3) An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the

[1] CEQA Guidelines Section 15355

project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable.

(b) The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact. The following elements are necessary to an adequate discussion of significant cumulative impacts:

(1) Either:

(A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or

(B) A summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the lead agency.

(2) When utilizing a list, as suggested in paragraph (1) of subdivision (b), factors to consider when determining whether to include a related project should include the nature of each environmental resource being examined, the location of the project and its type. Location may be important, for example, when water quality impacts are at issue since projects outside the watershed would probably not contribute to a cumulative effect. Project type may be important, for example, when the impact is specialized, such as a particular air pollutant or mode of traffic.

(3) Lead agencies should define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used.

(4) A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available, and

(5) A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

(c) With some projects, the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis.

(d) Previously approved land use documents, including, but not limited to, general plans, specific plans, regional transportation plans, plans for the reduction of greenhouse gas emissions, and local coastal plans may be used in cumulative impact analysis. A pertinent discussion of cumulative impacts contained in one or more previously certified EIRs may be incorporated by reference pursuant to the provisions for tiering and program EIRs. No further cumulative impacts analysis is required when a project is consistent with a general, specific, master or comparable programmatic plan where the lead agency determines that the regional or area wide cumulative impacts of the proposed project have already been adequately addressed, as defined in section 15152(f), in a certified EIR for that plan.

(e) If a cumulative impact was adequately addressed in a prior EIR for a community plan, zoning action, or general plan, and the project is consistent with that plan or action, then an EIR for such a project should not further analyze that cumulative impact, as provided in Section15183(j)."[2]

Tulare County is the geographic extent for most impact analysis. This geographic area is the appropriate extent because of the following reasons:

1. The proposed Project is in Tulare County and County of Tulare is the Lead Agency; and
2. Tulare County General Plan polices applies to the proposed Project.

The basis for other resource specific cumulative impact analysis includes:

- For Air Quality and Greenhouse Gas Emissions it is the San Joaquin Valley Air Basin;
- For Biological Resources it is the San Joaquin Valley; and
- For Hydrology it is the Tulare Lake Basin.

PAST, PRESENT, PROBABLE FUTURE PROJECTS

Tulare County Association of Governments (TCAG) Blueprint Scenario

Under the Tulare County Regional Blueprint Preferred Growth Scenario, TCAG suggested a 25% increase over the status quo scenario to overall density by 2050. The preferred growth scenario principles included directing growth towards incorporated cities and communities where urban development exists and where comprehensive services and infrastructure are/or will be provided. Another relevant preferred scenario is the creation of urban separators around cities. The proposed Project location is outside incorporated areas and would be consistent with the goal of separating urban boundaries.[3]

[2] CEQA Guidelines, Section 15130
[3] Tulare County Associated of Governments Blueprint 2050, Preferred Scenario (2009).

Tulare County 2030 General Plan

The Cumulative Analysis outlined in the Tulare County General Plan Update 2030 Recirculated Draft EIR notes regional population growth (which in part was developed by TCAG) and a number major projects. Regional population projections are provided in the **Table 4-1**.[4]

Table 4-1
Regional Population Projections and Planning Efforts

Jurisdiction	General Plan Planning Timeframe	General Plan Buildout Population	Significant Environmental Impacts
City of Dinuba	2006-2026	33,750	Farmland conversion; conflicts with agricultural zoning and Williamson Act contracts; conversion of agricultural soils to non-agricultural use; regional air quality impacts; and climate change-greenhouse gases.
City of Woodlake			Unavailable.
City of Visalia	1991-2020	165,000	Air quality; biological resources; land use conflicts; noise; transportation/traffic; mass transit; agricultural resources; water supply; and visual resources.
City of Tulare	2007-2030	134,910	Farmland conversion; aesthetics; water supply; traffic; air quality; global climate change; noise; flooding from levee or dam failure; biological resources; and cultural resources.
City of Farmersville	2002-2025	12,160	Agricultural resources; agricultural land use conflicts; air quality; and traffic circulation.
City of Exeter			Information unavailable at time of analysis.
City of Lindsay	1990-2010	17,500	Air quality and farmland land conversion.
City of Porterville	2006-2030	107,300	Farmland conversion; air quality; noise; and biological resources.
City of Kingsburg	1992-2012	16,740	Farmland conversion and air quality.
City of Delano	2005-2020	62,850	Air quality; noise; farmland conversion; disruption of agricultural production; and conversion of agricultural soils to non-agricultural use.

[4] Tulare County General Plan 2030 Update Recirculated Draft EIR. Page 5-5 to 5-5.

Table 4-1
Regional Population Projections and Planning Efforts

Jurisdiction	General Plan Planning Timeframe	General Plan Buildout Population	Significant Environmental Impacts
County of Fresno	2000-2020	1,113,790	Farmland conversion; reduction in agricultural production; cancellation of Williamson Act Contracts; traffic; transit; bicycle facilities; wastewater treatment facilities; storm drainage facilities; flooding; police protection; fire protection; emergency response services; park and recreation facilities; library services; public services; unidentified cultural resources; water supply; groundwater; water quality; biological resources; mineral resources; air quality; hazardous materials; noise; and visual quality.
County of Kern	2004-2020	1,142,000	Air quality; biological resources; noise; farmland conversion; and traffic.
County of Kings*	1993-2005	149,100 (low) 228,000 (high)	Biological resources; wildlife movement; and special status species.

* *The adopted Kings County General Plan did not identify a projected population for 2005. The General Plan does include population projections for 2010, which is included in this table.*

SOURCE: City of Delano, 1999; City of Dinuba, 2008; City of Farmersville, 2003; City of Kingsburg, 1992; City of Lindsay, 1989; City of Porterville, 2007; City of Visalia, 2001, 1991; County of Fresno, 2000; County of Kern, 2004; County of Kings, 2009; DOF, 2007; TCAG, 2008.

In addition to the Regional Growth Projections used for the cumulative impact analysis, the Tulare County General Plan Update 2030 Recirculated Draft EIR noted the following Major Projects prior to the EIR's adoption/certification in August 2012 (*Note: The status of projects listed below have been updated to reflect current status*):

- **Rancho Sierra:** Status – GPA approved. The project site consists of 114.6 acres. The site was a golf course facility located on both sides of Liberty Avenue (Avenue 264), east of Road 124, south of the city of Visalia. There are 30 existing homes within the golf course area but not a part of this application. The intended use is to subdivide the site into 175 single family residential lots.

- **Goshen**: Status – Approved. On June 5, 2018, the Tulare County Board of Supervisors (BOS) approved the Goshen Community Plan. The Goshen Community Plan Update was updated to implement the 2030 Tulare County General Plan (2012). The project Study Area Boundary assessed the potential project impacts from the proposed land use changes, for the areas generally north of Riggin Drive and south of Avenue 320, Road 60 to the east, Avenue 304 to the south (including areas between SR 99 and railroad tracks north of the northbound connector from SR 198), and to the City of Visalia's sphere of influence to the east. The project EIR is based on a projected annual population growth rate of 1.3%. Additional growth beyond the 1.3% annual growth rate will require further growth analysis pursuant to CEQA. The Goshen Community Plan Update is consistent with the General Plan 2030 Update, and includes the following primary goals and objectives: (1) Land use and environmental planning - Promote development within planning areas next to the Regional State Route 99 Corridor; (2) Improvements for a "disadvantaged community"; and 3) Strengthening the relationship between the RMA the Tulare County Association of Governments (TCAG) which will help to facilitate the funding and implementation of several key transportation programs such as Safe Routes to Schools, Complete Streets, and Bike/Pedestrian Projects. By pursuing these transportation programs through a heightened collaborative process, the likelihood of getting actual projects in the ground will be realized faster than historically achieved. In doing so, these communities and others can become safer and healthier by providing a more efficient transportation network. Some of the major components of the Community Plan Update are based on Caltrans reconstructing the over-crossing at Betty Drive and State Route 99 in the Community of Goshen. There are five additional projects that have been analyzed; three directly and two in relationship to the Project's impacts to these areas. The County is proposing more than 20 new land use and zoning designations, including a Mixed Use zone. Also in the process is an update to the Zoning Code to include a mixed use zoning district in compliance with the mixed use designation in the 2030 General Plan. The Goshen Community Plan is consistent with Tulare County General Plan 2030 Update.

- **Earlimart Community Plan**: Status – GPA approved. On January 28, 2018, the Tulare County Board of Supervisors (BOS) approved the Earlimart Community Plan Update (General Plan Amendment No. 14-005) to implement the Tulare County General Plan 2030 Update (2012). Among the entitlements that were updated are: (1) the General Plan Amendment, (2) changes to Zoning District Boundaries, and (3) changes to the Zoning Code Ordinance creating a New Mixed Use Zoning District only for the Earlimart Community Plan Update. Consistent with the General Plan and the Community Plan Update Study Area Boundary, the land uses and alternative land use patterns were considered based on expansion to the Urban Development Boundary (UDB) and their potential impacts to the environment. In addition, a Complete Streets Program was approved by the Board of Supervisors on December 15, 2015, for inclusion in the Circulation Element of this Community Plan Update. The Earlimart Complete Streets Program thoroughly analyzed the alternative forms of transportation, including transit, bicycle ways, and pedestrian circulation. The three (3) projects that were analyzed at the project level in this DEIR include: (1) the New High School Project, (2) the Northern Earlimart Rezone Project, and (3) the Existing UDB Project. The County adopted six (6) land use and zoning districts, including a Mixed Use zone. Also updated was the Zoning Code to include a mixed use zoning district in compliance with the mixed use designation in the 2030 General Plan. The Community Plan Update is intended to serve residents and business owners in the Project Area by providing necessary public improvements, encouraging rehabilitation and repair of deteriorating infrastructure and fostering economic development of the Project Area. The Earlimart Community Plan is consistent with Tulare County General Plan 2030 Update.

- **Traver Community Plan:** Status – GPA approved. On December 16, 2014 the Tulare County Board of Supervisors (BOS) approved an update to the Traver Community Plan. The Project site/amendment area covers approximately 268 acres in area and encompasses the existing Traver Community Urban Development Boundary (UDB). No change occurred to the UDB. The Traver Community Plan Update is consistent with the recent approval of the General Plan 2030 Update, and includes the following primary goals and objectives. i) a General Plan Amendment No. GPA 14-003 to Update the Traver Community Plan, including the Traver Complete Streets Report; ii) Adopted Section 18.9, the Zoning Ordinance, and established a Mixed-Use Combining Zone; iii) Applied the Mixed-Use Overlay Zone to select properties located within the UDB of Traver and approved the rezoning plan for the Community of Traver (PZ 14-002); and iii) Amendment to Section 16 of the Zone Code to allow additional "by-right" uses only within the Traver Urban Development Boundary Area. The Traver Community Plan is consistent with Tulare County General Plan 2030 Update.

- **Ducor Community Plan:** Status – GPA approved. On November 3, 2015 the Tulare County Board of Supervisors (BOS) approved an update to the Ducor Community Plan. The project is a comprehensive update of the Ducor Community Plan for the unincorporated community of Ducor located in south-central Tulare County. The Ducor Urban Development Boundary (UDB) adopted in the 2004 Terra Bella/Ducor Community Plan, which established a Community boundary of 366 acres. The Project did not propose any changes to the existing Ducor UDB and, as such, the existing UDB and the proposed Project area remain at 366 acres. The objective in preparing the Plan Update was to develop a plan which can accurately reflect the needs and priorities of Ducor. The Plan Update includes assumptions regarding the amount and location of growth and development anticipated to occur in the community through the horizon Year 2030. The Ducor Community Plan is consistent with Tulare County General Plan 2030 Update.

- **Terra Bella Community Plan:** Status – GPA approved. On November 3, 2015 the Tulare County Board of Supervisors (BOS) approved an update to the Terra Bella Community Plan. Terra Bella is located in south-central Tulare County. The Terra Bella Urban Development Boundary (UDB) was adopted in the 2004 Terra Bella/Ducor Community Plan and contains 1,393 acres. The Terra Bella Community Plan Update (Plan Update or Project) did not propose any changes to the existing Terra Bella UDB and, as such, the existing UDB area remained at approximately 1,393 acres. The objective in preparing the Plan Update was to develop a plan which can accurately reflect the needs and priorities of Terra Bella. The Plan Update includes assumptions regarding the amount and location of growth and development anticipated to occur in the community through the horizon Year 2030. The Terra Bella Community Plan UDB has an adequate amount of land designated for development to accommodate growth through horizon Year 2030. The Terra Bella Community Plan is consistent with Tulare County General Plan 2030 Update.

- **Pixley Community Plan:** Status – GPA approved. On June 17, 2015 the Tulare County Board of Supervisors (BOS) approved an update to the Pixley Community Plan. Pixley is a rural unincorporated community located in the southwest portion of Tulare County between the communities of Tipton and Earlimart, adjacent to State Route 99. The Pixley Urban Development Boundary (UDB), which includes the North Pixley Specific Plan area, consists of approximately 1,992 acres. Overall, the BOS approved the Pixley Community Plan General Plan Update - GPA 14-002, Pixley Zone code Redistricting/Mixed Use Overlay - PZ 15-010, and Pixley By-Right Zoning - PZ 15-011, to allow consistency with the Tulare County General Plan 2030 Update. As such, the Pixley Community Plan is consistent with Tulare County General Plan 2030 Update and includes the following primary goals and objectives. The objective in preparing the Plan Update was to develop a plan which can accurately reflect the needs and priorities of Terra Bella. The Plan Update includes assumptions regarding the amount and location of growth and development anticipated to occur in the community through the horizon Year 2030. The Terra Bella Community Plan UDB has an adequate amount of land designated for development to accommodate growth through horizon Year 2030.

- **Tipton Community Plan:** Status – GPA approved. On June 17, 2015 the Tulare County Board of Supervisors (BOS) approved the Tipton Community Plan. Tipton is located in the San Joaquin Valley portion of Tulare County, it is approximately eight miles south of Tulare. Tipton is located at the intersection of SR 99 (a major north and south transportation corridor) and State Route 190/Avenue 144 (west of SR 99 (an east and west transportation corridor). Overall, the objective of the Tipton Community Plan is to accurately reflect the needs and priorities of the unincorporated community of Tipton. As such, the Tipton Community Plan is consistent with Tulare County General Plan 2030 Update, and includes the following primary goals and objectives. 1) Land Use and Environmental Planning (to promote development within planning areas next to the Regional Highway 99 Corridor in order to implement applicable General Plan goals); 2) Improvements for a "disadvantaged community" (i.e., increase employment opportunities, increase competitiveness in receiving housing grant awards, and enhance opportunities to receive infrastructure grant awards); 3) Strengthening Relationship with TCAG – (which would help to facilitate the funding and implementation of key transportation programs, such as Complete Streets, and major state Transportation Improvement Program (STIP) projects); and 4) a Zone Ordinance Amendment adopting a Mixed-Use Overlay Zone; Amendment to Section 16 of the Zone Code to allow additional "by-right" uses only within the Tipton Urban Development Boundary Area; and adoption of a Complete Streets Policy for the unincorporated community of Tipton. Tipton's Urban Development Boundary contains approximately 1,008 acres.

- **Strathmore Community Plan:** Status – GPA approved. On June 17, 2015 the Tulare County Board of Supervisors (BOS) approved an update to the Strathmore Community Plan. The Strathmore Community Plan is consistent with the approved Tulare County

General Plan 2030 Update, and includes the following primary goals and objectives. 1) Land Use and Environmental Planning (to promote development within planning areas next to the SR 65 99 Corridor in order to implement applicable General Plan goals); 2) Improvements for a "disadvantaged community" (i.e., increase employment opportunities, increase competitiveness in receiving housing grant awards, and enhance opportunities to receive infrastructure grant awards); 3) Strengthening Relationship with TCAG – (which would help to facilitate the funding and implementation of key transportation programs, such as Complete Streets, and major state Transportation Improvement Program (STIP) projects); and 4) a Zone Ordinance Amendment adopting a Mixed-Use Overlay Zone; Amendment to Section 16 of the Zone Code to allow additional "by-right" uses only within the Strathmore Urban Development Boundary Area; and adoption of a Complete Streets Policy for the unincorporated community of Strathmore.

- **Three Rivers Community Plan:** Status – GPA approved. On June 26, 2018, the Tulare County Board of Supervisors (BOS) approved the Three Rivers Community Plan. The Three Rivers Community Plan Update was updated to implement the 2030 Tulare County General Plan (2012). The unincorporated community of Three Rivers is located within an Urban Development Boundary (UDB) consisting of approximately 21,000 acres and is located approximately 30 miles northeast of Visalia. The nearest incorporated city is Woodlake, approximately 16 miles west on State Route 216. The Three Rivers Community Plan Update is consistent with the General Plan 2030 Update, and includes the following primary goals and objectives: (1) Land use and environmental planning; 2) Economic Development; 3) Three Rivers Community Plan Vision Statements (wherein the Community Plan will provide appropriate direction to help guide balanced public and private decisions affecting the community including provisions for the overall direction, density, type of growth, and protection of the natural environment that is consistent with the Tulare County General Plan, and the needs and desires of the Three Rivers Community to maintain its rural character); and 4) Strengthening Relationship with TCAG – (which would help to facilitate the funding and implementation of key transportation programs, such as Complete Streets, and major state Transportation Improvement Program (STIP) projects). The Board also approved an update to the Zoning Code (and Zone Map) to include a mixed use zoning district in compliance with the mixed use designation in the 2030 General Plan.

- **Poplar-Cotton Center:** Status – GPA approved. GPA approved. On December 4, 2018, the Tulare County Board of Supervisors (BOS) approved the Poplar/Cotton Center Community Plan update. The Project site is located approximately eight miles west of Porterville and eleven miles southwest of Lindsay. It is generally bound by Avenue 136 on the south, Avenue 152 on the north, Road 184 on the west, and Road 193 on the east; and encompasses approximately 1.3 square miles of land. The objective of the Poplar/Cotton Center Community Plan Update is to develop a community plan which can accurately reflect the needs and priorities of this unincorporated community. The Land Use and Circulation portions of this Plan will provide the mechanism to minimize or avoid the potential adverse impacts of urban growth. The development of an orderly, harmonious land use pattern and appropriate implementation measures are designed to reduce potential conflict between neighboring uses across Tulare County's 2030 planning horizon, consistent with the Tulare County 2030 General Plan Update. The Community Plan for General Plan Amendment No. GPA 17-010, which is inclusive of the Poplar/Cotton Center Community Plan, amendments to Section 18.9 (PZC 18-006), Section 16 (PZC 18-007), and the Zoning District Map (PZC 18-012), Section 16 (PZC 18-013), and the Zoning District Map (PZC 18-014) of Ordinance No. 352, the Zoning Ordinance, for the Community of Poplar/Cotton Center. The General Plan Amendment is required to i) update the existing Community Plan for Poplar/Cotton Center; ii) approve a Zoning Ordinance amendment to add Poplar/Cotton Center to the Mixed Use Overlay zoning district Section 18.9; iii) approve an amendment to Section 16 of the Zoning Code to allow additional by-right uses; and iv) approve the Zoning District Map, within the Poplar/Cotton Center Urban Development Boundary, under CEQA Sections 1507 through 1573 of the CEQA Guidelines.

- **Ivanhoe Community Plan:** Status – GPA approved. On July 9, 2019, the Tulare County Board of Supervisors (BOS) approved the Ivanhoe Community Plan update. The Ivanhoe Community Plan Update is intended to implement the 2030 Tulare County General Plan (2012). Ivanhoe is bounded by Avenue 320 in the south, Avenue 336 in the north, Road 152 in the west, and Road 164 in the east and encompasses two square miles of land. SR 216 traverses the southeastern portion of the Community and provides access to SR 198 in Visalia (approximately ten miles southwest of Ivanhoe). SR 99 is located approximately 13 miles west of Ivanhoe. The objective of the Ivanhoe Community Plan Update is to develop a community plan which can accurately reflect the needs and priorities of the unincorporated community of Ivanhoe. The Plan is needed to increase the availability of infrastructure funding, such as drinking water system improvements (wells, water distribution piping, storage tanks, etc.), wastewater system improvements (such as treatment, piping, lift stations, etc.), and public works/safety improvements (such as curbs, gutters, sidewalks, etc.), and to stimulate economic development within the community. The Community Plan for General Plan Amendment No. GPA 17-006, which is inclusive of the Ivanhoe Community Plan, amendments to Section 18.9 (PZC 18-006), Section 16 (PZC 18-007), and the Zoning District Map (PZC 18-008) of Ordinance No. 352, the Zoning Ordinance for the Community of Ivanhoe, were required to achieve consistency with the Tulare County General Plan 2030 Update (August 2012). The General Plan Amendment is required to i) update the existing Community Plan for Ivanhoe; ii) approve a Zoning Ordinance amendment to add Ivanhoe to the Mixed Use Overlay zoning district Section 18.9; iii) approve an amendment to Section 16 of the Zoning Code to allow additional by-right uses; and iv) approve the Zoning District Map, within the Ivanhoe Urban Development Boundary, under CEQA Sections 1507 through 1573 of the CEQA Guidelines.

- **Plainview Community Plan:** Status – GPA approved. On July 9, 2019, the Tulare County Board of Supervisors (BOS) approved the Plainview Community Plan update. The Plainview Community Plan Update is intended to implement the 2030 Tulare County General Plan (2012). Plainview is located approximately four miles west of Strathmore and approximately six (6) miles southwest of Lindsay. The Plainview community boundary includes Avenue 196 on the north; Road 198 on the east; Avenue 194 on the south; it includes both sides of Road 196 on the north; Road 196 to the intersection of Avenue 192; and it includes areas near the Road 195 alignment to the west side of Plainview. The objective of the Plainview Community Plan is to develop a community plan which can accurately reflect the needs and priorities of the unincorporated community of Plainview. The Plan is needed to increase the availability of infrastructure funding, such as drinking water system improvements (wells, water distribution piping, storage tanks, etc.), wastewater system (such as piping, lift stations, etc.), and public work/safety improvements (such as curbs, gutters, sidewalks, etc.), and to stimulate economic development within the community. The Community Plan for General Plan Amendment No. GPA 17-009, which is inclusive of the Plainview Community Plan, amendments to Section 18.9 (PZC 19-007), Section 16 (PZC 19-008), and the Zoning District Map (PZC 19-009) of Ordinance No. 352, the Zoning Ordinance for the Community of Plainview, were required to achieve consistency with the Tulare County General Plan 2030 Update (August 2012). The General Plan Amendment is required i) for the Community Plan for Plainview; ii) to approve a Zoning Ordinance amendment to add Plainview to the Mixed Use Overlay zoning district Section 18.9; iii) to approve an amendment to Section 16 of the Zoning Code to allow additional by-right uses; and iv) to approve the Zoning District Map, within the Plainview Urban Development Boundary, under CEQA Sections 1507 through 1573 of the CEQA Guidelines.

- **Woodville Community Plan:** Status – GPA approved. On July 9, 2019, the Tulare County Board of Supervisors (BOS) approved the Woodville Community Plan update. The Woodville Community Plan Update is intended to implement the 2030 Tulare County General Plan (2012). Woodville is located southeast of the Road 152/Avenue 168 intersection and is located approximately ten (10) miles southeast of the City of Tulare and eight (8) miles northeast of the State Route 99/Highway 190 interchange. The objective of the Woodville Community Plan is to develop a community plan which can accurately reflect the needs and priorities of the unincorporated community of Woodville. The Plan is needed to increase the availability of infrastructure funding, such as drinking water system improvements (wells, water distribution piping, storage tanks, etc.), wastewater system (such as piping, lift stations, etc.), and public works/safety improvements (such as curbs, gutters, sidewalks, etc.), and to stimulate economic development within the community. The Community Plan for General Plan Amendment No. GPA 17-013, which is inclusive of the Woodville Community Plan, amendments to Section 18.9 (PZC19-004), Section 16 (PZC 19-005), and the Zoning District Map (PZC 19-006) of Ordinance No. 352, the Zoning Ordinance for the Community of Woodville, is required to achieve consistency with the Tulare County General Plan 2030 Update (August 2012). The General Plan Amendment is required i) for the Community Plan for Woodville; ii) to approve a Zoning Ordinance amendment to add Woodville to the Mixed Use Overlay zoning district Section 18.9; iii) to approve an amendment to Section 16 of the Zoning Code to allow additional by-right uses; and iv) to approve the Zoning District Map, within the Woodville Urban Development Boundary, under CEQA Sections 1507 through 1573 of the CEQA Guidelines.

In addition to the Major Projects summarized above, the approved projects listed as follows may contribute to cumulative impacts. It is noted that only two projects (Harvest Power and Woodville Landfill Expansion include composting components of their respective project):

- **<u>Pena's</u>:** Status – Approved. The project is for Peña's Material Recovery Facility (MRF) and Transfer Station (TS) which currently sits on 18.01 acres that are being rezoned from AE 30 to M1 Light Industrial Zoning, and rezoning 6.7 acres and 11.3 acres from residential and industrial reserve zoning to industrial zoning. The land is currently operated by Peña's Disposal, Inc. and has a previously permitted peak processing capacity of 500 tons per day (TPD). This existing facility serves the unincorporated northern portions of Tulare County and the unincorporated southern portions of Fresno County, and the City of Orange Cove in Fresno County. Within the County of Tulare, the facility serves the cities of Dinuba and Porterville, the communities of Cutler, Orosi, London, Sultana, Traver, Seville and other smaller communities in the area that may need to utilize the facility for the recycling of source-separated recyclables, commingled recyclables, commercial and industrial rubbish, green material and wood wastes, construction and demolition wastes, and inert debris to assist in reaching the diversion goals of the California Integrated Waste Management Act of 1989 (AB 939).

- **<u>South County Correctional Detention Facility in Porterville</u>:** Status – Approved. The project required rezoning of the project site, which is half in the County and half in the City of Porterville. The project contains a build-out "footprint" for the facility of approximately 15.0 acres with a new maximum security Type II facility as the primary structure. The project will consist of 250-cell double occupancy units (500 beds) and 14 special use beds for a total of 514 beds. In addition to the main detention facility, the project will also include support service components. The project will require new utilities infrastructure (such as electrical, gas, phone, etc.). It will also require streets/roads improvements, potable water systems, wastewater systems, and storm water drainage infrastructure. These have been constructed or expanded to meet facility demands. The project will be extended to connect with existing potable water, wastewater, and storm water drainage infrastructure provided by City of Porterville.

- **<u>Pixley Biogas</u>:** Status – Approved. The project is for development of a biogas facility on 2.75-acre portion of an 8 acre parcel. The digester will extract methane gas, via an anaerobic manure digester. The facility will be used to produce 266 MMBTUS per day of biogas via an anaerobic digestion of manure feedstock from nearby dairies. The biogas produced will be used to fuel the Calgren bio-refinery facility, located adjacent and south of the project site, which will reduce the Calgren's consumption of natural gas.

- **<u>Harvest Power</u>:** Status – Approved. The project is for a Composting Expansion and Anaerobic Digester. The project will allow a maximum total tonnage for the composting to increase from 156,000 tons per year to a potential 216,000 tons per year. An additional 60,000 tons will be allowed at the proposed anaerobic digester facility. The facility will produce transportation fuel through a compressed natural gas (CNG) refueling station.

- **<u>Orosi Rock</u>:** Status – Approved. The project includes a concrete recycling and surface mining operation on 35.13 acres where concrete from various construction projects around the region are delivered for recycling. The project includes transporting up to 800,000 tons of aggregate via 44,000 trips per year heavy-duty truck trips from the operation on an annual basis. The amendment to the previous permit allows an increase of 1.9 million tons of rock and 2.1 million tons of imported recycled concrete. The total production of aggregate will be 10.8 million tons over the course of the existing 25 year period of the existing permit. Excavating will be limited to 400' Mean Sea Level (MSL) and the operation will continue blasting by a licensed blaster to break up larger rocks that cannot be moved or broken up by mechanical equipment.

- **<u>Tulare Solar Center</u>:** Status – Approved. The project includes the construction of an 80 MW solar photovoltaic facility on up to 800 acres of an approximately 1,144 acre property historically used as agricultural farmland in Tulare County, California. Project construction generally requires a focus in three major areas. The areas of focus include: (1) The solar field with associated equipment, including solar PV panels/modules, racking systems, inverters, intermediate voltage transformers, access roads, and underground, above-ground, or overhead electrical systems to collect and consolidate power from across the Project; (2) A substation(s) that receives the solar field's electrical production and increases the voltage to match the voltage of the adjacent utility grid via a generator step-up transformer(s), with Project owned gen-tie lines, and (3) Any other electrical interconnection components necessary for the Project's production to reach the utility grid, including disconnect equipment, communications lines (e.g., fiber optics) and a sub-transmission tap line.

- **<u>Deer Creek Mine (PMR 14-002)</u>:** Status – Approved. This project amended a Surface Mining Permit and Reclamation Plan to allow expanded operations at this site. The Applicant currently operates a rock and gravel surface mining operation on 98 of this 118-acre site. The site is located south of Deer Creek Drive, approximately 1/3-mile east of Avenue 120 and Road 272, approximately 4 miles southeast of Porterville. The Project will result in no increase in the maximum depth of the mine, as expansion will occur laterally within the existing mining footprint. The approval includes an increase in production by 450,000 tons per year (from a maximum of 500,000 tons per year to a maximum of 950,000 tons per year). Increase truck hauling by 176 round trips per day (from a maximum of 200 round trips per day to a maximum of 376 round trips per day). The Project will not result in any change to the estimated total rock production of 15,000,000 tons of rock material during the estimated 50 years of operation nor would it result in any change to the approved reclamation plan.

- **<u>CMI (formerly Papich)</u>:** Status – Approved. The Applicant received a Special Use Permit through Tulare County for the following: 1) Permanent establishment of the asphalt batch plant on the existing site; 2) Expansion of the existing operation from 3,700 tons/day to 8,000 tons/day of asphalt; and 3) To conduct retail/commercial sales of asphalt.

- **Derrel's Mini Storage:** Status – Approved. The Project includes a General Plan Amendment (No. GPA 14-007) and Change of Zone (No. PZ 14-001). GPA 14-007 received approval to amend the Tulare County Land Use Element of the General Plan by changing the land use designation on the 19.33-acre parcel from "Agriculture" to "Commercial or Light Industrial". PZ 14-001 was approved to re-zone the AE-20 (Exclusive Agricultural-20 acre minimum) Zone to C-3 (Service Commercial) Zone on the same 19.33 acres. As noted in the Tulare County Zoning Ordinance, the zone change allows Mini-Warehouses – "Storage or warehousing service within a building or buildings primarily for individuals to store personal effects"[5] The site consists of the phased construction of 19.33 acre mini- storage facility. Phase 1 consists of 129,550 square feet; Phase 2 consists of 148,950 square feet, and Phase 3 consists of 96,600 square feet. RV storage will be used on the Phase 2 portion of the site, moving to Phase 3 as the earlier phases are constructed with the eventuality of the entire site constructed as mini storage units (if necessary) to meet market demands. It is possible that Phase 3 will remain as RV storage. The applicant approximates a ten-year full build-out of the entire proposed Project site.

- **Andersen Village (Hash Farms) Residential Subdivision:** Status – Approved. The Project will be located at the northwest corner of Road 16 and Avenue 396, partially within the City of Kingsburg, Fresno County, and Tulare County. The Andersen Village Development Specific Plan is an approved plan for development of a 200-unit residential subdivision (160 single-family units and 40 multi-family units) on a total of 54 acres, including a 2.54 acre park and 1.15 acre fenced stormwater basin. The site is approximately one-half mile east of State Route 99 and approximately one-tenth of a mile south of State Route 201. The 54-acre site is located on Tulare County APNs 028-140-007, 012, 013, 018 and 022, and Fresno County APNs 396-020-008 and 014. The County of Tulare Board of Supervisors approved a tentative subdivision map and a Specific Plan for this project. The City of Kingsburg, County of Fresno, Fresno County Local Agency Formation Commission, and Selma-Kingsburg-Fowler County Sanitation District will also need to take each agencies' respective actions.

- **Antelope Valley (Redfield):** Status – Approved. The 43-unit single-family residential Antelope Valley Subdivision is located on a ±125-acre site (with average lot size of 2.14 acres) on the north side of Avenue 360 (west side of Road 220), approximately one mile north of the City of Woodlake in Tulare County. The site is approximately five miles west of State Route 198 and twenty-two miles east of State Route 99. The site is zoned PD-F-M (Planned Development-Foothill Combining-Special Mobile Home) Zone and is within the Woodlake 7.5 Minute USGS Quadrangle.

[5] Tulare County Zoning Ordinance. Page 13.

- **Sequoia Gateway Commerce Park:** Status – Approved. The Project consists of a Specific Plan/Corridor Plan for the development of a highway commercial/regional commercial center on ±126.9 acres at the southeast quadrant of State Route 99 and Avenue 280 (Caldwell Avenue) in an unincorporated area of Tulare County. The project will be developed in two major phases. Phase 1 consists of 22,950 square feet (sf) of highway commercial uses such as fast-food outlets, retail, and gas station fueling pumps with associated convenience store, along with a 60,000sf medical clinic building on approximately 12.4 acres in the northwest corner of the project site. Phase 2 will consist of 986,000sf of mixed-use commercial land uses including regional retail, hotel, office, restaurant, and fast-food uses on approximately 101.6 acres. Phase 2 will be developed in at least four incremental sub-phases, including additional highway commercial uses adjacent to Phase 1, hotel and restaurant uses, office uses, and regional retail uses. The remaining 12.9 acres will be used for a planned stormwater basin and wastewater treatment plant, along with roadway rights-of-way. Project development will occur in accordance with the detailed planning and design guidelines and standards set forth in the "Sequoia Gateway Commerce Park Specific Plan" (which is contained in Appendix A of the EIR). Phase 1 has commenced development following approval of entitlements and permits for that initial phase of development. Phase 2 would commence development at such future time as traffic capacity permits, or after the planned reconstruction of the State Route 99/Avenue 280(Caldwell Avenue) Interchange, currently in the planning stages, is completed, and other pre-requisite criteria are met for moving forward with permitting and entitlements for that latter phase of development.

- **Derrel's Mini Storage:** Status – Approved. The re-designation of the land use and zone district for the ±15.0-acre parcel allows by-right construction of a mini-storage facility in two phases: Phase 1 – 148,500 square feet (sf); and Phase II – 175,200sf At complete build-out, the total square footage of rentable storage space would be 323,700sf. The project also includes a 1,327sf residence, a 391sf garage, and an 804sf office. The Board of Supervisors also approved General Plan Amendment No. GPA 17-031 and Zone Change No. PZC 18-015; (2) General Plan Amendment No. GPA 17-031 that changed the land use from "Mooney Corridor" to "Mixed Use" on one ±15.0 acre parcel; (3) Change of Zone No. PZC 18-015 that changed the zone district from AE-20 to C-2 on one ±15.0-acre parcel; (4) Categorical Exemption and General Plan Amendment No. GPA 17-036 that changed the land use designation from "Mooney Corridor" to "Mixed Use" on two 1.0-acre parcels; and (5) Categorical Exemption and Change of Zone No. PZC 17-043 that changed the zone district from AE-20 to C-2 on two 1.0-acre parcels, located on the east side of Mooney Blvd., approximately 660 feet south of Avenue 264, north of Tulare.

- **Dunn Asphalt and Concrete Batch Plant**: Status – Approved. The Applicant received approval of Special Use Permit (PSP 18-049) to operate the asphalt/concrete batch plant at 7763 Avenue 280 (Visalia, CA) which is located along the south side of Avenue 280, west of State Route 99 (SR 99) and east of Road 76 in an unincorporated area of Tulare County. The Special Use Permit (PSP 18-049) allows the following: 1) a concrete batch plant that would produce 100,000 tons of concrete per year for commercial and retail sale; 2) a hot-mix asphalt (HMA) batch plant that would produce 150,000 tons of HMA per year for commercial and retail sale; and 3) recycling of 30,000 tons per year of concrete and asphalt to be crushed into recycle base. The site is approximately one mile west of State Route 99. The approximately 20-acre site is located on Tulare County APN 119-010-039 and is currently zoned AE-40 (Exclusive Agricultural-40 Acre Minimum); the use is consistent with the zoning with an approved special use permit.

- **Deer Creek Mine (PMR 19-001):** Status – Approved. The applicant received approval of application PMR 19-001 to expand mining operations at a currently operating a rock and gravel surface mining operation on 110 acres, as permitted by PMR 01-001, PMR 09-002, and PSP 01-055 (ZA), and PMR 14-002. Approval will ultimately result in an approximately 20-acre expansion to the footprint and increased operations of the existing and currently operational Deer Creek Mine facility. The permit amendments requested by PMR 19-001 will allow consistency between PMR 01-001, PMR 09-002, PSP 01-055(ZA), and PMR 14-002; result in an approximately 20-acre expansion through the use of a lot line adjustment toward the east and southeast on land currently used for grazing; increase annual production by 500,000 tons per year (tpy) (from a maximum of 1,000,000 tpy to a maximum of 1,500,000 tpy); increase truck hauling by 224 round-trips per day (from a maximum of 376 round-trips per day to a maximum of 600 round-trips per day), with a maximum of 60,000 truck trips per year; result in an increase in the maximum depth of the mine to 300 MSL; and result in a change to the estimated total rock production of 40,000,000 tons of rock to 75,000,000 tons of rock material during the estimated 50 years of operation.

- **Cross Creek Bend Subdivision (Smee Homes):** Status – Approved. At build-out, the Project would result in the development of 197 single-family residences on APN 075-440-002 at the northwest corner of Avenue 310 and Road 72 within the Goshen Community Plan Urban Development Boundary area. The approximately 37.0-acre site will have a density of 5.32 units per acre (based on the gross acreage). The remaining acreage will be utilized as open space in the form of a stormwater detention basin and roadways with curbs, gutters, and sidewalks. Residential parcels will be a minimum of 5,000 square feet. The Project will be developed in three (3) phases: Phase I 33 lots, Phase II 83 lots, and Phase III 81 lots. The existing zoning is C-2-MU (Mixed use); as such, the Project is consistent with the applicable zoning which allows single-family residential uses.

- **Rexford Solar Farm:** Status – Approved. The Rexford Solar Farm Project will result in the construction and operation of an up to 700 megawatt (MW) solar photovoltaic (PV) facility, including an energy storage system (ESS) with up to 700 MW storage capacity, on site substation, transmission and/or collector lines, and ancillary components on approximately 3,614 acres of land in unincorporated Tulare County, California. The Project site consists of 40 discontinuous parcels in south central Tulare County (a complete list of the Assessor Parcel Numbers and acreages can be found in Appendix "B" of the EIR). The Project is located near the unincorporated community of Ducor; neighboring unincorporated communities include Terra Bella to the north and Richgrove to the southwest. The Project site is generally located south of Avenue 68, west of Road 272, north of Avenue 12, and east of Road 216. The majority of the Project site is bisected by and lies east of State Route (SR) 65. The majority of the existing zoning is AE-40 (Exclusive Agriculture – 40 Acre Minimum); as such, the Project is consistent with the applicable zoning which allows renewable energy projects (such as solar power electricity generation).

- **Angela Solar:** Status – Approved. The Project would provide approximately 40 megawatts (MW) of electricity (renewable energy). Project components include solar (photovoltaic, PV) modules (approximately 138,408) mounted on single access trackers. The steel piles supporting the PV modules would be driven into the soils using pneumatic techniques. Various wiring, underground cables, combiner boxes, inverters, transformers, would also be installed. A new, on-site substation/switchyard (located in the northwest corner of the Project site) would tie into a new one (1.0) mile-long 138-kV transmission interconnection line (along a utility easement on non-maintained County roads and private property easement) with the nearby Pacific Gas & Electric (PG&E) Olive substation north of the Project site. The Project site is located approximately two miles southeast of Alpaugh, in Tulare County, CA, generally south and north of Avenue 42 and west and east of Road 46 and east of Road 52. The Project will cover approximately 250 acres in area. The existing zoning is AE-80 (Exclusive Agriculture – 80 Acre Minimum); as such, the Project is consistent with the applicable zoning which allows renewable energy projects (such as solar power electricity generation).

- **Hampton Inn & Suites Three Rivers:** Status – Approved. The applicant received approval of application CEQ 20-004 for the Project that includes a 3-story hotel and associated site improvements on an existing parcel with one access/egress point from SR 198. A driveway road is proposed from SR 198/Sierra Drive through the vacant west of the subject property. This driveway will be situated within an existing 30-foot wide access easement. The hotel will consist of 105 guest rooms with an elevator, managers office, meeting room, in-house food preparation and breakfast area, and other typical hotel facilities (such as in-house and guest laundry, fitness center, various storage closets, etc.) and outdoor swimming pool/cabana building. The Project includes 108 standard parking stalls (6 of which will be handicap accessible stalls). Utilities include a septic tank with filter and dripline system and new domestic well, and storm drainage will be retained on-site (with an option for biofiltration).

- **Woodville Landfill:** Status – Approved. The Project includes the expansion of the existing 160-acre Woodville landfill by 240 acres; combined, the landfill would encompass an area of approximately 400 acres. The currently unused portion of the existing landfill is vacant, unproductive land, while the Project expansion area is predominately under agriculturally productive row crops. The Project is designed to anticipate and meet the demands/needs of increases in project solid waste disposal of the County for the next 55 years. It is anticipated that daily tonnage received, number of vehicles entering/exiting, landfill operations equipment, water usage, ancillary uses, etc., will not increase or decrease. The Project site is in western Tulare County, located approximately 12 miles southeast of the City of Visalia, seven miles southeast of the City of Tulare, and 13 miles northwest of the City of Porterville at the intersection of Avenue 200 and Road 152. The landfill address is 19800 Road 152, Tulare, CA 93274. The site, and the surrounding land, is zoned as AE-40 (Exclusive Agriculture-40 Acre minimum) and has a Tulare County General Plan designation of Agriculture. The site is not located within any Urban Development Boundary or Urban Area Boundary. The landfill is an allowable use within the AE-40 zone.

SUMMARY OF CUMULATIVE IMPACTS

In this summary section, mitigated impacts and immitigable impacts will be discussed. Checklist Item criteria that would result in No Impacts or Less Than Significant Impacts are discussed in Chapter 3 and are not reiterated here.

Unavoidable Impacts

There are no significant and unavoidable impacts. All potentially significant cumulative impacts have been reduced below a level of significance through mitigation.

Less than Significant Impacts with Mitigation

All impacts that can be effectively mitigated are listed in the **Table 4-2**.

Table 4-2
Checklist Items with Less Than Significant Impacts with Mitigation

Impact Section	Checklist Item No.	Checklist Criteria
Air Quality	3.1 b)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?
Biology	3.2 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 [Wildlife] or U.S. Fish and Wildlife Service?
Cultural Resources	3.3 a)	Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?
Cultural Resources	3.3 b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?
Cultural Resources	3.3 c)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
Cultural Resources	3.3 d)	Disturb any human remains, including those interred outside of formal cemeteries?

Table 4-2
Checklist Items with Less Than Significant Impacts with Mitigation

Impact Section	Checklist Item No.	Checklist Criteria
Geology and Soils	3.5 f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
Tribal Cultural Resources	3.9 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)?
Tribal Cultural Resources	3.9 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, the lead agency shall consider the significance of the resource to a California Native American Tribe?

See Chapter 8 Mitigation Monitoring and Reporting Program for a comprehensive list of Mitigation Measures to be implemented as part of the proposed Project.

References

California Environmental Quality Act (CEQA) Guidelines. Sections 15130 (e) and 15355 Accessed October 2021 at: https://resources.ca.gov/-/media/CNRA-Website/Files/Programs-and-Projects/CEQA/CEQA-Homepage/2019_CEQA_Statutes_and_Guidelines.pdf?la=en&hash=28D5D3CF051762486FC0A43BB50921F85E30E8CC

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Chapter 5
Alternatives

INTRODUCTION

CEQA Guidelines §15126.6 require that a reasonable range of Alternatives to the proposed project be discussed in the EIR. Specific requirements include the following:

CEQA Guidelines §15126.6(a): Alternatives to the proposed Project. An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.

CEQA Guidelines §15126.6(b): Purpose. Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

CEQA Guidelines §15126.6(c): Selection of a range of reasonable alternatives. The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Additional information explaining the choice of alternatives may be included in the administrative record. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.

CEQA Guidelines §15126.6(d): Evaluation of alternatives. The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

CEQA Guidelines §15126.6(e): "No project" alternative.

(1) The specific alternative of "no project" shall also be evaluated along with its impact. The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The no project alternative analysis is not the baseline for determining whether the proposed project's environmental impacts may be significant, unless it is identical to the existing environmental setting analysis which does establish that baseline (see Section 15125).

(2) The "no project" analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as 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. If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

(3) A discussion of the "no project" alternative will usually proceed along one of two lines:

(A) When the project is the revision of an existing land use or regulatory plan, policy or ongoing operation, the "no project" alternative will be the continuation of the existing plan, policy or operation into the future. Typically this is a situation where other projects initiated under the existing plan will continue while the new plan is developed. Thus, the projected impacts of the proposed plan or alternative plans would be compared to the impacts that would occur under the existing plan.

(B) If the project is other than a land use or regulatory plan, for example a development project on identifiable property, the "no project" alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in its existing state against environmental effects which would occur if the project is approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this "no project" consequence should be discussed. In certain instances, the no project alternative means "no build" wherein the existing environmental setting is maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment.

(C) After defining the no project alternative using one of these approaches, the lead agency should proceed to analyze the impacts of the no project alternative by projecting what would reasonably be 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.

CEQA Guidelines §15126.6(f): Rule of reason. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making.

(1) Feasibility. Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

(2) Alternative locations.

(A) Key question. The key question and first step in analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR.

(B) None feasible. If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR. For example, in some cases there may be no feasible alternative locations for a geothermal plant or mining project which must be in close proximity to natural resources at a given location.

(C) Limited new analysis required. Where a previous document has sufficiently analyzed a range of reasonable alternative locations and environmental impacts for projects with the same basic purpose, the lead agency should review the previous document. The EIR may rely on the previous document to help it assess the feasibility of potential project alternatives to the extent the circumstances remain substantially the same as they relate to the alternative.

(3) An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative.

"15021. Duty to minimize environmental damage and balance competing public objectives

(a) CEQA establishes a duty for public agencies to avoid or minimize environmental damage where feasible.

(1) In regulating public or private activities, agencies are required to give major consideration to preventing environmental damage.

(2) A public agency should not approve a project as proposed if there are feasible alternatives or mitigation measures available that would substantially lessen any significant effects that the project would have on the environment.

(b) In deciding whether changes in a project are feasible, an agency may consider specific economic, environmental, legal, social, and technological factors.

(c) The duty to prevent or minimize environmental damage is implemented through the findings required by Section 15091.

(d) CEQA recognizes that in determining whether and how a project should be approved, a public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social factors and in particular the goal of providing a decent home and satisfying living environment for every Californian. An agency shall prepare a statement of overriding considerations as described in Section 15093 to reflect the ultimate balancing of competing public objectives when the agency decides to approve a project that will cause one or more significant effects on the environment."[1]

FACTORS CONSIDERED IN ANALYSIS OF ALTERNATIVES

In this Alternatives analysis, the following criteria will be used:

Evaluation Criteria 1: Project Specific Elements

Chapter Two – Project Description contains the complete list of project elements which are summarized as follows:

- Establishment of a composting and biomass conversion facility at the existing Visalia landfill site.

Evaluation Criteria 2: Project Objectives

The Project Objectives are identical to those contained in Chapter 2 Project Description as follows:

- Provide compost capacity for a transformative organics diversion program in California as required by California legislation;

[1] 2013 CEQA Guidelines, Section 15021

- Reduce methane emissions from landfills by removing organics from landfills and by composting new feedstocks and reducing greenhouse gasses (GHG) by sequestering nutrient rich compost in soils;
- Modify an existing, strategically integrated waste management facility (Visalia Landfill) to accommodate the growing regulatory demand for mixed materials, organic waste, and food waste composting;
- Receive and compost food wastes derived from commercial and residential sources, increase diversion of organic materials from landfills by expanding the approved feedstock list to include digestates that can be received and processed;
- List the organics waste feedstocks for the facility, using terms and definitions consistent with new State composting regulations (14 CCR) and the adopted SB 1383 regulations;
- Allow pre-processing food waste operations at the facility;
- Continue to provide economic benefits to Tulare County through employment of local residents, by the expansion of operational solid waste management activities and construction of new processing equipment;
- Compliance with SJVAPCD rules and regulations;
- Facilitate the accomplishment of AB 341, which directs CalRecycle to increase statewide diversion from landfills to 75% by 2020;
- Comply with the requirements of upcoming SB 1383 regulations which requires generators with local government and the local haulers within a shared responsibility framework to reduce 50% of all organics by 2020 and to reduce 75% of all organics by 2025 to mitigate methane;
- Enhance the business community's ability to comply with AB 1826, which as of April 1, 2016 requires businesses that generate a specific amount of organic waste per week must arrange for recycling services for that organic waste in a specified manner (such as composting), to substantially reduce landfill disposal of food wastes; and
- Create water saving opportunities by using compost to enhance agricultural soil.

Evaluation Criteria 3: Minimize Costs

Although there may be a diversity of theoretical alternatives, there are only a few alternatives that could potentially be implemented due to costs involved in the alternative. Considerable increases in costs can result in infeasibility of a project alternative. The Project site area is suitable for the proposed Project (e.g., it is predominantly rural and would be located on County owned lands within the Visalia Landfill site (Landfill)) and the applicant has control of the proposed site location. Locating a new landfill site and ancillary uses such as composting operations, new office, etc.) on another site would significantly increase costs due to acquisition, technical studies, design/engineering, costs for developing the project on a different site, etc.

Evaluation Criteria 4: Operational Efficiency

Operational efficiency is a major concern in the long-term viability of the Project. Operational efficiency affects both operational costs and operational effectiveness through the maximization of equipment use.

Evaluation Criteria 5: Reduce Significant Impact

Each alternative should be analyzed to assess the potential to reduce significant impacts. On a cumulative basis, alternative sites generally require similar uses, structures, operations, etc.

Evaluation Criteria 6: Physical Feasibility (Land Size and Configuration Constraints)

Physical feasibility is required because if site for a particular alternative is too small or if the components of the proposed Project cannot be configured on the site, then the alternative would not be feasible and should be eliminated from review.

ALTERNATIVES ANALYSIS

Based on the CEQA Guidelines mentioned herein, this Alternatives analysis contains the following:

1. No-Project
2. Alternate Site
3. No Biomass Conversion Facility

Alternative 1: No-Project

This section discusses the mandatory "No-Project" alternative. Under this alternative, the compost and biomass conversion facility will not be developed and landfill operations will continue as they are now currently permitted.

Description. Under this alternative, the Composting and Biomass Conversion facility would not be developed. The landfill would remain at its currently active state and the 38-acre portion of landfill would remain as-is. The No Project Alternative would result in no physical change at Visalia Landfill. The No-Project Alternative, by definition, would not meet the objectives of the proposed Project that were discussed earlier in this chapter. Under the No-Project alternative, the activities and improvements discussed in Chapter 2 of this Draft EIR would not be implemented. The No-Project Alternative would result in the following:

- Failure to provide compost capacity for a transformative organics diversion program in California as required by California legislation (e.g., SB 1383 regulations which requires generators with local government and the local haulers within a shared responsibility framework to reduce 50% of all organics by 2020 and to reduce 75% of all organics by 2025 to mitigate methane);
- Failure to reduce methane emissions from landfills by removing organics from landfills and by composting new feedstocks and reducing greenhouse gasses (GHG) by sequestering nutrient rich compost in soils;
- Failure to implement local and state landfill diversion goals by eliminating a demonstrated efficient and effective landfilling alternative, specifically, the use of composting material; and
- Would not meet any project objectives or project-specific elements.

Environmental Considerations. Composting capacity would continue to be necessary to accommodate the anticipated/projected residential, agricultural commercial, and industrial growth rate and economic development in the region and to keep up with state regulations. Environmental impacts would eventually occur as the No Project Alternative would ultimately result in the need for an additional composting and biomass conversion facility site to provide capacity for the organic waste stream in compliance with regulations. However, for this analysis, it is determined that the No-Project Alternative means that the compost and biomass conversion facility would not be developed and would fail to comply with applicable legislation (e.g., SB 1383 regulations which requires generators with local government and the local haulers within a shared responsibility framework to reduce 50% of all organics by 2020 and to reduce 75% of all organics by 2025 to mitigate methane). While all environmental impacts under the No-Project Alternative would be less than the Proposed Project, the No-Project Alternative by definition would not meet the objectives of the proposed Project that were discussed earlier in this chapter and could result in non-compliance with applicable legislation.

Alternative 2: Alternate Site

Alternative 2 would relocate the proposed Project to an alternate location rather than the proposed Project site within the existing footprint of the Visalia Landfill.

Description. The environmental considerations associated with an alternate site would be highly dependent on several variables, including physical site conditions, surrounding land use, site access, and suitability of the local roadway network. Physical site conditions include land, air, water, minerals, flora, fauna, noise, or objectives of historic or aesthetic significance, and would affect the nature and degree of direct impacts, needed environmental control systems, mitigation, and permitting requirements. Surrounding land use and the presence of sensitive receptors would influence land use compatibility issues such as air pollutant emissions and health risk, odor, noise, and traffic. The Applicant (County of Tulare) does not have control of an alternate site; if control were viable, the applicant would have to re-initiate the application process as a new project. Similar to the proposed Project site, an alternate site would require environmental review once the Applicant has prepared sufficient project description information. The time requirements for these activities would reduce the ability of the Applicant to appropriately divert the projected organic waste stream in compliance with State regulations. This alternative would be the most complex, costly, and time-consuming alternative to implement. Various engineering and technical studies would then be completed to define the project and its required control systems. Environmental review and obtaining local and state entitlements would follow prior to construction activities.

Environmental Considerations. Development of an alternate site could theoretically meet most of the Project objectives presented earlier in this chapter. However, construction and operation of an alternate site would not be as cost effective or operationally efficient than the proposed Project and thus is not consistent with the Project objectives. In addition, construction and operation at an alternate site would likely result in environmental impacts that are equal to or greater than the proposed project. The majority of project impacts identified in the proposed

Project are likely to occur at an alternate site. An alternate site was not chosen for evaluation for reasons identified in CEQA Guidelines §15126.6(f): Rule of reason. In addition, an alternate site would likely result in similar or greater environmental impacts in every environmental impact criteria listed in the CEQA Guidelines Appendix G checklist. Therefore, an alternate site was not evaluated.

Alternative 3: No Biomass Conversion Facility

Alternative 3 would reduce the size of the proposed Project by removing the 2-acre Biomass Conversion Facility.

Description. Under Alternative 3, the proposed Project would only consist of the 36-acre composting facility. Under this alternative, the proposed construction and operation and the subsequent diversion of allowable organic waste stream would still occur; however, the biomass conversion facility would not be developed.

Environmental Considerations. Overall, the No Biomass Conversion Facility Alternative would result in similar but reduced impacts for all issue areas compared to the proposed Project. The No Biomass Conversion Facility Alternative would reduce the extent of ground disturbance; use of construction equipment, water, and wastewater; and number of employees required for construction and operation due to the elimination of the biomass conversion facility. Additionally, during operation, the reduced footprint is expected to require fewer hauling trips, require reduced operation of construction equipment, generate fewer emissions, require less water, and generate less wastewater.

The impacts from implementing the No Biomass Conversion Facility Alternative would be similar to the proposed Project but of a lesser intensity based on the reduced acreage for operations, specifically related to air quality, cultural resources, geology and soils, GHG, hydrology and water quality, transportation and traffic, and tribal cultural resources.

Evaluation of Alternatives

Alternative 1 (No Project) is not considered a viable alternative as it does not accomplish the main element of the Project, which is to develop a composting and biomass conversion facility in response to upcoming waste diversion mandates. Factors considered in the comparison of Alternative 2 (Alternative Site) include control of an alternative site, re-initiating the entire application process, the need for new technical studies and/or investigations (e.g., air quality/greenhouse gases, biological, cultural, geologic, hydrologic, traffic, etc.), and other considerations as noted earlier in this Chapter. Factors considered in the comparison of Alternative 3 (No Biomass Conversion Facility) include air quality, biological, energy, geology/soils (paleontological resources), greenhouse gas emissions, transportation (traffic), and tribal cultural, and economic considerations as noted earlier. Environmental considerations for CEQA purposes are discussed in the next section of this Chapter. In summary, the proposed Project is preferred over all other Alternatives for the following reasons:

- The proposed Project would result in compliance and implementation of State mandates (i.e.; legislation and requirements) such as AB 1826 (Chesbro, 2014) phased in mandatory commercial organic waste collection to 2020 following AB 341 (Chesbro, 2011) for mandatory commercial recycling collection SB 1383 SB 1383 (Lara, 2016) requires generators with local government and the local haulers within a shared responsibility framework to reduce 50% of all organics by 2020 and to reduce 75% of all organics by 2025 to mitigate methane. AB 876 (McCarty, 2015) requires the County to identify organic processing capacity to 2035 in their Annual Report, where all jurisdictions need to describe the progress made on AB 1826 in their Annual Report. AB 341 and AB 1826 placed the burden of mandatory collection on the generators with a local government planning effort.).
- The proposed Project contributes in implementing local and state landfill diversion goals by composting up to 200,000 annual tons of organic waste with the compost facility and 25,000 annual tons of wood waste.
- The proposed Project maintains ease of handling and transportation efficiencies by being located at an existing landfill that is readily accessible to all parts of Tulare County.
- The proposed Project is an allowed use with a special use permit in the existing AE-40 zone.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA Guidelines Section 15126.6 (e)(2) requires that the environmentally superior alternative be identified. If the environmentally superior alternative is the No Project Alternative, the EIR shall identify an environmentally superior alternative among the other alternatives.

The following analyses evaluates Alternatives 1, 2, and 3 against the proposed Project in order to identify the environmentally superior alternative. The relative environmental impacts associated with each of the Alternatives, as compared to the proposed Project, are summarized in **Table 5-1**. A matrix comparing the Evaluation Criteria and Project objectives as they pertain to each Alternative is provided in Table 5-1.

ALTERNATIVES EVALUATION

The proposed Alternatives were analyzed based on the six evaluation criteria listed earlier. All the Alternatives considered would not meet all the objectives of the proposed Project. In addition, each of the Alternatives has other individual deficiencies (See **Table 5-1)**.

Table 5-1
Alternatives Evaluation

Evaluation Criteria	No. 1 No Project	No. 2 Alternate Site	No. 3 No Biomass Conversion Facility
1. Project Specific Elements	No	Some	No
2. Project Objectives	No	No	No
3. Minimize Costs	No	No	Yes
4. Operational Efficiency	No	No	No
5. Lessen Significant Impacts	Yes	Some	Some
6. Physical Feasibility	No	Some	Yes

Alternative 1 – No Project Alternative. The No Project Alternative would avoid all potential construction- and operations-related impacts related to air quality, biological resources, cultural and tribal resources, hydrologic resources, greenhouse gas emissions, energy resources, and traffic resulting from the proposed Project and each of the other Alternatives identified earlier in the short term. However, the No Project Alternative would not meet any of the Project objectives or project-specific elements. The No Project Alternative would eventually adversely affect the County's objective of providing sufficient organic waste diversion sites in the long term by not allowing the facility to be developed at the Visalia Landfill site. Consideration of the No Project Alternative being the environmentally superior alternative would require the judgment of whether in balance, eliminating or avoiding certain impacts is of greater benefit environmentally than avoiding certain other impacts. Therefore, this Alternative would not meet the criteria as the Environmentally Superior Alternative.

Alternative 2 – Alternate Site. It is unknown if the environmental impacts associated with this Alternative would be less than the proposed Project because it would be speculative to evaluate an unsecured alternate site. This is primarily due to the fact that the applicant (the County) does not have control of an alternate site. However, as noted earlier, compost and biomass conversion facility construction and operation at an alternate site would result in environmental impacts that are likely equal to or greater than the proposed Project. The majority of Project impacts are also likely to occur at an alternate site. Therefore, impacts associated with air quality, biology, cultural, energy, geology/soils (paleontological resources), greenhouse gas emissions, transportation (traffic), and tribal cultural resources could likely be equal to or greater than the proposed Project. If an alternate site acquisition were viable, the County would have to re-initiate the application and environmental review process as a new project. Various engineering and technical studies would need to be completed. The time requirements for these activities would reduce the ability of the Applicant to accommodate projected organic waste diversion demand in a timely manner compared to the proposed Project. As such, this alternative would be the most complex, costly, and time-consuming alternative to implement. Therefore, Alternative 2 is not superior to the proposed Project and is not considered a viable alternative.

Alternative 3 – No Biomass Conversion Facility. As noted earlier, under Alternative 3, the proposed Project would be permitted for only the development of the composting facility. Operations would essentially be the same as the proposed Project except that biomass conversion facility would not be developed. Most of the environmental issues associated with Alternative 3 would be similar to those of the proposed Project. Apart from the No Project Alternative, Alternative 3 No Biomass Conversion Facility Project would be the Environmentally Superior alternative because it would result in less adverse physical impacts to the environment as noted above. However, the No Biomass Conversion Facility Project does not meet all of the County's Project objectives, particularly with regard to the County's goal to reduce organic waste from landfill disposal. In summary, based upon the above analyses, Alternative 3 is the Environmentally Superior Alternative as it would result in reduced significant impacts. However, it does not meet all of the evaluation criteria and importantly, it would not meet the economic and regulation objectives of the Project. **Table 5-2** contains a comparison of each Alternative's and the proposed Project's abilities to achieve the Project objectives and reduce environmental impacts.

Table 5-2
Impacts of Alternatives Compared to the Proposed Project

Environmental Issues	No. 1 No Project	No. 2 Alternate Site	No. 3 No Biomass Conversion Facility
Air Quality	Less	Similar	Less
Biological Resources	Less	Similar	Similar
Cultural Resources	Less	Similar	Less
Energy	Less	Similar	Less
Geology and Soils	Less	Similar	Similar
Greenhouse Gas Emissions	Less	Similar	Less
Hydrology and Water Quality	Less	Similar	Similar
Transportation and Traffic	Less	Similar	Less
Tribal Resources	Less	Similar	Less
Cumulative Impacts	Less	Similar	Less
Impact Reduction	**Yes**	**Generally No; depends on the site**	**Yes**

SUMMARY AND DETERMINATION

Only Alternatives 1 and 3 could potentially result in fewer impacts than the proposed Project's impacts. These Alternatives; however, would not meet the objectives of the proposed Project, nor would they meet most of the six evaluation criteria noted earlier. After this full, substantial, and deliberate analysis; the proposed Project remains the preferred alternative.

REFERENCES

See references cited in Chapter 3-1 – Air Quality, 3-2 – Biological Resources, 3-3 – Cultural Resources, 3-4 – Energy, 3-5 – Greenhouse Gas Emissions, 3-6 – Geology and Soils, 3-7 – Hydrology, 3-8 – Transportation, and 3.9 – Tribal Resources.

Chapter 6
Economic & Social Effects & Growth Inducing Impacts

INTRODUCTION

This chapter discusses economic, social and growth inducing effects of the Project. **Table 6-1** provides the CEQA requirements and a summary of the impact analysis.

Table 6-1
Summary of Economic, Social and Growth Inducing Impacts

Topic	Summary of Impact	CEQA Requirement
Economic Impact	The proposed Project will not result in negative impacts to the region as it is adding a compost and biomass conversion facility to the existing Visalia landfill site, to comply with upcoming organic waste diversion regulations. It may result in a slight increase in economic benefits to the region since the proposed Project will require an additional 15-20 employees to operate the new facilities.	CEQA does not have specific requirements for evaluating the economic impacts of a proposed Project. Section 15131 of CEQA Guidelines states that "Economic or social information may be included in an EIR or may be presented in whatever form the agency desires."
Social Impact	The proposed Project will not result in a disproportionate effect on minority populations, low-income populations, or Native Americans. The proposed Project does not pose any adverse environmental justice issues that would require mitigation.	The social impacts of a project include environmental justice considerations. California Government Code Section 65040.12 defines Environmental Justice as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations and policies."
Growth Inducing Effect	The proposed Project will not result in significant growth inducing impacts. The proposed Project will process and compost organic waste in an effort to divert organic materials from landfills, and in compliance with the upcoming SB 1383 regulations. The Project will not result in new housing. Growth inducing impacts will be less than significant.	CEQA Guidelines § 15126 (d) makes recommendations for analyzing impacts due to growth inducement, including discussing ways in which the project could foster economic or population growth, the construction of additional housing, or other factors which could remove obstacles to population growth or encourage and facilitate other activities which could impact the environment individually or cumulatively.

Therefore, implementation of the proposed Project will result in ***Less Than Significant*** environmental impacts, either individually or cumulatively, caused by either economic, social, or growth inducing effects. No mitigation measures are required.

DEMOGRAPHICS

"The unemployment rate in the Tulare County was 10.5 percent in August 2021, down from a revised 11.2 percent in July 2021, and below the year-ago estimate of 13.1 percent. This compares with an unadjusted unemployment rate of 7.5 percent for California and 5.3 percent for the nation during the same period."[1] The general demographic information can be found in **Table 6-2**.

Table 6-2
Profile of General Population and Housing Characteristics, 2018[2]

Demographic Profile Data	*Tulare County*
Total	*465,861*
% Hispanic or Latino	*65.2%*
% not Hispanic or Latino	*34.8%*
White alone	*28.0%*
Black or African American alone	*1.3%*
Asian alone	*3.6%*
Some other race alone	*0.3%*
Two or more races	*1.2%*
Total housing units	*150,217*

ECONOMIC IMPACTS

Under CEQA Guidelines 15131, "[e]conomic or social information may be included in an EIR or may be presented in whatever form the agency desires.

(a) Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes.

[1] State of California Employment Development Department. Unemployment Rate and Labor Force, Monthly EDD Press Release. Accessed in September 2021 at: http://www.labormarketinfo.edd.ca.gov/file/lfmonth/visa$pds.pdf.

[2] U.S. Census Bureau, 2018 ACS 1-Year Estimates Data Profiles. TableID: DP05. Accessed in September 2021 at: https://data.census.gov/cedsci/table?q=profile%20of%20general%20population%20and%20%20characteristics&g=0500000US06107&hidePreview=true&tid=ACSDP1Y2018.DP05&vintage=2018

(b) Economic or social effects of a project may be used to determine the significance of physical changes caused by the project. For example, if the construction of a new freeway or rail line divides an existing community, the construction would be the physical change, but the social effect on the community would be the basis for determining that the effect would be significant. As an additional example, if the construction of a road and the resulting increase in noise in an area disturbed existing religious practices in the area, the disturbance of the religious practices could be used to determine that the construction and use of the road and the resulting noise would be significant effects on the environment. The religious practices would need to be analyzed only to the extent to show that the increase in traffic and noise would conflict with the religious practices. Where an EIR uses economic or social effects to determine that a physical change is significant, the EIR shall explain the reason for determining that the effect is significant.

(c) Economic, social, and particularly housing factors shall be considered by public agencies together with technological and environmental factors in deciding whether changes in a project are feasible to reduce or avoid the significant effects on the environment identified in the EIR. If information on these factors is not contained in the EIR, the information must be added to the record in some other manner to allow the agency to consider the factors in reaching a decision on the project."[3]

Economic and Social Benefits of the Proposed Project

The proposed Project will provide multiple economic and social benefits as follows:

- The continued employment of local residents, by the expansion of operational solid waste management activities; and
- Construction of new waste processing equipment.

SOCIAL EFFECTS

Environmental Justice

"The basis for environmental justice lies in the Equal Protection Clause of the U.S. Constitution. The Fourteenth Amendment expressly provides that the states may not "deny to any person within [their] jurisdiction the equal protection of the laws" (U.S. Constitution, amend. XIV, §1).
On February 11, 1994, President Clinton signed Executive Order (E.O.) 12898, titled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." The executive order followed a 1992 report by the U.S. Environmental Protection Agency (U.S. EPA) indicating that "[r]acial minority and low-income populations experience higher than average exposures to selected air pollutants, hazardous waste facilities, and other forms of environmental pollution." Among other things, E.O. 12898 directed federal agencies to incorporate environmental justice into their missions."[4]

[3] CEQA Guidelines Section 15131
[4] State of California General Plan Guidelines 2003. Page 22. Governor's Office of Planning and Research.

The proposed project does not have any negative social effects. All potential environmental impacts were determined to be less than significant with mitigation.

Inappropriateness of Affordable Housing

The Project does not include a land use change from agricultural nor does it propose to add or remove any affordable housing. In addition, the Project site is not suitable for affordable housing as it is currently a landfill facility.

Appropriateness of location

The Project site is the existing Visalia landfill, surrounded by agricultural uses. This location is a favorable location because it is the current landfill site, is centrally located in the County, it is away from substantial sensitive land uses and is proximate to a major State highway.

GROWTH INDUCEMENT

As outlined in the CEQA Guidelines § 15126.2 (d), growth-inducing impact of the proposed Project should "[d]iscuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment."[5]

Generally, growth inducing impacts are a result of very large businesses or very large housing developments. A large influx of jobs or people would require additional services which could potentially induce growth related impacts. The proposed Project involves the development and operation of a compost and biomass conversion facility which ensure compliance with the upcoming SB 1383 regulations of diverting organic material from traditional landfill operations. The proposed Project will utilize approximately 15-20 employees and as such, the number of employees at the existing Visalia Landfill will not change substantially with implementation of the proposed Project. 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. Similarly, because no substantial job growth would occur, the proposed Project is not anticipated to increase the demand for new housing withing the surrounding area.

[5] CEQA Guidelines, Section 15126.2

The development of additional landfill facilities would not in itself be an inducement to growth. Local development would continue to occur with or without the compost and biomass facilities. As such, the proposed Project will not significantly induce growth. See summary in **Table 6-3**.

Table 6-3
Growth Impacts

Potential Growth Inducing Impacts	***Discussion***
Economic/Population Growth	*The proposed Project will add an additional 15-20 jobs to the existing permanent jobs at the landfill. Although the proposed Project will result in a slight economic benefit for Tulare County, the proposed Project will not induce substantial growth.*
Foster the Construction of Additional Housing	*The proposed Project will not result in a need for additional housing.*
Other Activities	*The proposed Project will not induce other growth-related activities.*

As noted in **Table 6-3**, ***Less Than Significant*** growth inducing impacts are anticipated.

References

CEQA Guidelines, Section 15131, 15126.2

State of California General Plan Guidelines 2003

State of California Employment Development Department. Unemployment Rate and Labor Force, Monthly EDD Press Release. Accessed in September 2021 at: http://www.labormarketinfo.edd.ca.gov/file/lfmonth/visa$pds.pdf.

U.S. Census Bureau, 2018 ACS 1-Year Estimates Data Profiles. TableID: DP05. Accessed in August 2021 at: https://data.census.gov/cedsci/table?q=profile%20of%20general%20population%20and%20%20characteristics&g=0500000US06107&hidePreview=true&tid=ACSDP1Y2018.DP05&vintage=2018

Chapter 7
Immitigable Impacts

Under California Environmental Quality Act (CEQA) Guidelines Section 15126.2 (b), "[w]here there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the Project is being proposed, notwithstanding their effect, should be described."[1] This analysis should include a description of any significant impacts, including those which can be mitigated but not reduced to a level of insignificance.

The proposed Project will not result in a significant and unavoidable impact. All impacts have been found to be Less Than Significant or have been mitigated to a level considered Less Than Significant.

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan Background Report, and/or Tulare County 2030 General Plan EIR.

No Irreversible Impacts

Under CEQA Guidelines Section 15126.2 (c), "[u]ses of nonrenewable resources during the initial and continued phases of the Project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the Project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified. (See Public Resources Code section 21100.1 and Title 14, California Code of Regulations, section 15127 for limitations to applicability of this requirement.)"[2]

Build-out of the Project would commit nonrenewable resources during project construction. During project operations, oil, gas, and other fossil fuels and nonrenewable resources would be consumed, primarily in the form of transportation fuel for project employees. Therefore, an irreversible commitment of nonrenewable resources would occur as a result of long-term project operations. However, assuming that those commitments occur in accordance with the adopted goals, policies, and implementation measures of the Tulare County General Plan, as a matter of public policy, those commitments have been determined to be acceptable. The Tulare County General Plan ensures that any irreversible environmental changes associated with those commitments will be minimized.

[1] 2013 CEQA Guidelines, Section 15126.2 (b)
[2] CEQA Guidelines, Section 15126.2 (c)

As contained in CEQA Guidelines Section 15043, "[a] public agency may approve a Project even though the Project would cause a significant effect on the environment, if the agency makes a fully informed and publicly disclosed decision that:

a) There is no feasible way to lessen or avoid the significant effect (see Section 15091); and
b) Specifically identified expected benefits from the Project outweigh the policy of reducing or avoiding significant environmental impacts of the Project."[3]

"An agency may prepare a statement of overriding considerations. As noted in CEQA Guidelines Section 15093, "CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed Project against its unavoidable environmental risks when determining whether to approve the Project. If the specific economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed Project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered acceptable."[4]

"When the lead agency approves a Project which will result in the occurrence of significant effects which are identified in the final EIR but are not avoided or substantially lessened, the agency shall state in writing the specific reasons to support its action based on the final EIR and/or other information in the record. The statement of overriding considerations shall be supported by substantial evidence in the record."[5]

"If an agency makes a statement of overriding considerations, the statement should be included in the record of the Project approval and should be mentioned in the notice of determination. This statement does not substitute for, and shall be in addition to, findings required pursuant to Section 15091."[6]

STATEMENT OF OVERRIDING CONSIDERATIONS

Based on the analysis contained in this EIR, there are No Environmental Impacts That Cannot Be Avoided and there are no irreversible impacts; therefore, a Statement of Overriding Considerations is not necessary. The Project's merits and objectives are discussed in the Project Description and are found to be consistent with the intent of Tulare County 2030 General Plan. In addition, the Project's merits outweigh any unavoidable and unmitigable impacts warranting a Statement of Overriding Considerations.

PROJECT BENEFIT STATEMENTS

Project Benefit #1: Aids in reducing organic waste from landfill.

[3] CEQA Guidelines, Section 15043
[4] Ibid., Section 15093 (a)
[5] Ibid., Section 15093 (b)
[6] Ibid., Section 15093 (c)

Provide regional composting and bioenergy capacity to meet the organic waste diversion requirements enacted by recent California legislation: Assembly Bill [AB] 341, which directs the California Department of Resources Recycling and Recovery (CalRecycle) to increase Statewide diversion of solid waste to 75% by 2020; AB 1826, which requires businesses that generate a specified amount of organic waste per week to arrange for appropriate processing (e.g., composting) for that waste to further reduce landfilling of such organic materials; Senate Bill [SB] 1383, approved November 3, 2020 and set to go into effect January 1, 2022, establishes targets to achieve 50% reduction in the level of Statewide disposal of organic waste from the 2014 level by 2020 and a 75% reduction by 2025.

Project Benefit # 2: Would allow composting of up to 200,000 tons annually

The Project would contribute in implementing local and state landfill diversion goals by composting up to 200,000 annual tons of organic material from unincorporated and incorporated areas within Tulare County.

Project Benefit # 3: Aids in meeting State GHG reduction criteria

Project would divert organic material from landfills and produce high-quality compost also while reducing GHG emissions by keeping organics out of landfills in compliance with SB 1383.

Project Benefit #4: Implements Tulare County General Plan policies for solid waste.

The proposed Project implements County policies to reduce, recycle, and compost waste materials; and ensure adequate capacity within the solid waste system for the processing, recycling, transmission, and disposal of solid waste.

Project Benefit # 5: Implementation of Countywide General Plan Policies.

Tulare County's General Plan Policies that are in with the Project's purpose and objectives are included in each CEQA Checklist Resource chapter contained in Chapters 3-1 through 3-9. A minimum of sixty-eight (68) General Policies apply to this Project as listed below:

I. AIR QUALITY – 11 Policies

AQ-1.1	Cooperation with Other Agencies
AQ-1.2	Cooperation with Local Jurisdictions
AQ-1.3	Cumulative Air Quality Impacts
AQ-1.4	Air Quality Land Use Compatibility
AQ-1.5	California Environmental Quality Act (CEQA) Compliance
AQ-1.7	Purchase of Low Emission/Alternative Fuel Vehicles
AQ-1.8	Greenhouse Gas Emissions Reduction Plan/Climate Action Plan
AQ-1.9	Support Off-Site Measures to Reduce Greenhouse Gas Emissions
AQ-2.2	Indirect Source Review
AQ-4.1	Air Pollution Control Technology

AQ-4.2	Dust Suppression Measures
II.	BIOLOGICAL RESOURCES – 5 Policies
ERM-1.1	Protection of Rare and Endangered Species
ERM-1.2	Development in Environmentally Sensitive Areas
ERM-1.15	Minimize Lighting Impacts
ERM-1.16	Cooperate with Wildlife Agencies
ERM-1.17	Conservation Plan Coordination
III.	CULTURAL RESOURCES – 6 Policies
ERM-6.1	Evaluation of Cultural and Archaeological Resources
ERM-6.2	Protection of Resources with Potential State or Federal Designations
ERM-6.3	Alteration of Sites with Identified Cultural Resources
ERM-6.4	Mitigation
ERM-6.9	Confidentiality of Archaeological Sites
ERM-6.10	Grading Cultural Resources Sites
IV.	ENERGY – 4 Policies
ERM-4.1	Energy Conservation and Efficiency Measures
ERM-4.3	Local and State Programs
ERM-4.4	Promote Energy Conservation Awareness
ERM-4.6	Renewable Energy
V.	GEOLOGY AND SOILS – 6 Policies
ERM-7.2	Soil Productivity
ERM-7.3	Protection of Soils on Slopes
HS-2.1	Continued Evaluation of Earthquake Risks
HS-2.4	Structure Siting
HS-2.7	Subsidence
HS-2.8	Alquist-Priolo Act Compliance
VI.	GREENHOUSE GAS EMISSIONS – 10 Policies
AQ-1.5	California Environmental Quality Act (CEQA) Compliance
AQ-1.7	Support Statewide Climate Change Solutions
AQ-1.8	Greenhouse Gas Emissions Reduction Plan/Climate Action Plan
AQ-1.9	Support Off-Site Measures to Reduce Greenhouse Gas Emissions
AQ-10	Alternative Fuel Vehicle Infrastructure
AQ-3.5	Alternative Energy Design
ERM-4.1	Energy Conservation and Efficiency Measures
ERM-4.6	Renewable Energy

ERM-4.7	Reduce Energy Use in County Facilities
ERM-4.8	Energy Efficient Standards

VII	HYDROLOGY AND WATER QUALITY - 14 Policies

AG-1.17	Agricultural Water Resources
HS-4.4	Contamination Prevention
HS-5.2	Development in Floodplain Zones
HS-5.4	Multi-Purpose Flood Control Measures
HS-5.9	Floodplain Development Restrictions
HS-5.11	Natural Design
WR-2.1	Protect Water Quality
WR-2.2	National Pollutant Discharge Elimination System (NDPES) Enforcement
WR-2.3	Best Management Practices (BMPs)
WR-2.4	Construction Site Sediment Control
WR-2.5	Major Drainage Management
WR-2.6	Degraded Water Resources
WR-2.8	Point Source Control
WR-3.10	Diversion of Surface Water

VIII	TRANSPORTATION/TRAFFIC – 5 Policies

HS-1.9	Emergency Access - The County shall require, where feasible, road networks (public and private) to provide for safe and ready access for emergency equipment and provide alternate routes for evacuation.
TC-1.13	Land Dedication for Roadways and Other Travel Modes
TC-1.14	Roadway Facilities
TC-1.15	Traffic Impact Study
TC-1.16	County Level Of Service (LOS) Standards

IX.	TRIBAL CULTURAL RESOURCES – 7 Policies

ERM-6.1	Evaluation of Cultural and Archaeological Resources
ERM-6.2	Protection of Resources with Potential State or Federal Designations
ERM-6.3	Alteration of Sites with Identified Cultural Resources
ERM-6.4	Mitigation
ERM-6.8	Solicit Input from Local Native Americans
ERM-6.9	Confidentiality of Archaeological Sites
ERM-6.10	Grading Cultural Resources Sites

DEFINITIONS AND/OR ACRONYMS

Acronyms

AG	Agriculture
AB	Assembly Bill (California)
ARB or CARB	California Air Resources Board
CAP	Climate Action Plan
CEQA	California Environmental Quality Act
CalRecycle	California Department of Resources Recycling and Recovery
EIR	Environmental Impact Report GHG Greenhouse Gases
ERM	Environmental Resource Management
HS	Health and Safety
GHG	Greenhouse Gases
SB	Senate Bill (California)
TC	Transportation and Circulation
WR	Water Resorces

REFERENCES

California Natural Resources Agency. California Environmental Quality Act (CEQA). Sections 15126.2(c), 15043, 15091(a)(3), and 15093 (a)(b)(c) Accessed August 2021 at: https://resources.ca.gov/-/media/CNRA-Website/Files/Programs-and-Projects/CEQA/CEQA-Homepage/2019_CEQA_Statutes_and_Guidelines.pdf?la=en&hash=28D5D3CF051762486FC0A43BB50921F85E30E8CC

Tulare County. Background Report Tulare County General Plan. Accessed August 2021 at: http://generalplan.co.tulare.ca.us/documents/GeneralPlan2010/BackgroundReport.pdf.

Tulare County. 2030 Update Tulare County General Plan. Accessed August 2021 at: http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/000General%20Plan%202030%20Part%20I%20and%20Part%20II/GENERAL%20PLAN%202012.pdf.

Chapter 8
Mitigation Monitoring and Reporting Program

This Draft Mitigation Monitoring and Reporting Program (MMRP) has been prepared in compliance with State law and based upon the findings of the Draft Environmental Impact Report (EIR) for the proposed Project. The MMRP lists mitigation measures recommended in the draft EIR for the proposed Project and identifies monitoring and reporting requirements.

The CEQA Public Resources Code Section 21081.6 requires the Lead Agency decision making body is going to approve a project and certify the EIR that it also adopt a reporting or monitoring program for those measures recommended to mitigate or avoid significant/adverse effects of the environment identified in the EIR. The law states that the reporting or monitoring program shall be designed to ensure compliance during project implementation. The MMRP is to contain the following elements:

- **Action and Procedure.** The mitigation measures are recorded with the action and procedure necessary to ensure compliance. In some instances, one action may be used to verify implementation of several mitigation measures.
- **Compliance and Verification.** A procedure for compliance and verification has been outlined for each action necessary. This procedure designates who will take action, what action will be taken and when and by whom and compliance will be monitored and reported and to whom it will be report. As necessary the reporting should indicate any follow-up actions that might be necessary if the reporting notes the impact has not been mitigated.
- **Flexibility.** The program has been designed to be flexible. As monitoring progresses, changes to compliance procedures may be necessary based upon the recommendations by those responsible for the MMRP. As changes are made, new monitoring compliance procedures and records will be developed and incorporated into the program.

Table 8-1 presents the Mitigation Measures identified for the proposed Project in this EIR. Each Mitigation Measure is identified by the impact number. For example, 3.2-1 would be the first Mitigation Measure identified in the biological resources analysis of the draft EIR.

The first column of **Table 8-1** identifies the Mitigation Measure. The second column, entitled "Monitoring Timing/Frequency," identifies the time the Mitigation Measure should be initiated and the frequency of the monitoring that should take place to assure the mitigation is being or has been implemented to achieve the desired outcome or performance standard. The third column, "Action Indicating Compliance," identifies the requirements of compliance with the Mitigation Measure. The fourth column, "Monitoring Agency," names the party ultimately responsible for ensuring that the Mitigation Measure is implemented. The fifth column, "Person/Agency Conducting Monitoring/Reporting" names the party/agency/entity responsible for verification that the Mitigation Measure has been implemented. The last three columns will be used by the Lead Agency (County of Tulare) to ensure that individual Mitigation Measures have been complied with and monitored.

Table 8-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Conducting Monitoring / Reporting	Verification of Compliance		
					Initials	Date	Remarks
3.1 AIR QUALITY							
3.1-1 The Tulare County Solid Waste Department shall mitigate 29.44 TPY (or other amount determined by the SJVUAPCD) of VOC emissions through the use of NSR requirements for ERCs (or other means acceptable to the SJVUAPCD), to ensure criteria pollutant thresholds are not exceeded.	Prior to and during construction-related activities. On-going for operations-related activities.	Applicant receives applicable Air District approvals/permits	County of Tulare Solid Waste Division / Planning Department	County of Tulare Solid Waste Division			
3.2 BIOLOGICAL RESOURCES							
Swainson's hawk							
3.2-1 *Temporal Avoidance.* In order to avoid impacts to nesting birds, construction activities in the rural zone will occur, where possible, outside the nesting season, typically defined as March 1-September 15.	Prior to start of construction.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable.	County of Tulare Solid Waste	County of Tulare Solid Waste			
3.2-2 *Pre-construction Surveys*. If construction activities in the rural zone must occur between March 1 and September 15, a qualified biologist will conduct preconstruction nest surveys for Swainson's hawks on and within ½ mile of the work area within 30 days prior to the start of construction. The survey will consist of inspecting all accessible, suitable trees of the survey area for the presence of nests and hawks.	Prior to construction-related activities.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable	County of Tulare Solid Waste	Qualified biologist.			

Table 8-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Conducting Monitoring / Reporting	Verification of Compliance		
					Initials	Date	Remarks
3.2-3 *Avoidance of Active Nests.* Should any active Swainson's hawk nests be discovered within the survey area, the observation will be submitted to the CNDDB, and an appropriate disturbance-free buffer will be established around the nest based on local conditions and agency guidelines. Disturbance-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently.	Prior to construction-related activities.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable	County of Tulare Solid Waste Division	Qualified biologist.			
Burrowing Owl							
3.2-4 *Pre-construction Surveys.* A pre-construction survey for burrowing owls will be conducted by a qualified biologist within 30 days of the onset of project-related activities involving ground disturbance or heavy equipment use. The survey area will include all suitable habitat on and within 500 feet of project impact areas, where accessible.	Prior to construction-related activities.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable	County of Tulare Solid Waste Division	Qualified biologist.			
3.2-5 *Avoidance of Active Nests.* If pre-construction surveys and subsequent project activities are undertaken during the breeding season (February 1-August 31) and active nest burrows are located within or near project impact areas, a 250-foot construction setback will be established around active owl nests, or alternate avoidance measures implemented in consultation with CDFW. The buffer areas will	Prior to construction-related activities.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable	County of Tulare Solid Waste Division and CA Dept. Fish and Wildlife (CDFW)	Qualified biologist.			

Table 8-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	**Monitoring Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Conducting Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
be enclosed with temporary fencing to prevent construction equipment and workers from entering the setback area. Buffers will remain in place for the duration of the breeding season, unless otherwise arranged with CDFW. After the breeding season (i.e., once all young have left the nest), passive relocation of any remaining owls may take place as described below.							
3.2-6 *Passive Relocation of Resident Owls.* During the non-breeding season (September 1-January 31), resident owls occupying burrows in project impact areas may be passively relocated to alternative habitat in accordance with a relocation plan prepared by a qualified biologist. Passive relocation may include one or more of the following elements: 1) establishing a minimum 50 foot buffer around all active burrowing owl burrows, 2) removing all suitable burrows outside the 50 foot buffer and up to 160 feet outside of the impact areas as necessary, 3) installing one-way doors on all potential owl burrows within the 50 foot buffer, 4) leaving one-way doors in place for 48 hours to ensure owls have vacated the burrows, and 5) removing the doors and excavating the remaining burrows within the 50 foot buffer.	Prior to construction-related activities.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable	County of Tulare Solid Waste Division and CDFW	Qualified biologist.			

Table 8-1 Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Monitoring Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Conducting Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
San Joaquin kit fox							
3.2-7 *Pre-construction Surveys.* Pre-construction surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance, construction activities, and/or any project activity likely to impact the San Joaquin kit fox. These surveys will be conducted in accordance with the USFWS *Standard Recommendations*. The primary objective is to identify kit fox habitat features (e.g.; potential dens and refugia) on the project site and evaluate their use by kit foxes through use of remote monitoring techniques such as motion-triggered cameras and tracking medium. If an active kit fox den is detected within or immediately adjacent to the area of work, the USFWS and CDFW shall be contacted immediately to determine the best course of action.	Prior to initiation of construction	Issuance of building permit	County of Tulare Solid Waste Division and CDFW	Qualified biologist			
3.2-8 *Avoidance.* Should a kit fox be found using any of the sites during preconstruction surveys, the project will avoid the habitat occupied by the kit fox and the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified.	Prior to and during construction	Issuance of building permit	County of Tulare Solid Waste Division and CDFW	County of Tulare Solid Waste Division & Qualified biologist			
3.2-9 *Minimization*. Construction activities shall be carried out in a manner that minimizes disturbance to kit foxes. Minimization measures include, but are not limited to: restriction of project-related vehicle traffic to established	Prior to and during construction	Issuance of building permit	County of Tulare Solid Waste Division and CDFW	County of Tulare Solid Waste Division & Qualified biologist			

Table 8-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Conducting Monitoring / Reporting	Verification of Compliance		
					Initials	Date	Remarks
roads, construction areas, and other designated areas; inspection and covering of structures (e.g., pipes), as well as installation of escape structures, to prevent the inadvertent entrapment of kit foxes; restriction of rodenticide and herbicide use; and proper disposal of food items and trash.							
3.2-10 *Employee Education Program*. Prior to the start of construction the applicant will retain a qualified biologist to conduct a tailgate meeting to train all construction staff that will be involved with the project on the San Joaquin kit fox. This training will include a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during project construction and implementation.	Prior to initiation of construction	Issuance of building permit	County of Tulare Solid Waste Division and CDFW	County of Tulare Solid Waste			
3.2-11 *Mortality Reporting.* The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified in writing within three working days in case of the accidental death or injury of a San Joaquin kit fox during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.	During construction	Issuance of building permit	County of Tulare Solid Waste Division and CDFW	County of Tulare Solid Waste Division & Qualified biologist			

Table 8-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Conducting Monitoring / Reporting	Verification of Compliance		
					Initials	Date	Remarks
3.3 CULTURAL RESOURCES							
3.3-1 In the event that archaeological or paleontological resources are discovered during site excavation, the County shall require that grading and construction work on the project site be immediately suspended until the significance of the features can be determined by a qualified archaeologist or paleontologist. In this event, the property owner shall retain a qualified archaeologist/paleontologist to make recommendations for measures necessary to protect any site determined to contain or constitute an historical resource, a unique archaeological resource, or a unique paleontological resource or to undertake data recover, excavation analysis, and curation of archaeological or paleontological materials. County staff shall consider such recommendations and implement them where they are feasible in light of Project design as previously approved by the County.	During construction	Daily or as needed throughout the construction period if suspicious resources are discovered	County of Tulare Solid Waste Division via field evaluation of the resource finds by a qualified archaeologist	A qualified archaeologist shall document the results of field evaluation and shall recommend further actions that shall be taken to mitigate for unique resource or human remains found, consistent with all applicable laws including CEQA.			
3.3-2 The project proponent shall avoid and minimize impacts to paleontological resources. If a potentially significant paleontological resource is encountered during ground disturbing activities, all construction within a 100-foot radius of the find shall immediately cease until a qualified paleontologist determines whether the resources requires further study. The owner shall include a standard inadvertent discovery clause in every construction contract	During construction	Daily or as needed throughout the construction period if suspicious resources are discovered	County of Tulare Solid Waste Division via field evaluation of the resource finds by a qualified archaeologist	A qualified archaeologist shall document the results of field evaluation and shall recommend further actions that shall be taken to			

Table 8-1 Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Monitoring Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Conducting Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
to inform contractors of this requirement. The paleontologist shall notify the Tulare County Resource Management Agency and the project proponent of the procedures that must be followed before construction is allowed to resume at the location of the find. If the find is determined to be significant and the Tulare County Resource Management Agency determines avoidance is not feasible, the paleontologist shall design and implement a data recovery plan consistent with applicable standards. The plan shall be submitted to the Tulare County Resource Management Agency for review and approval. Upon approval, the plan shall be incorporated into the project.				mitigate for unique resource or human remains found, consistent with all applicable laws including CEQA.			
3.3-3 Consistent with Section 7050.5 of the California Health and Safety Code and (CEQA Guidelines) Section 15064.5, if human remains of Native American origin are discovered during project construction, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Public Resources Code Sec. 5097). In the event of the accidental [that is, unanticipated] discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken: 1. There shall be no further excavation or disturbance of the site or any nearby area	During construction	Daily or as needed throughout the construction period if suspicious resources are discovered	County of Tulare Solid Waste Division via field evaluation of the resource finds by a qualified archaeologist	A qualified archaeologist shall document the results of field evaluation and shall recommend further actions that shall be taken to mitigate for unique resource or human remains found, consistent with all applicable			

Table 8-1 Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Monitoring Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Conducting Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
reasonably suspected to overlie adjacent human remains until: a. The Tulare County Coroner/Sheriff must be contacted to determine that no investigation of the cause of death is required; and b. If the coroner determines the remains to be Native American: i. The coroner shall contact the Native American Heritage Commission within 24 hours. ii. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. iii. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code section 5097.98, or 2. Where the following conditions occur, the landowner or his/her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the				laws including CEQA.			

Table 8-1 Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Monitoring Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Conducting Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
property in a location not subject to further subsurface disturbance. a. The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission. b. The descendant fails to make a recommendation; or c. The landowner or his authorized representative rejects the recommendation of the descendent.							
3.5 GEOLOGY AND SOILS (PALEONTOLOGICAL RESOURCES)							
3.5-1 The property owner shall avoid and minimize impacts to paleontological resources. If a potentially significant paleontological resource is encountered during ground disturbing activities, all construction within a 100-foot radius of the find shall immediately cease until a qualified paleontologist determines whether the resources require further study. The owner shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. The paleontologist shall notify the Tulare County Resource Management Agency and the project proponent of the procedures that must be followed before construction is allowed to resume at the location of the find. If the find is determined to be significant and the Tulare	During construction activities.	Daily or as needed throughout the construction period if suspicious resources are discovered	County of Tulare Solid Waste Division	County of Tulare Solid Waste Division			

Table 8-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Conducting Monitoring / Reporting	Verification of Compliance		
					Initials	**Date**	**Remarks**
County Resource Management Agency determines avoidance is not feasible, the paleontologist shall design and implement a data recovery plan consistent with applicable standards. The plan shall be submitted to the Tulare County Resource Management Agency for review and approval. Upon approval, the plan shall be incorporated into the project.							
3.9 TRIBAL CULTURAL RESOURCES							
3.9-1 In the event that historical, archaeological, or paleontological resources are discovered during site excavation, the County shall require that grading and construction work on the Project site be immediately suspended until the significance of the features can be determined by a qualified archaeologist or paleontologist. In this event, the property owner shall retain a qualified archaeologist/paleontologist to provide recommendations for measures necessary to protect any site determined to contain or constitute an historical resource, a unique archaeological resource, or a unique paleontological resource or to undertake data recover, excavation analysis, and curation of archaeological or paleontological materials. County staff shall consider such recommendations and implement them where they are feasible in light of Project design as previously approved by the County.	During construction	Daily or as needed throughout the construction period if suspicious resources are discovered	Tulare County Solid Waste Division / Planning Department	A qualified archaeologist shall document the results of field evaluation and shall recommend further actions that shall be taken to mitigate for unique resource or human remains found, consistent with all applicable laws including CEQA.			

Table 8-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Conducting Monitoring / Reporting	Verification of Compliance		
					Initials	Date	Remarks
3.9-2 Consistent with Section 7050.5 of the California Health and Safety Code and (CEQA Guidelines) Section 15064.5, if human remains of Native American origin are discovered during Project construction, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Public Resources Code Sec. 5097). In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken: 1. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until: a. The Tulare County Coroner/Sheriff must be contacted to determine that no investigation of the cause of death is required; and b. If the coroner determines the remains to be Native American: i. The coroner shall contact the Native American Heritage Commission within 24 hours. ii. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.	During construction	Daily or as needed throughout the construction period if suspicious resources are discovered	County of Tulare Solid Waste Division	A qualified archaeologist shall document the results of field evaluation and shall recommend further actions that shall be taken to mitigate for unique resource or human remains found, consistent with all applicable laws including CEQA.			

Table 8-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Conducting Monitoring / Reporting	Verification of Compliance		
					Initials	Date	Remarks
iii. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code section 5097.98, or 2. Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance. a. The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission. b. The descendant fails to make a recommendation; or c. The landowner or his authorized representative rejects the recommendation of the descendent.							

Chapter 9
Report Preparation

INTRODUCTION

Key persons from the County of Tulare and the consulting firms that contributed to preparation of the Draft Focused Environmental Impact Report (Draft EIR) are identified below:

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- Raj Rangaraj, PhD., P.E., MBA; Client Service Manager
- Russell Kingsley, C.A.P.P., C.P.P, B.S.; SJVAPCD Permitting Specialist
- Julie Mitchell; B.S.; CEQA Air Quality Specialist

Technical documents have been prepared by:

- Edgar & Associates - *Report of Composting Site Information for the Visalia Landfill Composting Facility.* July 2021 (See Appendix "D")
- Tulare County Resource Management Agency – *Biological Resources Evaluation for the Visalia Landfill - Compost and Biomass Conversion Facility Project.* November 2021. (See Appendix "B")

  Jessica Willis, Planner IV
- Yorke Engineering, LLC. – *Air Quality and GHG Technical Report for the Tulare County Solid Waste Department Compost and Bioenergy Facilities.* November 2021. (See Appendix "A")

APPENDIX “A”

AIR QUALITY AND GREENHOUSE GAS EMISSIONS

Air Quality and GHG Technical Report

Tulare County Solid Waste Department

Compost and Bioenergy Facilities

Visalia Landfill
8614 Avenue 328
Visalia, CA 93291

November 2021

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Air Quality and GHG Technical Report

Air Quality and GHG Technical Report

Prepared for:

Tulare County
Solid Waste Department
Compost and Bioenergy Facilities
Visalia Landfill
8614 Avenue 328
Visalia, CA 93291

November 2021

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Appendices

List of Acronyms, Abbreviations, and Symbols

AAQA	Ambient Air Quality Analysis
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ADC	Alternate Daily Cover
AQAP	Air Quality Attainment Plan
ATC	Authority to Construct
ATCM	Airborne Toxic Control Measure
BACM	Best Available Control Measure
BACT	Best Available Control Technology
BAU	Business as Usual
BDT	Bone-Dry Ton
BMP	Best Management Practice
BPS	Best Performance Standards
CA	California
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model®
CalRecycle	California Department of Resources Recycling and Recovery
CAP	Tulare County Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CASP	Covered Aerated Static Pile
CCAP	Climate Change Action Plan
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	Methane
C:N	Carbon to Nitrogen Ratio
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
County	Tulare County
CTG	[EPA] Control Techniques Guidelines
CTI	California Toxics Inventory
CUP	Conditional Use Permit
DOORS	Diesel Off-Road Online Reporting System
DPM	Diesel Particulate Matter
dscf	Dry Standard Cubic Foot
e-GGRT	California electronic greenhouse gas reporting tool

EPA	[United States] Environmental Protection Agency
EO	Executive Order
ERC	Emission Reduction Credit
FR	Federal Register
GAMAQI	[SJVAPCD] Guidance for Assessing and Mitigating Air Quality Impacts
GHG	Greenhouse Gas
GWP	Global Warming Potential
H_2S	Hydrogen Sulfide
H&SC	[California] Health & Safety Code
HAP	Hazardous Air Pollutant
HFC	Hydrofluorocarbon
HI	Hazard Index
hp	Horsepower
hr	Hour
HRA	Health Risk Assessment
IC	Internal combustion
IPCC	International Panel on Climate Change
ISR	Indirect Source Review
lb	Pound
LFG	Landfill gas
MMBtu	Million British thermal unit
MMT	Million Metric Tons
MRR	[GHG] Mandatory Reporting Regulation
MSW	Municipal Solid Waste
MT	Metric Ton
MW	Megawatt
N_2O	Nitrous Oxide
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NH_3	Ammonia
NO_x	Oxides of Nitrogen
NO_2	Nitrogen Dioxide
NR	Not Required
NSPS	New Source Performance Standard
NSR	New Source Review
O_3	Ozone
OEHHA	[California] Office of Environmental Health Hazard Assessment
OIMP	Odor Impact Minimization Plan
$PM_{2.5}$	Fine Particulate Matter (Less Than 2.5 Microns in Size)
PM_{10}	Respirable Particulate Matter (Less Than 10 Microns in Size)

ppb	Parts per Billion
ppm	Parts per Million
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
PTO	Permit to Operate
PVC	Polyvinyl Chloride
RACM	Reasonably Available Control Measure
RACT	Reasonably Available Control Technology
RMA	[Tulare County] Resource Management Agency
ROG	Reactive Organic Gas
SB	Senate Bill
SCR	Selective Catalytic Reduction
SF_6	Sulfur Hexafluoride
SIL	Significant Impact Level
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLAMS	State and Local Air Monitoring Station
SLCP	Short-Lived Climate Pollutant
SO_2	Sulfur Dioxide
SO_4^{2-}	Sulfates
SO_x	Oxides of Sulfur
SSIPE	Stationary Source Increase in Permitted Emissions
SSPE1	Pre-Project Stationary Source Potential to Emit
SSPE2	Post-Project Stationary Source Potential to Emit
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TPD	Tons per Day
TPY	Tons per Year
TS	Total Score
U.S.	United States
UFP	Ultra-Fine Particles
VCM	Vinyl chloride monomer
VDECS	Verified Diesel Emission Control Strategies
VERA	Voluntary Emission Reduction Agreement
VOC	Volatile Organic Compound
WDR	Waste Discharge Requirement
yr	Year
°C	Degrees Celsius
°F	Degrees Fahrenheit

EXECUTIVE SUMMARY

Project Overview

Tulare County Solid Waste Department intends to develop a compost facility featuring covered aerated static pile (CASP) technology to comply with the upcoming Senate Bill (SB) 1383 regulations. The County intends to enter into a public/private partnership to operate the facility. The compost facility will be located on the County's Visalia Landfill property that encompasses approximately 634 acres, of which the compost facility will occupy 36 acres. The compost facility will be designed to accept up to 200,000 tons per year (TPY) of organic material that would have otherwise been landfilled. The compost facility would install and operate processing and composting equipment, a 50,000-square-foot processing building, paved compost pads, and a lined storm water/contact water retention pond.

The Solid Waste Department is also proposing to develop a 2.0-megawatt (MW) bioenergy facility at the Visalia Landfill. The County intends to enter into a public/private partnership to operate the facility. The facility will use waste wood as the feedstock to produce electricity, heat, and biochar. The wood waste would be diverted from the landfill. The facility will utilize approximately 18,000 bone-dry tons (BDT) of wood chips per year or 25,000 TPY of wet recovered wood waste and produce 2.0 MW (net) of electrical energy. In addition, the facility will also produce approximately 20 to 30 million British thermal units (MMBtu) of waste heat and approximately 300 to 600 pounds of biochar per hour. Facility equipment will include grinding equipment, a non-fired wood dryer, a gasifier, two syngas-fueled engine-generators (gensets), a cooling tower, and a limited-use flare.

Although it is expected that the compost and the bioenergy facilities will be permitted separately by the San Joaquin Valley Air Pollution Control District (SJVAPCD) and may have separate operators, both facilities are addressed together in this Technical Report as two components of the proposed Project.

The objectives of the proposed project are:

- Provide compost capacity for an organics diversion program in Tulare County as required by California legislation;
- Reduce methane emissions from landfills by diverting organics from landfill, composting new feedstocks, and reducing emissions of greenhouse gases (GHGs) by sequestering nutrient-rich compost in soils;
- Modify an existing, strategically integrated waste management facility, the Visalia Landfill, to accommodate the growing regulatory demand for composting mixed materials, organic waste, and food waste;
- Receive and compost food wastes derived from commercial and residential sources to increase diversion of organic materials from landfills;
- Continue to provide economic benefits to Tulare County through employment of local residents, expansion of operational solid waste management activities, and construction of new processing equipment;

- Contribute to the implementation of Assembly Bill (AB) 341, which directs the California Department of Resources Recycling and Recovery (CalRecycle) to increase statewide diversion of organic waste from landfills to 75% by 2020;
- Enhance the business community's ability to comply with AB 1826 which, as of April 1, 2016, requires businesses that generate a specific amount of organic waste per week to arrange for recycling services for that organic waste in a specified manner (such as composting) to substantially reduce landfill disposal of food wastes; and
- Create water saving opportunities by using compost to enhance agricultural soil.

Air Quality Impact Analyses

The air quality impact analyses consisted of a determination of the criteria pollutant[1] emissions due to construction and operations of the proposed project. An Ambient Air Quality Analysis (AAQA) using dispersion models and an evaluation of potential health risks due to toxic air contaminants (TACs) were also conducted. The potential for impacts due to odors from the proposed project was reviewed.

Construction Emissions

The construction emissions analysis was performed using the California Emissions Estimator Model® (CalEEMod) version 2016.3.2 (CAPCOA 2019), the official statewide land use computer model designed to provide a uniform platform for estimating potential criteria pollutant emissions associated with construction of a land use project. The model quantifies direct emissions from construction, including vehicle use, and can incorporate mitigation such as enhanced dust control, if needed. Construction emissions are summarized in Table ES-1 and compared to the SJVAPCD California Environmental Quality Act (CEQA) significance threshold. As shown, the criteria pollutant emissions due to Project construction are less than significant.

Operations Emissions

Operational emissions are calculated based on proposed throughput of both the compost area and the bioenergy facility using standard agency-accepted emission factors. Annual criteria pollutant emissions in are summarized in Table ES-1. In the SJVAPCD, sources subject to permitting are compared to the CEQA significance criteria separately from sources not required to obtain permits, such as on-road mobile sources. Permitted source emissions that are over the applicable thresholds may require emissions reductions credits (ERCs) to offset the emissions to meet the new source review (NSR) requirements of the SJVAPCD.

As shown in the table, after the application of ERCs and SJVAPCD's Voluntary Emission Reduction Agreement (VERA) mitigation for volatile organic compound (VOC) emissions, emissions from the proposed Project would be less than the CEQA significance thresholds for criteria pollutant emissions from construction and operation of permitted and non-permitted sources. Emissions of ozone precursors (NO_x and VOC) and non-attainment

[1] Criteria pollutants are pollutants for which federal or State ambient air quality standard have been set to protect human health and include, but are not limited to, nitrogen oxides (NO_x), sulfur oxides (SO_x), carbon monoxide (CO), and fine and respirable particulate matter (PM_{10} and $PM_{2.5}$). VOC, also known as reactive organic gases (ROGs), is also regulated as criteria pollutants since VOC is a precursor to ozone.

pollutants (PM_{10}) not subject to NSR offset requirements could also be mitigated through VERA program.

Table ES-1: Comparison of Construction and Operational Emissions to CEQA Significance Thresholds

Category	NO_x (TPY)	VOC (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)
Project Construction Emissions	3.4	2.1	3.0	0.01	0.3	0.2
CEQA Construction Threshold	10	10	100	27	15	15
Exceed Threshold?	No	No	No	No	No	No
Project Permitted Source Emissions	4.0	37.7	26.6	0.5	1.8	0.9
SJVAPCD Rule 2202 ERCs	NR	(19.4)[1]	NA	NA	NR	NA
Proposed VERA Mitigation	--	(9.4)	--	--	--	--
Net emissions after Offsets	4.0	10.0	26.6	0.5	1.8	0.9
CEQA Permitted Source Threshold	10	10	100	27	15	15
Exceed Threshold?	No	No	No	No	No	No
Project Non-Permitted Source Emissions	3.5	0.4	6.9	0.03	1.5	0.3
CEQA Non-Permitted Source Threshold	10	10	100	27	15	15
Exceed Threshold?	No	No	No	No	No	No

Notes:

1. It is anticipated that the compost area and bioenergy facility will be permitted separately. Only the VOC emissions over 10 TPY for the compost area will be subject to NSR ERCs.

NR: Not required (below SJVAPCD NSR offset thresholds)

NA: Not Applicable (not subject to offsets)

Ambient Air Quality Analysis

Air dispersion models calculate the atmospheric transport and fate of pollutants from the emissions source. The models calculate the concentrations of selected pollutants at specific downwind ground-level points, such as residential or off-site workplace receptors. The transformation (fate) of an airborne pollutant, its movement with the prevailing winds (transport), its crosswind and vertical movement due to atmospheric turbulence (dispersion), and its removal due to dry and wet deposition are influenced by the pollutant's physical and chemical properties and meteorological and environmental conditions. Factors such as distance from the source to the receptor, meteorological conditions, intervening land use and terrain, pollutant release characteristics, and background pollutant concentrations affect the predicted concentration of an air pollutant. Air dispersion models take these factors into consideration when calculating downwind ground-level pollutant concentrations.

The air dispersion model used for these analyses was AERMOD version 21112, with the Lakes Environmental Software implementation/user interface, AERMOD View™ version 10.0.1. For the AAQA, actual emissions for each criteria pollutant and source are used in AERMOD.

The AAQA demonstrates that the Project will not cause an exceedance of the nitrogen dioxide (NO_2), sulfur dioxide (SO_2), or carbon monoxide (CO) national ambient air quality standards (NAAQS) or California ambient air quality standards (CAAQS). Since background respirable particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$) concentrations in the project area are already higher than the NAAQS and CAAQS, the modeled concentrations of these pollutants were compared to the SJVAPCD Significant Impact Levels (SILs). The model-predicted PM_{10} and $PM_{2.5}$ concentrations from all on-site exhaust sources are less than the SILs. Calculated maximum emissions from the on-site fugitive dust sources resulted in model-predicted concentrations that are less than the PM_{10} and $PM_{2.5}$ fugitive dust SILs. Thus, the proposed Project will not have a significant adverse impact on ambient air quality.

Health Risk Prioritization

The SJVAPCD requires the evaluation of the TAC emissions from the Project to determine the potential health risk impacts, A two-step process can be followed, where initially a screening risk prioritization is conducted. If the potential for high health risks is found, then a Health Risk Assessment (HRA) may be required. The HRA would predict the potential acute, chronic, and carcinogenic health risks from the Project.

The California Air Pollution Control Officers Association (CAPCOA) prioritization guidelines outline a technique for calculating a prioritization score that helps air districts identify priority facilities for risk assessment, which involves consideration of potency, toxicity, quantity of emissions, and proximity to sensitive receptors such as hospitals, daycare centers, schools, worksites, and residences. If the prioritization score exceeds the intermediate risk level or high risk level after consideration of additional factors, a refined HRA is recommended to determine if the Project's potential health risks are significant.

- Low Score: Projects having a total score (TS) less than 1 are low risk and are not likely to have an adverse health risk.
- Intermediate Score: Projects having a TS at least 1 and less than 10 need to evaluate additional factors to determine if the project's TAC emissions will have a less than significant health risk.
- High Score: Projects having a TS equal to or over 10 may have high risk. A refined HRA may be necessary to demonstrate that the project's TAC emissions will have a less than significant health risk.

To assess the potential health risk from the proposed Project, a prioritization score was calculated at the nearest residential receptor; the results are shown in Table ES-2. The nearest residential receptor is a farmhouse located approximately 0.5 miles west of the project site. Since the prioritization score is intermediate, the population density in the vicinity of the project is low, and the nearest sensitive receptor is 0.5 miles away, the Project's health risk impacts will be less than significant.

Table ES-2: Summary of Prioritization Scores

Project Phase	Acute	Chronic	Cancer	Prioritization Score
Construction	—	0.0048	3.23	Intermediate
Operations	0.76	0.062	2.97	Intermediate

Odor Impact Assessment

The proposed Project will divert organics from the landfill to the compost area and bioenergy facility. The compost area will employ a biofilter and will be required to implement an Odor Impact Minimization Plan (OIMP). The nearest sensitive receptor is over 0.5 miles away. Odor impacts were determined to be less than significant.

GHG Emissions Impact Analyses

An impact analysis due to GHG[2] emissions from the proposed Project was also prepared.

Construction Emissions

CalEEMod was also used for estimating potential GHG emissions associated with construction of the proposed Project. CalEEMod quantifies direct GHG emissions from construction, including vehicle use, as well as indirect GHG emissions, such as emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. As shown in Table ES-3, construction GHG emissions are typically amortized over the assumed 30-year life of the Project.

Operations Emissions

The proposed Project is fundamentally a landfill diversion project: the compost facility and bioenergy facility will take organic wastes destined for landfill and divert those materials to composting and energy production. These waste management alternatives are identified specifically in the AB 32 Scoping Plan to reduce methane emissions from landfills, as methane is a powerful climate pollutant. Thus, the proposed Project is consistent with, and helps to achieve, the goals of the State's climate action plans. GHG emissions from the proposed Project are summarized in Table ES-3. As shown, the proposed Project yields a net reduction in GHG emissions of more than 10,700 metric tons (MT) of carbon dioxide equivalents (CO_2e) per year.

Table ES-3: Proposed Project GHG Emissions and Net Emission Change

Activity	CO_2 (MT/yr)	CH_4 (MT/yr)	N_2O (MT/yr)	CO_2e (MT/yr)
Construction (amortized over 30 years)	27	0	0	27
Mobile Sources	2583	47	9	2651
Compost Facility	–	–	–	(17,378)
Bioenergy Facility	–	–	–	
Subtotal New Sources	*2583*	*46*	*9*	*(14,700)*
Baseline – Landfill	–	–	–	(3,977)
Total	–	–	–	**(10,723)**

[2] GHGs include, but are not limited to, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O).

Conclusions

Each of the CEQA Guidelines Appendix G checklist questions applicable to air quality and GHG emissions were reviewed to determine the significance of the impacts and any mitigation requirements. The findings are summarized below:

- The proposed Project would not conflict with or obstruct implementation of the applicable air quality plan. Vehicle use and emissions related to waste management have been accounted for in the planning emissions inventories and forecasts. Compliance with the SJVAPCD's NSR program and other applicable regulations will ensure that the Project is consistent with these plans.
- Criteria pollutant emissions would not exceed CEQA significance thresholds after the application of NSR-required ERCs and VERA mitigation for VOC emissions.
- An AAQA was performed to demonstrate that the proposed Project would not cause or contribute to an exceedance of a CAAQS or NAAQS. Concentrations modeled for the attainment criteria pollutants, i.e., those where the "background" air quality is measured to be below the standards in ambient air, were shown to not cause a violation of the applicable standards. However, because the background concentration of PM_{10} and $PM_{2.5}$ exceeds the NAAQS and CAAQS, PM_{10} and $PM_{2.5}$ modeled results were compared to SJVAPCD SILs. The modeled concentrations of PM_{10} and $PM_{2.5}$ are less than the SILs. Therefore, the Project will have a less than significant impacts relative to the NAAQS and CAAQS.
- Impacts from TAC emissions were found to have an intermediate risk prioritization score at the nearest residential receptor. Because there are no residential receptors within 0.5 miles of the project location and the population density is low in the vicinity of the project site, an intermediate prioritization score indicates that the Project has less than significant health risk impacts.
- The proposed Project was evaluated for the potential to cause adverse impacts due to odors. In this case, sensitive receptors are located 0.5 miles away, and a dairy is located between the residence and the proposed compost facility. With the implementation of an OIMP, odor impacts are expected to be less than significant.
- The proposed compost and bioenergy facilities will support California's goals related to waste diversion that will reduce GHG emissions by composting and energy generation rather than landfilling. Reducing GHG emissions would have a beneficial impact on the environment and would be consistent with applicable plans.

Given the analysis summarized above and detailed in this report, with the implementation of the Project features, air quality impacts from the proposed Project would be less than significant. However, due to the severity of the ozone and particulate matter nonattainment status of the San Joaquin Valley, the proposed Project may still have a significant cumulative impact. Therefore, mitigation in the form of a VERA will be considered to further reduce emissions of nonattainment pollutants and/or precursors, consistent with SJVAPCD guidelines.

GHG emissions would be reduced with the implementation of the Project and hence, the Project would have a beneficial impact.

1.0 INTRODUCTION

1.1 Project Overview

Tulare County Solid Waste Department intends to develop a compost facility featuring CASP technology to comply with SB 1383 regulations. The County intends to enter into a public/private partnership to operate the facility. The compost facility will be located on the County's Visalia Landfill property that encompasses approximately 634 acres, of which the compost facility will occupy 36 acres. The compost facility will be designed to accept up to 200,000 TPY of organic material that would have otherwise been landfilled. The compost facility would include installation and operation of processing and composting equipment, a 50,000 square foot processing building, paved compost pads, and a lined stormwater/contact water retention pond.

Tulare County Solid Waste Department is also proposing to develop a 2.0-MW bioenergy facility at the Visalia Landfill. The County intends to enter into a public/private partnership to operate this facility as well. The facility will produce electricity, heat, and biochar using waste wood as the feedstock. The facility will utilize 18,000 BDT of wood chips per year or 25,000 TPY of wet recovered wood waste to produce 2.0 MW (net) of electrical energy. In addition, this facility will produce approximately 20 to 30 MMBtu of waste heat and approximately 300 to 600 pounds of biochar per hour. Facility equipment will include grinding equipment, a non-fired wood dryer, a gasifier, two syngas-fueled engine generators, a cooling tower, and a limited-use flare.

The following are the objectives of the proposed project:

- Provide composting capacity for a organics diversion program in California as required by California legislation;
- Facilitate AB 341 implementation, which directs CalRecycle to increase statewide diversion from landfills to 75% by 2020;
- Divert wood waste from landfill disposal to meet the mandates of SB 1383 to reduce 75% of all organic materials from landfill disposal by 2025;
- Enhance the business community's ability to comply with AB 1826, which, as of April 1, 2016, requires businesses that generate a specific amount of organic waste per week to arrange for recycling services for that organic waste in a specified manner (such as composting) to substantially reduce landfill disposal of food wastes;
- Reduce methane emissions from landfills by removing organics from landfills and by composting new feedstocks;
- Reduce GHGs by sequestering nutrient-rich compost in soils;
- Modify an existing, strategically integrated waste management facility, the Visalia Landfill, to accommodate the growing regulatory demand for mixed materials, organic waste, and food waste composting;
- Receive and compost food wastes derived from commercial and residential sources;
- Continue to provide economic benefits to Tulare County through employment of local residents by the expansion of operational solid waste management activities and construction of new processing equipment; and
- Create water saving opportunities by using compost to enhance agricultural soil.

1.2 Project Location and Surrounding Land Uses

The proposed Project will be constructed and operated on a portion of the Visalia Landfill property, located at the northeast corner of Road 80 and Avenue 328, approximately 6 miles northwest of the City of Visalia. The area has a General Plan Designation of Agriculture. The landfill property, contiguous parcels, and surrounding area are designated by the Tulare County Zoning Ordinance No. 352 as AE-40, Exclusive Agriculture Zoned.

The legal description of the facility is: Eastern ½ of Section 5 and western ½ of Section 4, T18S, R24E, Mount Diablo Baseline and Meridian; Assessor's Parcel Numbers 077-020-11, 077-020-12, 077-020-18, 077-020-2 l, 077-020-24, and 077-020-26.

Land uses surrounding the site are characterized as intensive agricultural operations. There are tree crops to the north of the landfill property and row crops immediately east and south. A dairy is located to the west. The facility is located within the jurisdiction of the SJVAPCD. The regional location of the facility is shown in Figure 1-1. An aerial photograph of the landfill and surrounding properties is provided as Figure 1-2. A plot plan showing the site layout, including the existing landfill operations, proposed compost facility, and proposed bioenergy facility is provided as Figure 1-3.

1.3 Current Operations

The Visalia Landfill is operated by the Tulare County Resource Management Agency (RMA). Landfill operations are conducted on 129 acres of the approximately 634-acre property. The facility has a design capacity of 18,630,666 tons, a disposal limit of 2,000 tons per day (TPD), and a permitted traffic volume of 900 trucks per day. There is a 36-acre soil borrow pit on the site, which is the area proposed for the compost facility. The landfill currently accepts construction and demolition debris, green waste, wood waste, and agricultural waste.

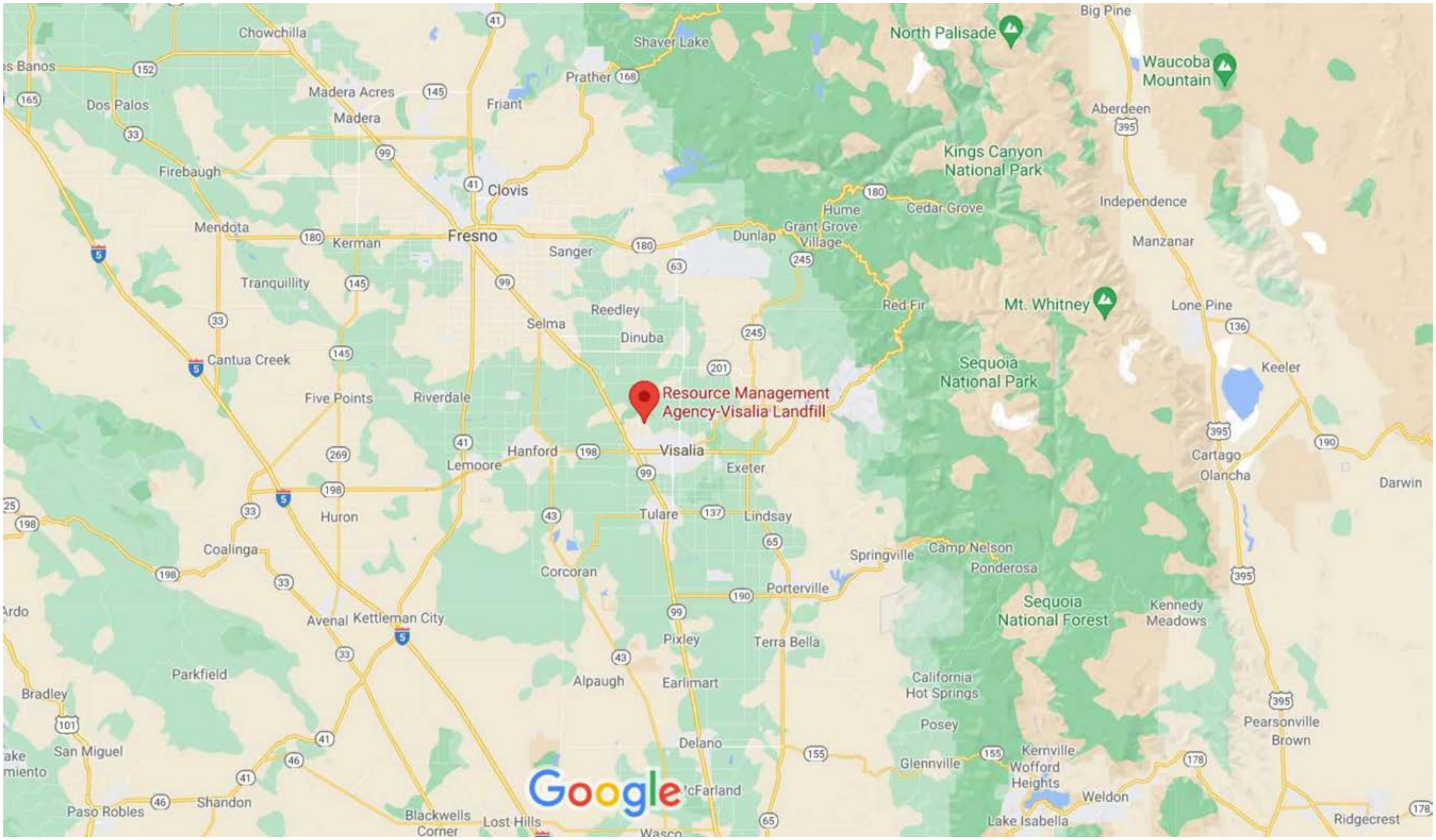


Figure 1-1: Regional Location of the Visalia Landfill

Figure 1-2: Aerial Photograph of the Visalia Landfill and Surrounding Properties

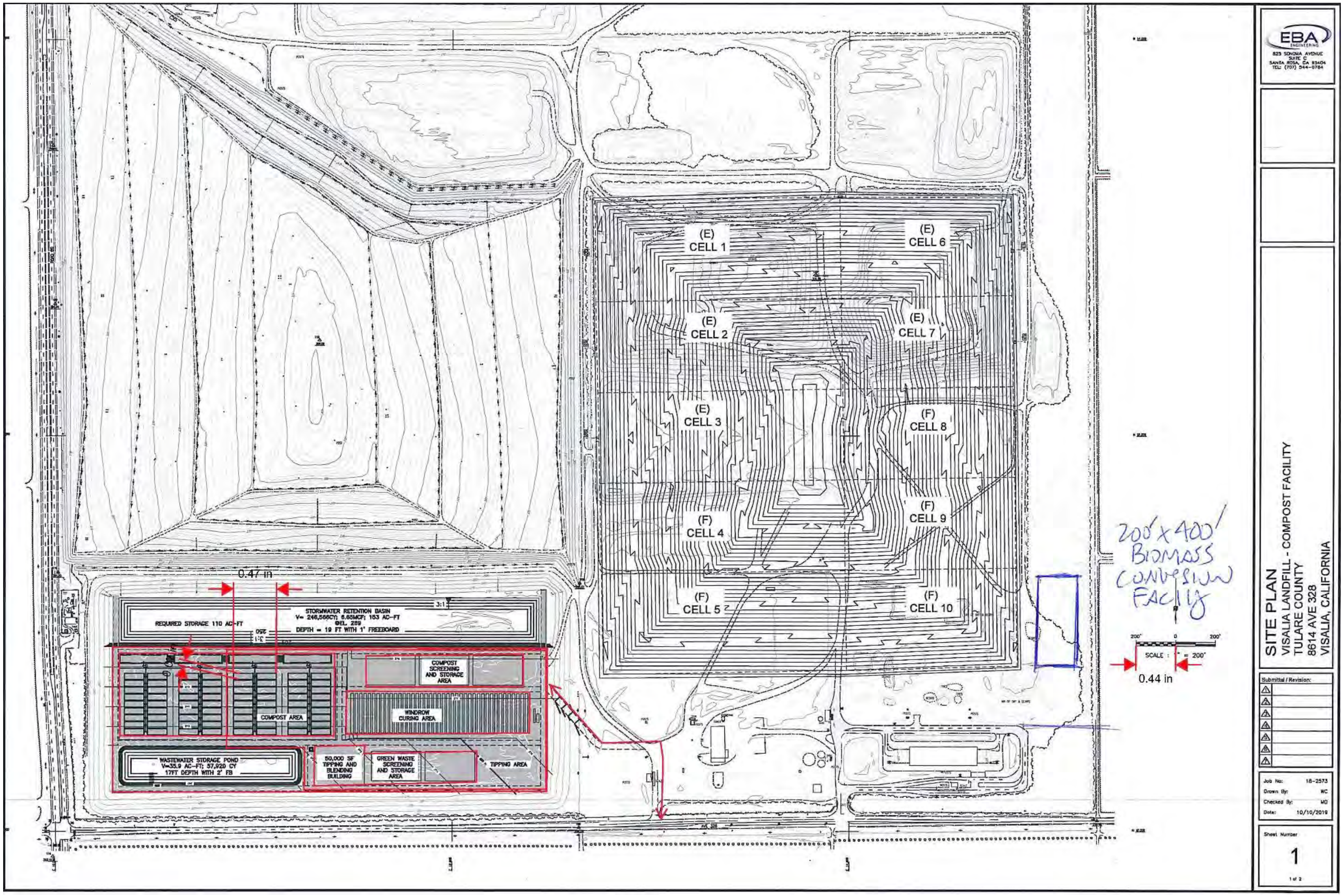


Figure 1-3: Plot Plan Visalia Landfill Facility with Compost and Bioenergy Facilities

1.4 Facility Permitting History

The Visalia Landfill currently operates under Solid Waste Facility Permit No. 54-AA-0009, issued by CalRecycle on July 29, 2014. The permit is due for renewal on July 29, 2024. The permit authorizes the disposal of up to 2,000 TPD.

The facility operates under three SJVAPCD facility identification numbers with five active permits. The permits issued to the facility are listed in Table 1-1. While there are three facility identification numbers, this equipment is all part of the same stationary source: the landfill with gas collection and disposal. Separate facility numbers have been provided to facilitate payment of permit fees by different owners/operators of the landfill, gas collection system, and power generating system.

The facility has permits from other State agencies; these other permits are not relevant to air quality issues and are not discussed herein.

Table 1-1: Summary of Visalia Landfill Air Permits

Facility ID	Permit Number	Equipment Description	Status
S-2996	S-2996-4-3	Gas fired flare (permit is dormant)	Inactive
	S-2996-1-2	Landfill gas collection system	Active
	S-2996-3-1	54.0 MMBtu/hr capacity enclosed ground level landfill gas flare	Active
	S-2996-2-0	Temporary test flare	Inactive
S-3729	S-3729-1-5	Municipal Solid Waste (MSW) facilities landfill gas collection and control system	Active
S-2890	S-2890-1	Landfill gas-fired internal combustion (IC) engine powering electrical generator	Active
	S-2890-2	Landfill gas-fired IC engine powering electrical generator	Active

1.5 Proposed Project

1.5.1 Site Preparation/Construction

The proposed Project includes a composting facility featuring CASP technology to be constructed in three or four phases[3]. Phase 1 would include construction of the compost pad for a 100,000-TPY CASP module with a seasonal peak throughput of 500 TPD, construction of a 50,000-square-foot processing building, developing the rest of the site to receive and process materials and cure and store the finished compost, and installation of the lined pond. Phases 2 and 3 would each add another 50,000-TPY compost pad and CASP module, bringing the total compost facility capacity to 200,000 TPY.

The 36-acre proposed site for the compost facility would be a soil "borrow pit" and would be designed using CASP technology. The borrow pit is recessed approximately 20 feet below grade. The borrow pit is currently vacant and graded and would not need to be cleared and grubbed for the proposed compost facility. Construction at the site would last

[3] The compost facility will either be constructed in three phases, with Phase 1 at 100,000 TPY capacity and Phases 2 and 3 each at 50,000 TPY capacity each, or will be constructed in four phases, each Phase with 50,000 TPY capacity. For this analysis, we have assumed that Phase 1 will be 100,000 TPY, as that leads to the highest daily and annual construction emission estimates.

approximately 5 to 6 months for Phase 1, a 100,000-TPY CASP module, and would include installing processing and composting equipment, a 50,000-square-foot processing building, a 10-acre concrete compost pad, and a 35.9 acre-foot lined pond to collect stormwater and contact water.

The bioenergy facility would install two IC engines, a flare, a cooling tower, gasifier, and dryer in an operations building with dimensions of 200 feet by 400 feet by 28 feet high.

Temporary construction equipment would include a grader, tractor, loader, backhoe, and rubber-tired bulldozer. Existing access to the landfill would be utilized to access to the compost and bioenergy facilities. Typical operations and site equipment are described in the following sections.

Site improvements would be required by the State Water Resources Control Board (SWRCB) as part of the approval process for this project. Site improvements will include constructing a new lined wastewater storage pond, as well as making additional on-site drainage improvements to continue to direct storm water and process water runoff into these detention pond(s).

1.5.2 Compost Facility

The proposed composting facility features CASP technology to be constructed in three or four phases. Upon final buildout, the average and seasonal peak throughput would be 650 TPD and 850 TPD, respectively. Integral to the CASP operations is feedstock receiving and pre-processing, active composting with aeration, windrow curing, and screening and storing finished compost prior to sale. Each of these operations is described below.

1.5.2.1 Organic Waste and Material Types

The proposed Project would authorize the composting facility to accept organic waste and “mixed materials” classified consistent with AB 1826 and SB 1383. The additional types of mixed materials and organic wastes would include various types of food material (including post-consumer food waste, food-soiled paper, compostable plastics), and digestate consistent with current regulations. The proposed Project would be authorized to receive and handle any “compostable material” or “digestate” as defined under current regulations. Based on this, the Conditional Use Permit (CUP) would list acceptable materials that could be received at the composting facility which include:

- “Mixed Materials” pursuant to California Code of Regulations (CCR) Title 14;
- “Food Material” pursuant to 14 CCR; and
- “Organic Wastes” pursuant to SB 1383 regulations.

The landfill currently accepts construction and demolition debris, green waste, wood waste, and agricultural waste for diversion operations, as well as municipal solid waste (MSW) for landfill disposal. The landfill currently receives the organic waste with the MSW stream, which instead would be diverted from the landfill to the proposed compost facility.

Composting is the biological decomposition of organic material under aerobic conditions (i.e., in the presence of oxygen). Composting is a self-limiting biological process. Conditions that limit the microbial population include nutrient availability, temperature, aeration, moisture, and pH. The composting process requires that microorganisms be supplied with the primary nutrients, including carbon and nitrogen. Carbon to nitrogen (C:N) ratios ranging from 20:1 to 30:1 are considered optimal for microbial activity. The more the C:N ratio deviates from this range, the slower the decomposition process becomes. With a ratio greater than 40:1, nitrogen represents a limiting factor and the reaction rate slows. With a C:N ratio lower than 15:1, excess nitrogen is driven off as ammonia. While this loss of nitrogen is not detrimental to the decomposition process, it does lower the nutrient value of the compost product.

CASP technology can be designed to receive a variety of composting feedstocks, including all types of compostable organic wastes, green wastes, food wastes, and clean wood wastes. Many compost facilities receive feedstocks that are predominately composed of tree prunings, leaves, and grass clippings, and contain a small percentage of food waste. Leaves generally have a high C:N ratio. Lawn clippings lack structure to maintain porosity for aeration but have a favorable C:N ratio and moisture content for composting, as does food waste. The feedstock "recipe" would vary over time as the participation in residential food waste collection programs and SB 1383 commercial organic wastes increases; however, the recipe would balance the C:N ratio within the optimal range to yield an excellent finished compost product.

Table 1-2 lists the feedstocks proposed for acceptance at the facility, along with definitions that are consistent with State regulations administered by CalRecycle and the SWRCB, as defined in 14 CCR and SB 1383.

Table 1-2: Feedstock Definitions for Feedstocks to be Accepted under the Project

Feedstocks	Description
Agricultural Materials	Waste material of plant or animal origin, which results directly from the conduct ofagriculture, animal husbandry, horticulture, aquaculture, silviculture, vermiculture, viticulture and similar activities undertaken for the production of food or fiber for human or animal consumption or use, which is separated at the point of generation,and which contains no other solid waste. With the exception of grape pomace or material generated during nut or grain hulling, shelling, and processing, agricultural material has not been processed except at its point of generation and has not been processed in a way that alters its essential character as a waste resulting from the production of food or fiber for human or animal consumption or use. Material that is defined in this Section 17852 as "food material" or "vegetative food material" is not agricultural material. Agricultural material includes, but is not limited to, manures, orchard and vineyard prunings, grape pumice, and crop residues. (14 CCR §17852)

Feedstocks	Description
Food Material	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. (14 CCR §17852)
Digestate	Organic by-product (solid or liquid) of anaerobic digestion process.
Green Material	Any plant material except food material and vegetative food material that is separated at the point of generation, contains no greater than 1.0% of physical contaminants by dry weight, and meets the requirements of section 17868.5. Green material includes, but is not limited to tree and 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. Agricultural material, as defined in this section 17852(a) (5), that meets this definition of "green material" may be handled as either agricultural material or green material. (14 CCR §17852)
Mixed Material	Any compostable material that is part of the municipal solid waste stream, and is mixed with or contains non-organics, processed industrial materials, mixed demolition or mixed construction debris, or plastics. A feedstock that is not source separated or contains 1.0% or more of physical contaminants by dry weight is mixed material (14 CCR § 17852).
Organic Wastes	Solid wastes containing material originated from living organisms and their metabolic waste products, including but not limited to food waste, green waste material, landscape and pruning waste, applicable organic textiles and carpets, wood, lumber, fiber, paper products, printing and writing paper, manure, biosolids, digestate, and sludges. (SB 1383).
Pre-processed feedstock-ready CASP materials	Some organic material may be delivered pre-processed and feedstock-ready from local material recovery facilities and may be deposited directly into the CASP unit without further processing.

Under the proposed project, the composting facility would obtain a Solid Waste Facility Permit where the following types of wastes would be prohibited:

- Hazardous, radioactive, designated, and medical wastes;
- Dead animals, septage, ash;
- Painted or treated wood;
- Mixed (municipal) solid waste;

- Mixed construction and demolition materials;
- Burning material;
- Manure from known infected herds or sources as monitored and reported by the California Department of Food and Agriculture; and
- Biosolids or any type of sewage sludge.

1.5.2.2 Hours of Operations

The hours of operations for receiving waste material will harmonize with the landfill as follows:

Monday – Friday	7:00 am to 4:00 pm
Saturday	8:00 am to 4:00 pm
Sunday	Closed

The hours of operations of processing material (in the CASP) will be 24 hours per day, 7 days per week. The feedstock received in the processing building may be processed 24 hours per day to accommodate surge piles and process within a 48-hour holding time period from the time of receipt. The CASP piles will be provided with oxygen via blowers that are controlled electronically on a timer or controller throughout the 24-hour day. Sprinklers on timers would provide moisture control for the biofilter layer.

1.5.2.3 Equipment

Table 1-3 provides a summary of the equipment proposed for use in the compost facility. The processes in which the equipment is used are described in the sections following the table.

Table 1-3: Equipment Proposed for Compost Facility

Equipment	Process Used In	Power Source
Fuel Truck	Refueling Equipment (Off-road and On-Road Equipment)	Diesel
2 Tractors	Material Transfer (Off-road Equipment)	Diesel
Excavator	Material Transfer (Off-road Equipment)	Diesel
6 Loaders	Material Transfer (Off-road Equipment)	Diesel
Office Vehicle	Composting Process (Off-road Equipment)	Diesel
Sweeper Truck	Composting Process (Off-road Equipment)	Diesel
2 Water Trucks	Composting Process (Off-road Equipment)	Diesel
Shop Truck	Composting Process (Off-road Equipment)	Diesel
2 Grinders	Feedstock Products (Mulching)	Electric
2 Conveyors	Feedstock Products (Mulching)	Electric
Pre-Processing Line Shredders/Grinders	Compost Processing (Feedstock Pre-processing line)	Electric
Pre-Processing Line Conveyors	Compost Processing (Feedstock Pre-processing line)	Electric

Equipment	Process Used In	Power Source
Food Waste Processing Equipment	Depackage and remove contaminates to produce slurry feedstock	Electric
2 Processing Trommel	Compost Processing (Finished Processing	Electric
1 Film Plastic Separator	Compost Processing (Finished Processing line)	Electric
Processing Line Sizing Screen	Compost Processing (Finished Processing line)	Electric
Processing Line Conveyors	Compost Processing (Finished Processing line)	Electric
Shop Truck	Composting Process (Off-road Equipment)	Diesel
2 Processing Trommel	Compost Processing (Finished Processing line)	Electric
1 Film Plastic Separator	Compost Processing (Finished Processing line)	Electric
Processing Line Sizing Screen	Compost Processing (Finished Processing	Electric
Processing Line Sizing Screen	Compost Processing (Finished Processing	Electric

1.5.2.4 Materials and Receiving

The facility will be designed to process organic waste that would be considered "new" tons to comply with SB 1383, as well as current tons that may be recycled on-site or at other facilities in the County. The organic waste would be delivered to the proposed compost facility by collection vehicles, transfer trailers, and self-haul vehicles. Wood waste would be stored outdoors for up to 30 days in a designated area. Green waste would be stored outdoors for up to 48 hours in a designated area. Co-collected residential organic wastes would be stored outdoors for up to 48 hours. Commercial organic waste would be delivered into the proposed processing building for blending.

1.5.2.5 Pre-Processing Operations

In preparation for the active composting phase, feedstock materials are typically pre-processed by grinding either on-site or off-site. Grinding of the feedstock reduces the volume of material, increases the surface area to promote biological decomposition, and provides a relatively uniform mixture of material and particle size. Feedstock may consist of many organic materials, including green waste, clean dimensional lumber, agricultural materials (such as grape pomace), and food wastes. The amounts of these materials which make up the feedstock "recipe" are critical for both the C:N ratio and bulk density. Green waste materials with small percentages of food waste introduced to the mixture are ideal for the CASP technology. High percentages of food waste or other similar high-density feedstocks in the total recipe may lead to a feedstock that is too dense and does not allow for proper airflow through the CASP. Bulking materials, such as compost overs or wood waste, can be blended to improve the bulk density as required; however, these materials also reduce the amount of capacity available for new inbound feedstocks. A typical recipe for CASP compost systems can vary from 10% to 25% food material to green and wood materials.

Feedstock delivered to the facility will be processed one of four ways, depending on the feedstock:

- Most green waste and residential co-collected green waste and food waste (up to 10% food waste in the green waste) will be unloaded directly into the CASP bunkers, with no pre-processing required.
- Wood waste will be unloaded into an outdoor storage area and may be stored for up to 30 days. Wood waste is used as the plenum layer when building the compost piles and is added to some feedstocks to improve porosity, so the facility will keep a supply of wood waste available in storage for these purposes. Wood waste may be processed through a grinder to ensure consistent particle size.
- A portion of the green waste and co-collected residential green waste/food waste may require grinding prior to composting. Grinding reduces the volume of the material, increases the surface area of the material to promote biological decomposition, and helps to provide a uniform mixture of material and particle size. Material requiring grinding may be stored outdoors for up to 48 hours in a designated area. The total capacity of the outdoor organic material processing area will be 10,000 cubic yards.
- Commercial food waste will be offloaded inside the processing building and pre-processed using an extruder-type food processing technology. Commercial organic waste typically contains approximately 30% by weight non-compostable contamination, even when best management practices are followed at the source. Materials and organic waste would be loaded from the receiving stockpile with a front-end loader into an infeed bin to be mechanically separated from the residual waste. The resulting food waste, targeting less than 1% contamination by weight, would be blended with green waste either within the building or within the CASP unit. This material would be mixed with green waste and/or bulking agent into a compost feedstock with blends of 10% to 25% food material to green material.

Through education and awareness, the County would work with the cities and their haulers to minimize contamination placed in the organic waste carts and bins. Organic waste would be load-checked for non-compatible wastes and contamination, which would be removed by manual floor sort for outdoor operations or mechanical processing equipment within the processing building.

The equipment supporting the pre-processing operation is listed in Table 1-3 and would be used to support the following activities:

1. Pre-processing to support receipt of green materials;
2. Pre-processing to support receipt of food material, mixed material, and organic waste;
3. Post-processing to size and classify compost; and
4. On-site conveyance connecting process areas to transport material.

The equipment would be used for material handling, size reduction, and residual/contamination removal (such as film plastic) from the materials, wastes, and finished compost. Non-compostable residual material would be sorted and containerized on-site and transported for disposal at the landfill within 48 hours.

1.5.2.6 Grinding Pre-Processing Operations

The existing CUP for the landfill allows for receipt and storage of green waste and wood waste and the grinding process, which would be relocated from the current location near the landfill to the compost operations. The proposed Project will continue to grind wastes. Feedstock may be screened to further size-separate and may be blended with processed food waste in ratio of 10% to 25% food material to green and wood materials. Properly prepared feedstocks would then be placed in the CASP unit for composting.

The co-collection of green waste with food material from residential sources (co-collected residential organics) is an emerging trend in California to meet SB 1383 objectives. The amount of residential food material varies from 3% to 7%, with seasonal peaks up to 10%, by volume, based on seasonal factors and special holiday events. The co-collected residential organics would be delivered to the site by local collection vehicles or from transfer trailers, and would be received and processed outdoors in the tipping area. Residential organics would not be processed within the processing building, unless later specified as part of an enhanced odor mitigation plan.

The outdoor organic waste processing area would have a capacity to store up to 10,000 cubic yards of received green waste and co-collected waste in separate piles. The two stockpiles would be separated by 20-foot-wide fire lanes consistent with applicable fire code requirements. The co-collected residential organics and green waste may be stockpiled on a pad for a maximum period of 48 hours. Wood waste would be stored for up to 30 days. Chipping and grinding would generally occur on the day of receipt of co-collected residential organics and up to 48 hours for green waste. The processed co-collected organics material storage area would be paved or would be constructed with a compacted all-weather pad, and equipped with a gravity drain to the lined wastewater storage pond.

1.5.2.7 Food Waste Pre-Processing

The proposed Project would allow for receipt and pre-processing of commercial organic waste and food material/mixed material and will install pre-processing lines and equipment within the processing building to adequately grind and blend unprocessed material. Transfer trailers, collection trucks, or end dump vehicles would transport unprocessed commercial organic waste to the project site, where it would weigh in across certified scales. The truck would travel to a dedicated receiving and storage area within a designated bunker in the processing building, where the material would be offloaded. Vectors would be controlled by good housekeeping practices within the enclosed building.

Statistics on the comingled commercial materials indicate loads have an average of approximately 30% by weight non-compostable contamination rate, even when the best management practices are followed at the source. The Project proposes to utilize state-of-the-art extruder-type food processing technology to pre-process commercial organic waste. Materials and organic waste would be loaded from the bunker with a front-end loader into an infeed bin to be mechanically separated from the residual waste. The resulting food waste, targeting less than 1% contamination by weight, would be blended with green waste either within the building or within a CASP unit. This material would be mixed with green waste and/or bulking agent into a compost feedstock unit with blends of 10% to 25% food material to green material.

1.5.2.8 Covered Aerated Static Pile Technology

CASP technology is superior to traditional composting methods, such as windrows, because air is mechanically added to the piles, as needed, based on continuous temperature monitoring. A biofilter cover of cured compost is placed on the pile to control emissions. The SJVAPCD reports VOC emission reductions of 99% for CASP composting relative to windrow composting (SJVAPCD 2013). The proposed CASP composting process consists of a primary phase with positive aeration, and a curing phase that would be conducted in non-aerated windrows. The active composting area would feature a 10-acre paved pad. Once active composting is complete, the materials would then be moved to the curing area using a front-end loader.

Compared to a traditional windrow composting process, a CASP system reduces the footprint and retention time needed for composting, reduces movement of material once on-site, reduces the amount of off-road equipment needed for material movement, and reduces odor and VOC emissions. The system would be designed to satisfy the requirements of SJVAPCD Rule 4566, which regulates organic material composting operations.

The CASP composting system would use wet suppression/water sprays to help reduce fugitive dust during material receiving/mixing, active composting, windrow curing, and finished compost storage and loadout. Moisture addition helps to ensure that the biofilter cover is effectively controlling VOC and PM_{10} emissions.

The proposed Project has been described as a CASP with positive aeration and a biofilter layer, as that is the most common design. However, the final system design has not been selected. As an alternative, the CASP maybe constructed using negative aeration, with the exhaust air vented to a fixed bed biofilter. A CASP with negative aeration and a fixed bed biofilter would have comparable or lower emissions compared to the positively aerated CASP described herein. The aeration piping may consist of pipe-on-grade or may be imbedded within the concrete pad. These piping configurations offer comparable performance; the pipe on grade is less expensive to install, and the embedded piping requires fewer repairs and less maintenance.

<u>Aeration System</u>

The proposed CASP technology has been determined to be the Best Available Control Technology (BACT) by the SJVAPCD. The CASP system includes infrastructure to push airflow into the compost material (positive aeration) during the active compost phase. A biofilter cover will be used for VOC emissions control.

<u>Temperature Control</u>

The composting process produces heat as a result of bacteriological metabolism. Initially, the heat generated by mesophilic bacteria elevates the temperature to 50°C (122°F) or more. As the mesophilic bacteria population decreases due to the high temperature, thermophilic bacteria take over and elevate the temperature up to 60°C (140°F) or more.

Over time and under the proper environmental conditions (i.e., the presence of oxygen, water, and nutrients), the microorganisms are self-limiting, and the temperature stabilizes between 55°C (131°F) and 75°C (167°F). Temperatures would be monitored to ensure that the prescribed regulatory period of 72 consecutive hours at no less than 55°C (131°F) are met per the Process to Further Reduce Pathogens criteria.

Moisture Control

Establishing the proper moisture content for a composting pile is also important. Pile moisture content is established during initial pile construction. It is extremely difficult to adjust moisture content later in the process. The optimum moisture content is about 50%, with an acceptable range of 40 to 65%. If the pile is too dry, the microbes go dormant; if the pile is too wet, saturated conditions can cause the pile to become anaerobic due to lack of oxygen circulation.

pH

The optimum pH for composting is between 6.0 and 7.5 (near neutral). The initial pH is established during initial pile construction through feedstock blending. Like moisture content, pH is extremely difficult to adjust later in the process. However, the pH changes as decomposition progresses.

Composting

Following grinding, pre-processing, and blending, or receipt of feedstock-ready materials, the materials would be placed in static piles not exceeding 250 feet long by 100 feet wide and approximately 10 feet in height within the primary CASP unit. The piles would be constructed using a loader to stack the material. Underlying the piles are perforated pipes (up to 32 pipes and eight blowers per CASP unit or fan group), which may be embedded in the concrete below or placed on grade within each static pile, which provide positive aeration to the bottom of each pile from adjacent blowers. A plenum layer approximately 12 inches deep composed of wood chips is placed on the aeration piping, followed by the compost feedstock to a depth of approximately 9 feet. The piles are then covered with 6 to 12 inches of cured compost, which acts as a biofilter to reduce emissions and potential odors. The cured compost biofilter layer is moisture-conditioned, as needed, to maintain its effectiveness in controlling emissions and odors. Next, aeration is initiated which promotes biological activity, which heats the pile.

The CASP aeration process is highly automated and controlled. The composting piles will be instrumented with wireless automated temperature probes for ongoing temperature monitoring throughout the active composting process. Based on monitoring and operational protocol, the aeration system is activated to induce airflows through the CASP. The aeration timing and flow rates are varied as needed to optimize the composting process, control temperature, and minimize emissions and odors.

Composting piles remain on the primary CASP unit for 24 days, with some variation in composting time depending on feedstock composition, temperature, moisture, season of the year, and stability of the compost at the end of the active phase. Testing (Solvita, or equivalent) or duration in process will be used to verify the end of the compost cycle.

Curing

When the active composting phase is complete, the curing phase begins. The composting piles are dismantled using a front-end loader and moved to the curing area. Curing allows the compost material to mature and is essential in the development of a high-quality product. Curing piles are formed using front loaders into windrows that are approximately 20 feet wide, 250 feet long, and 15 feet high. Material placed in the curing area will typically cure for a minimum of 24 days but can cure for 3 months or more. The completion of the curing phase would be determined via testing. Moisture may also be added to the curing windrows as needed to maintain suitable curing conditions and control dust.

1.5.2.9 Screening

After the curing process, the composted materials are screened based on customer demand, typically to 3/8-inch and smaller, to remove oversized particles and contaminants (plastic, glass, etc.) and provide a final compost product specific for its end use.

An oversized finished compost (>3/8 inch typically) is also produced through the screening effort. This material is referred to as "overs" and generally consists of composted pieces of woody material. There are many uses for overs, such as composted mulch, biofilter media, erosion control, compost bulking agent, and soil amendment, but due to the low nitrogen content and size of this material, the value tends to be significantly less than the unders fraction. In addition, film plastic contaminants are a common problem in composting residential wastes, and film plastics tend to be concentrated into the overs fraction. Because of this contamination, some end uses may be limited with regard to overs. Depending on inbound feedstock contamination and concentration of plastics into the overs fraction, some portion of the overs may be used in the landfill as alternate daily cover (ADC).

1.5.2.10 Project Features

The following project features will be incorporated into the project design to ensure that emissions are minimized to the extent feasible:

- The compost facility will feature a CASP design and include a biofiltration layer comprised of cured compost to reduce emissions of VOCs, ammonia (NH_3), and GHGs;
- Dedicated project off-road equipment will employ Tier 4 engines where feasible/available;
- As required by SJVAPCD Regulation VIII, a Dust Control Plan will be developed for the compost facility;
- A site-specific OIMP will be prepared to include multiple design and operational measures to reduce odors, including an outdoor storage time limit of 48 hours for unprocessed co-collected materials; and
- A Valley Fever Dust Management Plan will be implemented for the compost facility.

1.5.3 Bioenergy Facility

1.5.3.1 Overview

The proposed project would convert woody biomass into a synthesis gas ("syngas") through the process of thermochemical conversion. Essentially, the process "bakes" the biomass in an oxygen-starved environment. By depriving the biomass of sufficient oxygen, the biomass does not convert to combustion products and pollutants, but rather converts to a syngas rich in hydrogen and CO. The solid residuals left after gasification are known as biochar, which is typically 6 to 9% of the weight of the initial biomass. The syngas is then captured, cleaned, and conditioned before being sent as fuel to the genset to produce electricity. Phoenix Energy is the proposed technology vendor; however, the final selection has not been made. The gensets that have been selected for this project are two new GE Jenbacher Model J-612 engines. A simplified Process Flow Diagram which shows the emissions points (EM-1 through EM-5) is provided as Figure 1-4.

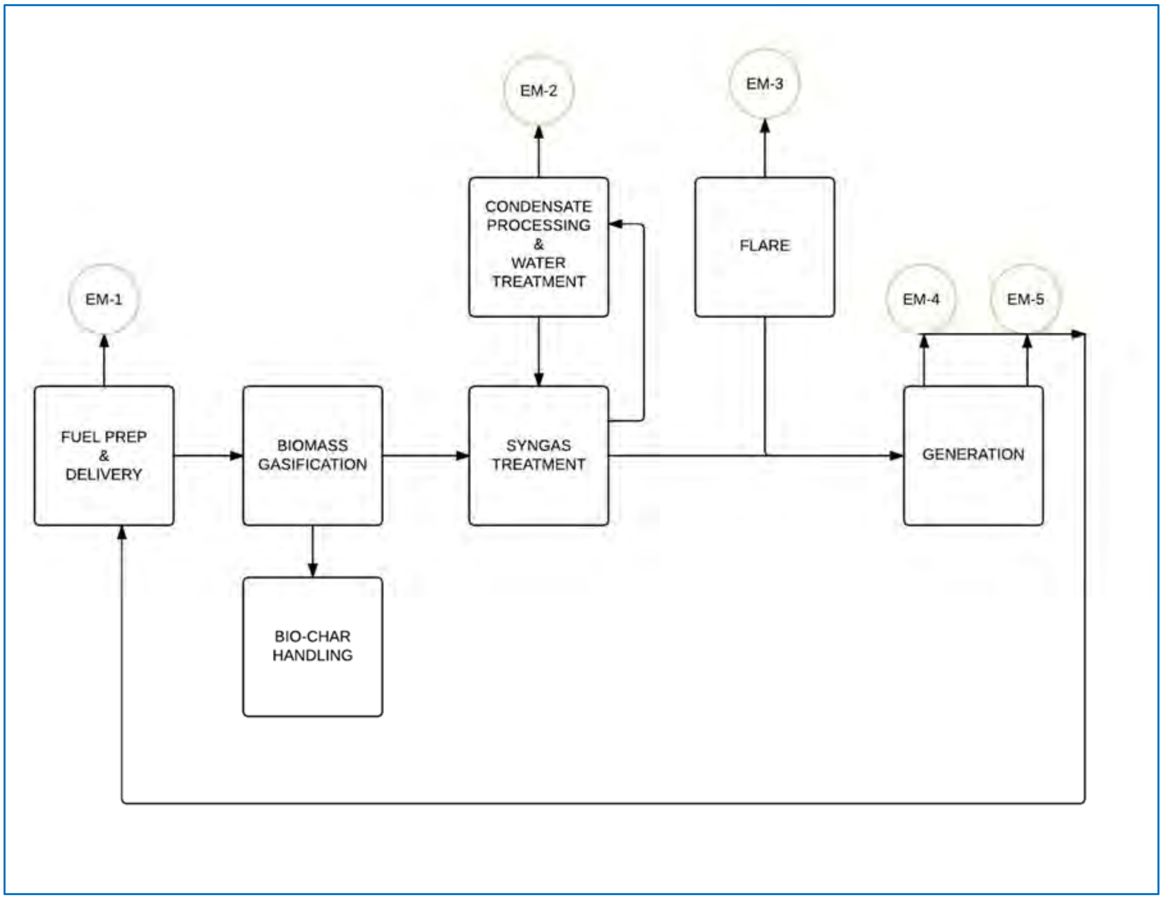


Figure 1-4: Tulare County Bioenergy Facility Process Flow Diagram

1.5.3.2 Feedstock Preparation and Delivery

Generally, the woody biomass feedstock would be diverted from landfill. Alternatively, woody biomass feedstock will be procured in accordance with the fuel eligibility criteria for the BioMAT tariff under SB 1122 for urban-sourced fuel or via contract with local suppliers.

Feedstock may contain up to 50% moisture. Depending on final equipment selection for the gasifier, this material will be dried to 10% moisture content, using a conveyorized or rotary drum dryer heated with waste heat from the engines. Particulate emissions from the dryer would be controlled by a cyclone.

1.5.3.3 Biomass Conversion (Gasification)

The biomass conversion occurs in a chemical reactor where various complex thermochemical processes take place. The biomass feedstock is dried, heated, converted into syngas, and reduced into biochar as it flows downward through the reactor.

Although there is a considerable overlap, each process step occurs within a separate zone in the gasifier. The biomass must pass through all of these zones to be completely converted.

For this Project, Phoenix Energy is proposing a downdraft gasifier. One essential characteristic of the downdraft design is that the tars given off in the heating zone are drawn through the conversion zone, where they are broken down or oxidized. When this happens, the energy contained in the tars is recovered as syngas. A schematic illustrating gasifier operation is provided as Figure 1-5.

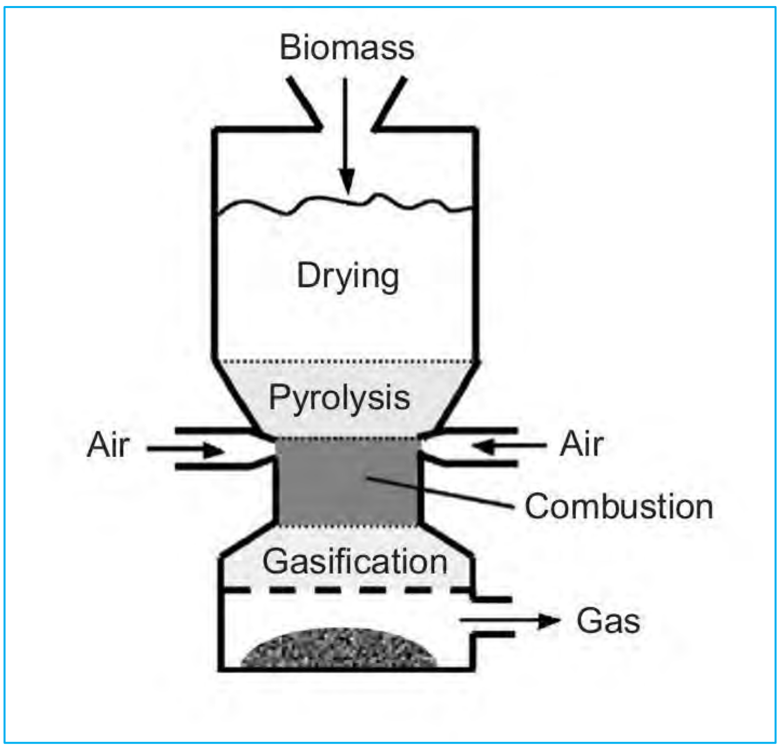


Figure 1-5: Gasifier Schematic

1.5.3.4 Syngas Treatment

After the syngas has been extracted from the conversion chamber, it flows through enclosed piping to a treatment process to remove impurities. The gas first passes through a cyclone to remove particulate matter, then through a series of scrubbers, which removes particulates and condensable gases. Then, the syngas is passed through a series of filters to be conditioned for fuel use in the Jenbacher gensets.

The clean syngas would be combusted either in the genset engines or in a flare, if the engines are offline due to malfunction or maintenance. Flare use would be limited to the time required to shut down the gasifier.

1.5.3.5 Power Generation

The syngas will be used to fuel two new 1,572 horsepower (hp) GE Jenbacher model J-612 engines that have been customized by the manufacturer for syngas fuel. The engines will be equipped with emissions control systems, including selective catalytic reduction (SCR) to control nitrogen oxide (NO_x) emissions and an oxidation catalyst to control VOC and CO emissions. Air emissions will meet SJVAPCD rule requirements and BACT. Phoenix Energy will provide standard paralleling switchgear for electrical output.

1.5.3.6 Flare

In case of engine shutdown or process upset, a flare will be utilized for syngas disposal until the gasifier can be safely shutdown. Phoenix Energy does not expect flare usage to exceed 250 hours per year at 100% capacity. The flare will meet SJVAPCD rule requirements and BACT.

1.5.3.7 Biochar handling

Biochar produced in the process is conveyed from the bottom of the gasifier in an enclosed, water-cooled auger to a hopper. Biochar is then packaged into 2-cubic-yard supersacks and sold as a soil amendment.

1.5.3.8 Condensate Processing and Water Treatment

Water that is entrained in the biomass fuel is vaporized with the production of syngas. This water is condensed out of the gas as it cools. It is very similar to the condensate found in natural gas or propane pipelines and will contain trace amounts of hydrocarbons. Phoenix Energy and its technology partners utilize a suite of separation technologies, including flocculation, settling, and other treatment which will remove the majority of particulates and hydrocarbons from the water loop. Cleaned water is used as make-up water to the cooling tower. This approach reduces fresh water demand at the facility. The condensate water used as make-up the cooling tower will have trace amounts of hydrocarbons and, as a result, the cooling tower will be a permitted emission point.

The cooling tower circulation rate will be between 860 and 1,320 gallons per minute. The VOC emission rates are expected to be 0.27 pounds per hour.

2.0 EXISTING AIR QUALITY SETTING

The Visalia Landfill is located in the southern region of the San Joaquin Valley near the community of Visalia in Tulare County, CA. The existing setting related to topography, meteorology, and climate; pollutant health effects and air quality background; and air quality regulatory framework are discussed in this section.

2.1 Existing Environment

The transport and dispersion of air pollutants within the valley are influenced by many complex factors. Global and regional weather patterns, local topography, and climate affect the way that pollutants are formed and dispersed.

2.1.1 Introduction

The San Joaquin Valley Air Basin (SJVAB) consists of eight counties: Fresno, Kern (western and central), Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare (see Figure 2-1). Cumulatively, these counties represent approximately 16% of California's geographic area, making the SJVAB the second largest air quality basin in California based on area. Air pollution in the SJVAB can be attributed to both human-related (anthropogenic) and natural (non-anthropogenic) activities that produce emissions. Air pollution from significant anthropogenic activities in the SJVAB includes a variety of industrial-based sources as well as on- and off-road mobile sources. Activities that tend to increase mobile activity include increases in population, increases in general traffic activity (including automobiles, trucks, aircraft, and rail), urban sprawl (which increases commuter driving distances), and general local land management practices as they pertain to modes of commuter transportation. These sources, coupled with geographical and meteorological conditions unique to the area, stimulate the formation of unhealthy air.

The San Joaquin Valley's topography and meteorology provide ideal conditions for trapping air pollution for long periods of time and producing harmful levels of air pollutants, including ozone and particulate matter. Low precipitation levels, cloudless days, high temperatures, and light winds during the summer in the San Joaquin Valley are conducive to high ozone levels resulting from the photochemical reaction of NO_x and VOC. Inversion layers in the atmosphere during the winter can trap emissions of directly emitted $PM_{2.5}$ (particulate matter that is 2.5 microns or less in diameter) and $PM_{2.5}$ precursors (such as NO_x and SO_2) within the valley for several days, accumulating to unhealthy levels.

The region also houses the State's major arteries for goods and people movement through the Central Valley, Interstate 5 and Highway 99, thereby attracting a large volume of vehicular traffic. Another compounding factor is the region's historically high rate of population growth compared to other regions of California. Increased population typically results in an even greater increase in vehicle activity and consumer product use, leading to increased emissions of air pollution, including NO_x. In fact, mobile sources account for about 80% of the valley's total NO_x emissions inventory. Since NO_x is a significant precursor for both ozone and $PM_{2.5}$, reducing NO_x from mobile sources is critical for progressing the valley toward attainment of ozone and $PM_{2.5}$ standards.

Figure 2-1: San Joaquin Valley Air Pollution Control District Boundaries

The geography of mountainous areas to the east, west, and south, in combination with long summers and relatively short winters, contributes to local climate episodes that prevent the dispersion of pollutants. Transport, as affected by wind flows and inversions, also plays a role in the creation of air pollution.

2.1.2 Topography

The climate of the San Joaquin Valley is modified by topography. This creates climatic conditions that are particularly conducive to air pollution formation. Figure 2-2 provides an aerial view of the San Joaquin Valley, illustrating its bowl shape. As shown, the San Joaquin Valley is surrounded by mountains on three sides and open to the Sacramento Valley and the San Francisco Bay Area to the north.

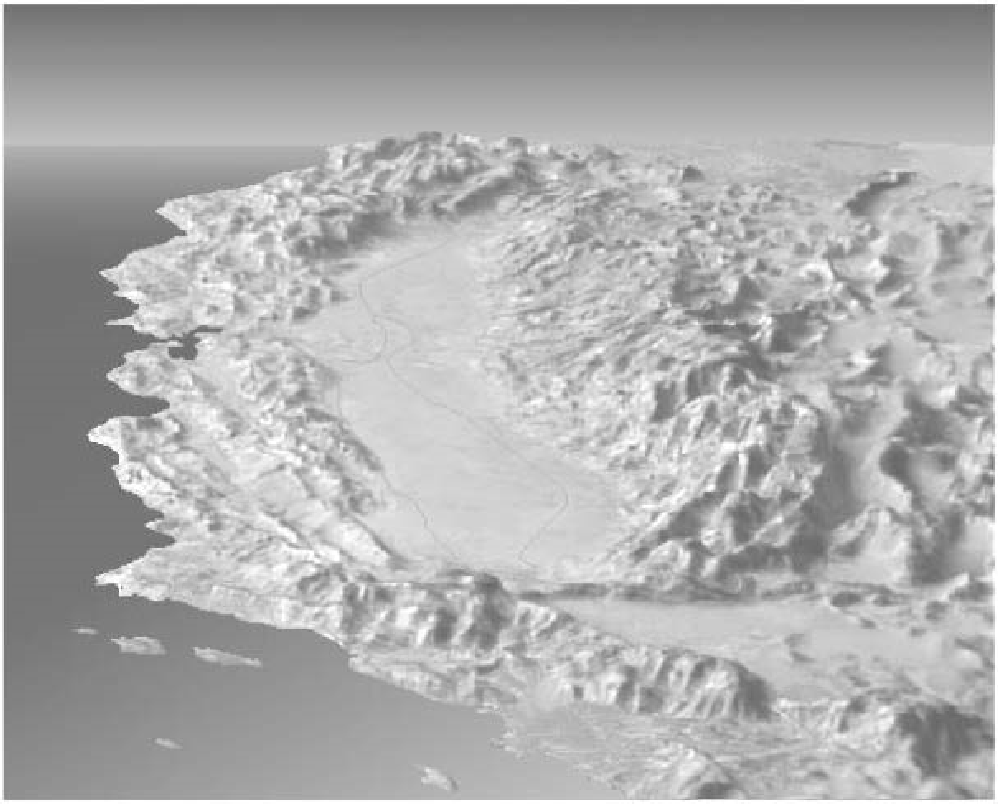


Figure 2-2: Aerial View of the San Joaquin Valley Air Basin

The SJVAB is the southern half of California's Central Valley and is approximately 250 miles long and averages 35 miles wide. The San Joaquin Valley is bordered by the Sierra Nevada Mountains to the east (8,000 to 14,491 feet in elevation), the Coast Ranges to the west (averaging 3,000 feet in elevation), and the Tehachapi mountains to the south (6,000 to 7,981 feet in elevation).

There is a slight downward elevation gradient from Bakersfield in the southeast end (elevation 408 feet) to sea level at the northwest end, where the valley opens to the San Francisco Bay at the Carquinez Straits. At its northern end is the Sacramento Valley, which comprises the northern half of California's Central Valley. The bowl-shaped topography inhibits movement of pollutants out of the valley.

2.1.3 Climate

The San Joaquin Valley is in a Mediterranean Climate Zone. Mediterranean Climate Zones occur on the west coast of continents at 30 to 40 degrees latitude and are influenced by a subtropical high-pressure cell most of the year. Mediterranean climates are characterized by sparse rainfall, which occurs mainly in winter. Summers are hot and dry. Summertime maximum temperatures often exceed 100°F.

The subtropical high-pressure cell is strongest during spring, summer, and fall and produces subsiding air, which can result in temperature inversions in the valley. A temperature inversion can act like a lid, inhibiting vertical mixing of the air mass at the surface. Pollutant emissions of can be trapped below the inversion. Most of the surrounding mountains are above the normal height of summer inversions (1,500-3,000 feet).

Wintertime high-pressure events can often last many weeks, with surface temperatures often dropping to between 30 and 40°F. During these events, fog can be present, and inversions are extremely strong. These wintertime inversions can inhibit vertical mixing of pollutants to a few hundred feet.

2.1.4 Wind Patterns

Wind speed and direction play an important role in dispersion and transport of air pollutants. Wind at the surface and aloft can disperse pollution by mixing and transporting the pollution to other locations.

Especially in summer, winds in the valley most frequently blow from the northwest. The region's topographic features restrict air movement and channel the air mass toward the southeastern end of the valley. Marine air can flow into the basin from the San Joaquin River Delta and over Altamont Pass and Pacheco Pass, where it can flow along the axis of the valley over the Tehachapi Pass into the Southeast Desert Air Basin. The Coastal Range is a barrier to air movement to the west, and the high Sierra Nevada range is a significant barrier to the east. Many days in the winter are marked by stagnation events where winds are very weak. Transport of pollutants during winter can be very limited. A secondary but significant summer wind pattern comes from the southeast and can be associated with nighttime drainage winds, prefrontal conditions, and summer monsoons.

Two significant diurnal wind cycles that occur frequently in the valley are the sea breeze and mountain-valley upslope and drainage flows. The sea breeze can accentuate the northwest wind flow, especially on summer afternoons. Nighttime drainage flows can accentuate the southeast movement of air down the valley. In the mountains during periods of weak synoptic scale winds, winds tend to be upslope during the day and downslope at night. Nighttime and drainage flows are especially pronounced during the winter when flow from the east is enhanced by nighttime cooling in the Sierra Nevada. Eddies can form in the valley wind flow and recirculate a polluted air mass for an extended period. Such an eddy occurs in the Fresno area during both winter and summer.

2.1.5 Temperature, Sunlight, and Ozone Production

Solar radiation and temperature are particularly important in the chemistry of ozone formation. The SJVAB averages over 260 sunny days per year. Photochemical air pollution (primarily ozone) is produced by the atmospheric reaction of organic substances (such as VOC) and NO_2 under the influence of sunlight.

Ozone concentrations are very dependent on the amount of solar radiation, especially during late spring, summer, and early fall. Ozone levels typically peak in the afternoon. After the sun goes down, the chemical reaction between nitrous oxide (N_2O) and ozone begins to dominate. This reaction tends to scavenge the ozone in the metropolitan areas through the early morning hours, resulting in the lowest ozone levels, possibly reaching zero at sunrise in areas with high NO_x emissions. At sunrise, NO_x tends to peak, partly due to low levels of ozone at this time and also due to the morning commuter vehicle emissions of nitrogen oxides.

Generally, the higher the temperature, the more ozone formed, since reaction rates increase with temperature. However, extremely hot temperatures can "lift" or "break" the inversion layer. Typically, if the inversion layer does not lift to allow the buildup of contaminants to be dispersed, the ozone levels will peak in the late afternoon. If the inversion layer breaks and the resultant afternoon winds occur, the ozone will peak in the early afternoon and decrease in the late afternoon as the contaminants are dispersed or transported out of the SJVAB.

Ozone levels are low during winter periods when there is much less sunlight to drive the photochemical reaction.

2.1.6 Temperature Inversions

The vertical dispersion of air pollutants in the San Joaquin Valley can be limited by persistent temperature inversions. Air temperature in the lowest layer of the atmosphere typically decreases with altitude. A reversal of this atmospheric state, where the air temperature increases with height, is termed an inversion. The height of the base of the inversion is known as the "mixing height." This is the level to which pollutants can mix vertically. Mixing of air is minimized above and below the inversion base, which represents an abrupt density change where little air movement occurs.

Inversion layers are significant in determining pollutant concentrations. Concentration levels can be related to the amount of mixing space below the inversion. Temperature inversions that occur on summer days are usually encountered 2,000 to 2,500 feet above the valley floor. In winter months, overnight inversions occur 500 to 1,500 feet above the valley floor.

2.1.7 Precipitation, Humidity, and Fog

Precipitation and fog may reduce or limit some pollutant concentrations. Ozone needs sunlight for its formation, and clouds and fog can block the required solar radiation.

Wet fogs can cleanse the air during winter as moisture collects on particles and deposits them on the ground. Atmospheric moisture can also increase pollution levels. In fogs with less water content, the moisture acts to form secondary ammonium nitrate particulate matter. This ammonium nitrate is part of the valley's $PM_{2.5}$ and PM_{10} problem.

The winds and unstable air conditions experienced during the passage of winter storms result in periods of low pollutant concentrations and excellent visibility. Between winter storms, high pressure and light winds allow cold, moist air to pool on the San Joaquin Valley floor. This creates strong low-level temperature inversions and very stable air conditions, which can lead to Tule fog. Wintertime conditions favorable to fog formation are also conditions favorable to high concentrations of $PM_{2.5}$ and PM_{10}.

2.2 Existing Air Quality

2.2.1 Characteristics of Common Air Pollutants

The Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (EPA) to set NAAQS for six common air pollutants. These commonly found air pollutants (also known as "criteria pollutants") are found all over the United States. They are particle pollution [often referred to as particulate matter (i.e., PM_{10} and $PM_{2.5}$)], ground-level ozone, CO, SO_2, NO_2, and lead. These pollutants can harm individual health and the environment and cause property damage. Of these six pollutants, particle pollution and ground-level ozone are the most widespread health threats. The EPA calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally based criteria (science-based guidelines) for setting permissible levels. The set of limits based on human health is called primary standards. Another set of limits intended to prevent environmental and property damage is called secondary standards.

The following section summarizes the pollutants of greatest importance in the San Joaquin Valley. For each air pollutant, a description of the physical properties, health and other effects, sources, and the extent of problems is provided. These pollutants are identified in District Rule 1020 (Definitions) and District Rule 2201 (New and Modified Stationary Source Review Rule) as "Affected Pollutants." In general, primary pollutants are directly emitted into the atmosphere, and secondary pollutants are formed by chemical reactions in the atmosphere. Air pollution in the valley results from emissions generated in the valley, as well as from emissions and secondary pollutants transported into the valley. It is thought that the bulk of the valley's summer and winter air pollution is caused by locally generated emissions. Due to the valley's meteorology, topography, and the chemical composition of the air pollutants, NO_x is the primary culprit in the formation of both ozone and $PM_{2.5}$. The valley has been in attainment with the lead standard for decades, so lead is not discussed further.

2.2.1.1 Criteria Pollutants

Ozone (O_3): a reactive gas consisting of three atoms of oxygen. In the troposphere, it is a product of the photochemical process involving the sun's energy. It is a secondary pollutant that is formed when NO_x and VOC react in the presence of sunlight. However, in the stratosphere, ozone exists naturally and shields Earth from harmful incoming ultraviolet radiation. Ozone at the earth's surface is a major component of smog and causes numerous adverse health effects.

High concentrations of ground-level ozone can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments. Ozone also damages natural ecosystems, such as forests, as well as foothill communities, agricultural crops, and some man-made materials, such as rubber, paint, and plastics.

Oxides of Nitrogen (NO_x): is a family of gaseous nitrogen compounds and is a precursor to the formation of ozone and particulate matter. The major component of NO_x, NO_2, is a reddish-brown gas that is toxic at high concentrations. NO_x results primarily from the combustion of fossil fuels under high temperature and pressure. Fuel combustion in on-road and off-road motor vehicles is the major source of this pollutant.

Volatile Organic Compounds (VOC): are hydrocarbon compounds that exist in the ambient air. VOCs contribute to the formation of smog and may themselves be toxic. VOC emissions are a major precursor to the formation of ozone. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints. VOCs are sometimes referred to as reactive organic gases (ROGs).

Total Organic Gases (TOG): includes all of the ROGs, in addition to low-reactivity organic compounds like methane and acetone. ROGs and VOC are subsets of TOG.

Particulate Matter (PM): also known as particle pollution, is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of the particles is directly linked to their potential for causing health problems. The EPA is concerned about particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. The EPA groups particle pollution into three categories based on particle size and where they are deposited:

- "Inhalable coarse particles ($PM_{2.5-10}$)," such as those found near roadways and dusty industries, are between 2.5 and 10 micrometers in diameter. $PM_{2.5-10}$ is deposited in the thoracic region of the lungs.
- "Fine particles ($PM_{2.5}$)," such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries, and automobiles react in the air. They penetrate deeply into the thoracic and alveolar regions of the lungs.
- "Ultra-fine particles (UFP)" are particles less than 0.1 micrometer in diameter largely resulting from the combustion of fossils fuels, meat, wood, and other hydrocarbons. While UFP mass is a small portion of $PM_{2.5}$, its high surface area, deep lung penetration, and transfer into the bloodstream can result in disproportionate health impacts relative to their mass.

PM_{10}, $PM_{2.5}$, and UFP include primary pollutants (emitted directly to the atmosphere) and secondary pollutants (formed in the atmosphere by chemical reactions among precursors). Generally speaking, $PM_{2.5}$ and UFP are emitted by combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM_{10} sources include these same sources plus roads and farming activities. Fugitive windblown dust and other area sources are also sources of airborne particulate matter in the valley.

Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, coughing, bronchitis, and respiratory illnesses in children.

Carbon Monoxide (CO): is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels and is emitted directly into the air.

Because of the local nature of CO impacts, the California Air Resources Board (CARB) and the EPA designate urban areas as CO nonattainment areas, instead of the entire basin as with ozone and PM_{10}. Motor vehicles are by far the largest source of CO emissions. With the introduction of new automotive emission controls and fleet turnover, emissions from motor vehicles have been declining since 1985, despite increases in vehicle miles traveled. Other CO sources in the valley include other mobile sources, miscellaneous processes, and fuel combustion in stationary sources (e.g. boilers, heaters).

Sulfur Dioxide (SO_2): is a colorless, irritating gas formed primarily by the combustion of sulfur-containing fossil fuels. The SJVAB is in attainment of both the federal and

California standards for SO_2. However, like airborne NO_x, suspended oxides of sulfur (SO_x) particles contribute to the poor visibility that sometimes occurs in the valley. These SO_x particles can also combine with other pollutants to form $PM_{2.5}$. The prevalence of low-sulfur fuel use in the valley has minimized impacts from this pollutant.

2.2.1.2 Toxic Air Contaminants and Other Pollutants

California has established air quality standards for some pollutants not addressed by federal standards. CARB established State standards for hydrogen sulfide, sulfates, vinyl chloride, and visibility-reducing particles. This section provides a description of these pollutants' physical properties, health and other effects, sources, and the extent of impacts.

<u>Hydrogen Sulfide (H_2S):</u> is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. Hydrogen sulfide is extremely hazardous in high concentrations, especially in enclosed spaces [800 parts per million (ppm) can cause death]. The Occupational Safety and Health Administration regulates workplace exposure to H_2S. H_2S has a characteristic rotten egg smell.

<u>Sulfates (SO_4^{2-}):</u> are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

The sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility and, due to the fact that they are usually acidic, can harm ecosystems, and damage materials and property. Data collected in the SJVAB demonstrate levels of sulfates significantly less than the health standards.

<u>Visibility-Reducing Particles:</u> are a mixture of suspended particulate matter consisting of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. The standard is intended to limit the frequency and severity of visibility impairment due to regional haze. Regional haze is characterized as a nominal visual range of less than 10 miles.

<u>Vinyl Chloride [C_2H_3Cl, also known as vinyl chloride monomer (VCM)]:</u> is a colorless gas that does not occur naturally. It is formed when other substances such as trichloroethane, trichloroethylene, and tetrachloroethylene break down in the atmosphere. Vinyl chloride is also an industrial chemical used to make polyvinyl chloride (PVC), which is used to make a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

<u>Diesel particulate matter (DPM):</u> is emitted from both mobile and stationary sources. In California, on-road diesel-fueled engines are estimated to contribute approximately 38% of the total DPM emissions, with an additional 60% attributed to other mobile sources such

as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources contribute about 1% of total DPM (CARB 2009b).

In its comprehensive assessment of diesel exhaust, the California Office of Environmental Health Hazard Assessment (OEHHA) analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and equipment operators. The studies showed these workers were more likely to develop lung cancer than workers who were not exposed to diesel emissions. These studies provide strong evidence that long-term occupational exposure to DPM increases the risk of lung cancer. Using information from OEHHA's assessment, CARB estimates that diesel particle levels measured in California's air in 2000 could cause 540 "excess" cancer cases (beyond what would occur if there were no DPM in the air) in a population of 1 million people over a 70-year lifetime (CARB 2009b). Other researchers and scientific organizations, including the National Institute for Occupational Safety and Health, have calculated cancer risks from DPM that are similar to those developed by OEHHA and CARB.

Exposure to DPM can have immediate health effects. DPM can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, DPM made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to DPM also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks. In California, DPM has been identified as a carcinogen.

2.2.1.3 Infectious Agents

<u>Valley Fever (Coccidioidomycosis):</u> is primarily a disease of the lungs caused by inhalation of spores of the *Coccidioides immitis* fungus. The spores are found in the soil, become airborne when the soil is disturbed, and are subsequently inhaled into the lungs. After the fungal spores have settled in the lungs, they change into a multicellular structure called a spherule. Fungal growth in the lungs occurs as the spherule grows and bursts, releasing endospores, which then develop into more spherules.

The ecologic factors conductive to survival and replication of the spores appear to be high summer temperatures, mild winters, sparse rainfall, and alkaline sandy soils.

Valley Fever symptoms generally occur within 1 to 4 weeks of exposure. Approximately 60% of Valley Fever cases are mild and display flu-like symptoms or no symptoms at all. Of those who are exposed and seek medical treatment, the most common symptoms are fatigue, cough, chest pain, fever, rash, headache, and joint aches. In some cases, painful red bumps may develop. These symptoms are not unique to Valley Fever and may be caused by other illnesses as well. Valley Fever is not contagious and therefore cannot be passed from person to person. Most of those who are infected will recover without treatment within 6 months and will have a lifelong immunity to the fungal spores (Valley Fever Center for Excellence 2019).

In 2017, there were 14,364 cases of Valley Fever reported to Centers for Disease Control and Prevention (CDC 2019). Most of these cases were in people who live in Arizona or California. On average, there were approximately 200 coccidioidomycosis-associated deaths each year. The number of Valley Fever cases reported to the CDC likely underestimates the true number of Valley Fever cases. Tens of thousands more illnesses likely occur and may be misdiagnosed because many patients are not tested for Valley Fever.

New residents to the San Joaquin Valley have usually never been exposed to Valley Fever and are particularly susceptible to infection. Longtime residents of the valley are less prone to infection.

2.2.2 Attainment Status and Designations

The NAAQS established by the EPA apply to all areas throughout the nation. In most cases, the NAAQS define the maximum acceptable concentrations that may be reached, but not exceeded more than once per year. The CAAQS are in some cases more stringent than the NAAQS and are not to be exceeded. These standards are designed to protect the public with a reasonable margin of safety. Areas that meet the ambient standards are designated as "attainment"; areas where the measured concentrations exceed the ambient standards are designated "nonattainment"; and areas where insufficient data exist to make a determination are "unclassified".

The SJVAB is currently designated as attainment for the NAAQS and the CAAQS for NO_2, CO, and SO_2. The air basin is designated as nonattainment for federal and State standards for ozone and $PM_{2.5}$. The air basin is designated as attainment for federal and nonattainment for the State standards for PM_{10}. The criteria pollutant concentrations have declined in recent years due to stringent control requirements promulgated by the SJVAPCD, CARB, and EPA. However, the NAAQS and/or CAAQS established for ozone, PM_{10}, and $PM_{2.5}$ are still exceeded in the SJVAB.

Attaining air quality standards in the San Joaquin Valley has proven to be challenging due to the unique topographical and meteorological conditions found in the region. The valley encompasses nearly 25,000 square miles and is surrounded by mountain ranges to the west, east, and south. The airflow through the valley can be constrained by these mountain ranges, leading to limited dispersion. During the winter, high-pressure systems can cause the atmosphere to become stagnant for longer periods of time, where wind flow is calm and air movement is minimal. These stagnant weather systems can also cause severe nighttime temperature inversions, which exacerbate the buildup of air contaminants.

Despite these challenges, significant progress has been made in attaining the NAAQS and improving public health for valley citizens. Due to the efforts made by San Joaquin Valley businesses and residents and stringent regulatory programs by the SJVAPCD and CARB, the valley's emissions are at historically low levels and air quality over the past few years has been better than any other time on record. Emissions from stationary sources have been reduced by 85%, cancer risk from exposure to TACs has been reduced by 95%, population exposure to elevated $PM_{2.5}$ levels has been reduced by 85%, and population exposure to elevated ozone levels has been reduced by 90% (SJVAPCD 2018).

The NAAQS and CAAQS are summarized in Table 2-1, along with the current air quality designations for the SJVAB.

Table 2-1: Ambient Air Quality Standards and SJVAB Attainment Status

Pollutant and Averaging Period		NAAQS	CAAQS	SJVAB Attainment Status	
				NAAQS	CAAQS
Ozone (O_3)	1-Hour	–	0.09 ppm	–	Nonattainment/ Severe
	8 Hour	0.070 ppm	0.070 ppm	Nonattainment/ Extreme	Nonattainment
NO_2	1-Hour	0.100 ppm	0.18 ppm	Attainment/ Unclassified	Attainment
	Annual	0.053 ppm	0.030 ppm	Attainment/ Unclassified	Attainment
CO	1-Hour	35 ppm	20 ppm	Attainment/ Unclassified	Attainment/ Unclassified
	8-Hour	9 ppm	9.0 ppm	Attainment/ Unclassified	Attainment/ Unclassified
PM_{10}	24-Hour	150 μg/m^3	50 μg/m^3	Attainment	Nonattainment
	Annual	–	20 μg/m^3	–	Nonattainment
$PM_{2.5}$	24-Hour	35 μg/m^3	–	Nonattainment	–
	Annual	12.0 μg/m^3	12 μg/m^3	Nonattainment	Nonattainment
SO_2	1-Hour	0.075 ppm	0.25 ppm	Attainment/ Unclassified	Attainment
	24-Hour	0.14 ppm	0.04 ppm	Attainment/ Unclassified	Attainment
	Annual	0.03 ppm	–	Attainment/ Unclassified	–
Lead	Month	–	1.5 μg/m^3	–	Attainment
	Quarter	1.5 μg/m^3	–	Attainment	–

ppm = parts per million; μg/m^3 = micrograms per cubic meter
Sources: CARB 2016, CARB 2018b, SJVAPCD 2019b.

2.2.3 Air Quality Monitoring Data

CARB and the SJVAPCD operate a regional monitoring network that measures the ambient concentrations of criteria pollutants and TACs. Locations of the State and local air monitoring stations (SLAMS) operated within the SJVAB are shown in Figure 2-3.

The monitoring sites in the network include instruments that measure ambient levels of gaseous and particulate air pollutants and, in some cases, meteorological parameters. The air quality trends at these monitoring stations are typically considered to be representative of the ambient air quality in the surrounding areas. Local air quality within a given area is affected by how pollutants are dispersed into the atmosphere, the types and quantities of emissions released, prevailing wind patterns, and atmospheric conditions.

Background air quality representative of the proposed Project area was determined from maximum concentrations recorded at nearby monitoring stations operated by CARB or the SJVAPCD. Monitored concentrations within the project area at the closest monitoring station to the Project for the most recent 3 years available are summarized in Table 2-2. The closest monitoring station for the pollutants shown in the table is the Visalia – Church Street station. Data are not available for CO or SO_2 in Visalia.

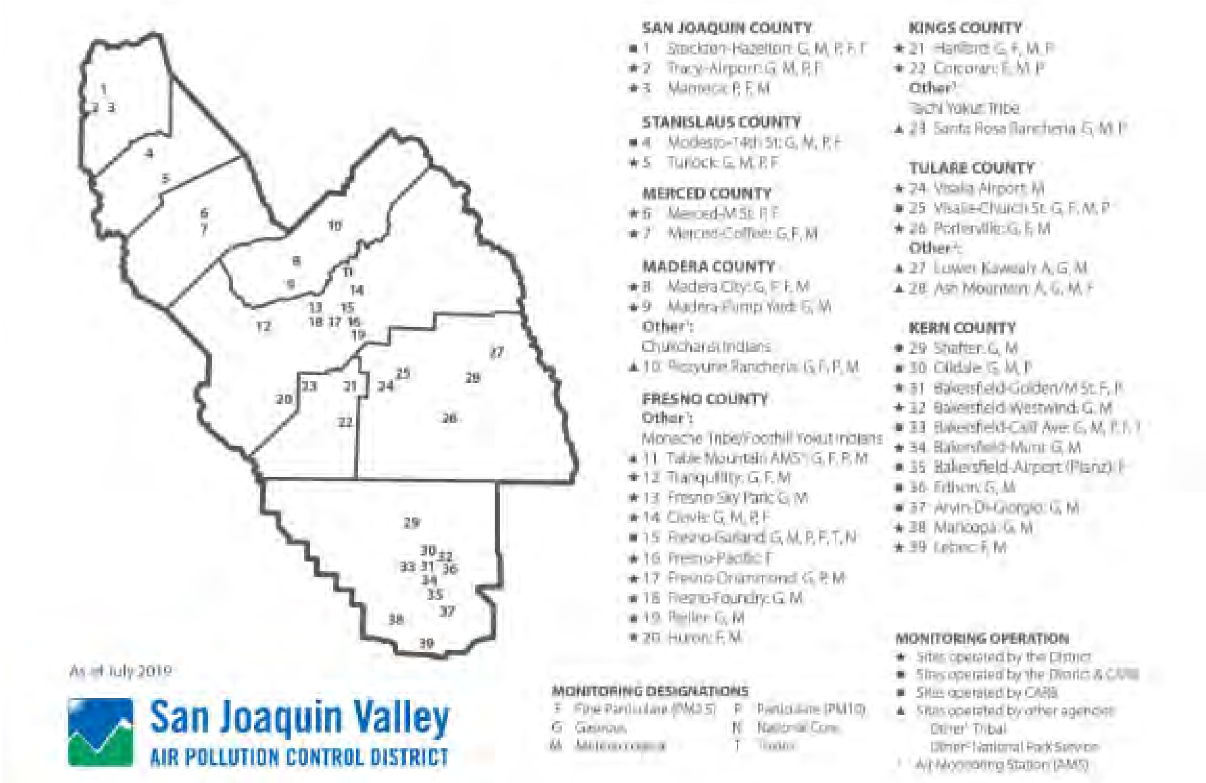


Figure 2-3: San Joaquin Valley Air Monitoring Sites

Table 2-2: Maximum Observed Criteria Pollutant Concentrations and Number of Days Over the Applicable Ambient Air Quality Standard

Pollutant and Averaging Period		2017		2018		2019	
		Max. Conc.*	Days Exceeded	Max. Conc.*	Days Exceeded	Max. Conc. *	Days Exceeded
O_3	State 1-Hour	0.109	9	0.112	8	0.093	0
	National 8-Hour	0.091	61	0.094	53	0.082	22
NO_2	State 1-Hour	58.1	0	69.2	0	70.7	0
	National 1-Hour	58	0	69	0	70	0
	Annual	10	–	10	–	9	–
PM_{10}	State 24-Hour	145.7	131	153.4	162	418.5	115
	State Annual	46.9	–	52.0	–	46.3	–
	National 24-Hour	144.8	0	159.6	0	411.1	5
$PM_{2.5}$	State 24-hour	89.0	–	96.2	–	47.2	–
	State Annual	16.8	–	17.4	–	12.3	–
	National 24-Hour	86.1	9	86.8	12	47.2	6
	National Annual	16.2	–	17.3	–	12.9	–

*O_3, NO_2, SO_2 maximum concentrations in parts per billion (ppb); CO in parts per million (ppm); and PM_{10} and $PM_{2.5}$ in micrograms per cubic meter (µg/m^3).

Source: CARB 2021

2.3 State and Federal Air Quality Plans, Rules, and Regulations

California contains a wide variety of climates, physical features, and emissions sources. This variety makes the task of improving air quality complex, because what works in one area may not be effective in another area. To better manage common air quality problems, California is divided into 15 air basins. An air basin generally has similar meteorological and geographical conditions throughout. To the extent possible, the air basin boundaries follow along political boundary lines.

Air quality is managed through federal (EPA), State (CARB), and regional air quality management districts (SJVAPCD). This section describes air quality regulations.

2.3.1 Federal Regulation

The EPA is responsible for implementing programs established under the Federal CAA, establishing NAAQS, and for judging the adequacy of State Implementation Plans (SIPs). The SIP is a State-level document that identifies all air pollution control programs within California that are designed to help the State meet the NAAQS. The EPA also has regulatory and enforcement jurisdiction over emissions sources beyond State waters (outer continental shelf) and those that are under the exclusive authority of the federal government, such as aircraft, locomotives, and interstate trucking. The EPA sets federal vehicle and stationary source emission standards as well as providing research and guidance for air pollution programs. The EPA may also delegate authority to implement some federal programs to the states while retaining oversight authority to ensure that the programs are properly implemented.

Title V of the Federal CAA, as amended in 1990, created an operating permits program for certain defined sources. One of the primary Title V applicability criteria is based on the facility's potential to emit, and the threshold varies by the attainment status of the local area. For example, owners/operators of industrial sources that emit more than 100 TPY of NO_x or VOCs must possess a Title V permit. If a source is located in a federal ozone nonattainment area classified as "Serious Nonattainment", this threshold is lowered to 50 TPY. For "Severe Nonattainment" areas, the threshold is lowered to 25 TPY, and for "Extreme Nonattainment" areas, the threshold is further lowered to 10 TPY. The lowering of the thresholds results in more businesses having to comply with Title V permitting requirements in areas with worse air quality. The EPA defined the basic requirements of the Title V program under the Code of Federal Regulations (CFR) Title 40 Part 70, and each air management agency, including the SJVAPCD, has adopted rules specific to their area to implement the Title V program. The SJVAPCD Title V program is regulated under Rule 2520, as discussed in Section 2.3.5. Title V is not meant to impose any new air pollution standards, require installation of any new controls on the affected facilities, or require emissions reductions. Title V does enhance public and EPA participation in the permitting process and requires additional recordkeeping and reporting by businesses, which may result in additional administrative requirements.

The EPA also establishes New Source Performance Standards (NSPS) and National Emissions Standards for Hazardous Air Pollutants (NESHAP) for a variety of stationary sources of emissions, codified in 40 CFR Parts 60, 61, and 63. Delegation for implementation and enforcement of most of these standards has been given to the SJVAPCD. These standards are discussed in Section 2.3.5.

2.3.2 California Regulation

CARB is responsible for establishing and reviewing the CAAQS, compiling the California SIP (composed of attainment plans from each air district classified as nonattainment of the NAAQS and/or CAAQS), and securing approval of that plan from the EPA. CARB acts as an oversight agency for activities conducted by air quality management districts, which are organized at the regional or county level. CARB is also responsible for the following types of activities:

- Mobile Sources and Portable Equipment: CARB is responsible for establishing tailpipe standards and regulating emissions from on-road and off-road mobile sources and portable equipment;
- Regulating TAC Emissions: Identifying TACs, developing airborne toxic control measures (ATCMs), and overseeing implementation of the regulations, including the Air Toxics "Hot Spots" Program (AB 2588), which requires air toxics emissions inventories, HRAs, and risk reduction programs; and
- Greenhouse Gases (AB 32): Implementing regulations designed to reduce emissions of GHGs, such as methane and carbon dioxide. AB32 requires that California implement regulations designed to reduce GHG emissions (See Section 5 for additional detail).

Applicable California regulations are discussed below.

- CCR Title 13, Chapter 9, Article 4.8, Section 2449: CARB has enacted a regulation for the reduction of DPM and criteria pollutant emissions from in-use off-road diesel-fueled vehicles. This regulation provides target emission rates for PM and NO_x emissions from owners of fleets of diesel-fueled off-road vehicles and applies to equipment fleets of three specific size categories. The target emission rates are reduced over time.

- California Health and Safety Code (H&SC) 41700 (Health Risk Assessment): These requirements are generally implemented through the local air pollution control districts. Pursuant to SJVAPCD Policy APR 1905 – Risk Management Policy for Permitting New and Modified Sources, for an increase in TAC emissions associated with a proposed new source or modification to an existing source, an analysis is needed to determine the potential health risk impacts to the nearest resident or worksite.

- California Diesel Fuel Regulations: With the California Diesel Fuel Regulations, CARB set sulfur limitations for diesel fuel sold in California for use in on-road and off-road motor vehicles. Under this rule, diesel fuel used in motor vehicles, except harbor craft and intrastate locomotives, is limited to 15 parts per million (ppm).

- CCR Title 14, Chapter 3.1, §17863.4; California Integrated Waste Management Board: All commercial composting facilities in California are required to "prepare, implement, and maintain" a site-specific OIMP.

  OIMPs must provide guidance to on-site operations personnel by describing the following items:

  - An odor monitoring and data collection protocol for on-site odor sources, which describes the proximity of possible odor receptors and a method for assessing odor impacts at the locations of the possible odor receptors;

  - A description of meteorological conditions affecting migration of odors and/or transport of odor-causing material off-site. Seasonal variations that affect wind velocity and direction shall also be described;

  - A complaint response and recordkeeping protocol;

  - A description of design considerations and/or projected ranges of optimal operation to be employed in minimizing odor, including method and degree of aeration, moisture content of materials, feedstock characteristics, airborne emissions production, process water distribution, pad and site drainage and permeability, equipment reliability, personnel training, weather event impacts, utility service interruptions, and site-specific concerns as applicable; and

  - A description of operating procedures for minimizing odor, including aeration, moisture management, feedstock quality, drainage controls, pad maintenance, wastewater pond controls, storage practices (e.g., storage time and pile geometry), contingency plans (i.e., equipment, water, power, and personnel), biofiltration, and tarping as applicable.

- In-Use Off-Road Diesel-Fueled Fleets Regulation: All self-propelled off-road diesel vehicles 25 hp or greater used in California and most two-engine vehicles (except on-road two-engine sweepers) are subject to the Regulation for In-Use Off-

Road Diesel-Fueled Fleets (Off-Road Regulation). This includes vehicles that are rented or leased.

The overall purpose of the Off-Road Regulation is to reduce emissions of NO_x and PM from off-road diesel vehicles operating within California. The Off-Road Regulation:

- Imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles;
- Requires vehicles to be reported to CARB [using the Diesel Off-Road Online Reporting System (DOORS)] and labeled;
- Restricts the adding of older vehicles into fleets starting on January 1, 2014; and
- Requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (VDECS) (i.e., exhaust retrofits).

- California Environmental Quality Act (CEQA): CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental review documents. The purpose of CEQA is to:
  - Inform governmental decisionmakers and the public about the potential significant environmental effects of proposed activities;
  - Identify the ways that environmental damage can be avoided or significantly reduced;
  - Prevent significant avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
  - Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose, if significant environmental effects are involved.

2.3.3 SJVAPCD Regional Air Quality Attainment Plans

The CAA requires that each State develop a SIP that demonstrates how the NAAQS will be achieved, maintained, and enforced. Each air district is responsible for developing the portion of the air quality attainment plan (AQAP) for the region under its jurisdiction. Air districts such as the SJVAPCD are responsible for regulating stationary sources at industrial and commercial facilities and for preparing the AQAPs that are required under the federal CAA and California CAA.

Management of air quality in the SJVAB is the responsibility of the SJVAPCD. The SJVAPCD is responsible for monitoring air quality within the valley, preparing AQAPs to ensure that NAAQS are attained as expeditiously as practical, implementing regulations/rules that have been identified in the AQAP, and developing control measures to reduce existing emissions and improve air quality. To that end, the SJVAPCD has developed AQAPs demonstrating attainment of the NAAQS for ozone, PM_{10}, and $PM_{2.5}$. Air Quality Plans applicable to the proposed Project are summarized below.

- 2020 Reasonably Available Control Technology (RACT) Demonstration for the 2015 8-Hour Ozone Standard (June 18, 2020)

  The EPA's Final Rule for Implementation of the 2015 8-Hour Ozone NAAQS establishes guidance for air districts to demonstrate that RACT levels of emission controls are being implemented. Much of the approach from the SIP demonstration elements under the 2008 Ozone SIP Requirements Rule (80 Federal Register [FR] 12265, March 6, 2015) is retained for the 2015 Ozone NAAQS.

  Pursuant to EPA guidance, this RACT Demonstration is composed of several main elements:

  - A demonstration that EPA Control Technique Guidelines (CTGs) are being implemented in the valley, and a discussion and recertification of the negative declarations for categories that do not exist in the valley;
  - A demonstration that all major NO_x and VOC sources in the valley are covered by RACT rules; and
  - A demonstration that the District's rules for ozone precursors (NO_x and VOC) satisfy RACT levels of stringency, applicability, and enforceability.

- 2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards (November 15, 2018)

  The SVJAB is designated as a serious nonattainment area for the annual and 24-hour NAAQS for $PM_{2.5}$. The SJVAPCD has prepared multiple plans for addressing the $PM_{2.5}$ NAAQS, which was promulgated in 1997, and the subsequent plans prepared in 2006 and 2012.

  On October 15, 2018, the SJVAPCD adopted the "2018 Integrated Plan for the $PM_{2.5}$ NAAQS." The AQAP includes a strategy that demonstrates attainment with the $PM_{2.5}$ standards by December 2025.

- The 2007 PM_{10} Maintenance Plan

  The SJVAPCD adopted the "2007 PM_{10} Maintenance Plan" in September 2007 to formally request that the EPA redesignate the valley as a PM_{10} attainment area and to ensure continued attainment of the PM_{10} standards.

  On September 12, 2008, the EPA redesignated the SJVAB as an attainment area for the PM_{10} NAAQS. The EPA noted that the maintenance plan retains all PM_{10} controls and monitoring for the SJVAB, provides a demonstration that the area will continue to be in attainment until 2020, and provides for contingency measures if the area does not continue to be in attainment.

2.3.4 SJVAPCD Rules and Regulations

The SJVAPCD is responsible for establishing and enforcing air quality rules and regulations. SJVAPCD regulations applicable or potentially applicable to the proposed

Project are presented in this section. Federal regulations have been incorporated into many SJVAPCD rules, and the applicability of each federal program is described.

- Rule 2010 – Permits Required

  Rule 2010 requires that an Authority to Construct (ATC) and a Permit to Operate (PTO) (an NSR permit) be obtained prior to constructing, altering, replacing, or operating any device which emits or may emit air contaminants.

- Rule 2201 – New and Modified Stationary Source Review

  Rule 2201 provides for the review of new and modified stationary sources of air pollution and provides mechanisms, including emissions offsets, by which ATCs of such sources may be granted without interfering with the attainment or maintenance of an AAQS. The SJVAPCD NSR rule applies to all new stationary sources and all modifications to existing stationary sources which are subject to SJVAPCD permit requirements. The rule generally requires that new or modified equipment include BACT and that emission increases above specified thresholds be offset.

  - *Best Available Control Technology*

    Pursuant to Section 4.1 of Rule 2201, BACT is triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. The proposed Project results in an increase in VOC emissions over 2 pounds per day and will trigger BACT for VOCs.

    The compost facility will be constructed with CASP technology for aerating the compost piles and operated with a biofilter layer of cured compost to control emissions. Aerated piles with a biofilter satisfy BACT for composting.

    The bioenergy facility internal combustion (genset) engines will operate with SCR for NO_x emissions control and oxidation catalyst for VOC and CO emissions control. The flare will be designed with a low-NO_x burner. These emission control measures meet BACT requirements.

  - *Offsets*

    Pursuant to Section 4.5.3 of Rule 2201, offsets are triggered on a pollutant-by-pollutant basis and are required if the post-Project stationary source potential to emit (PTE) is equal to or greater than the emissions offset threshold levels listed in Rule 2201.

    Based on the emissions estimates for the project (see Section 3), VOC emission offsets will be required for the compost facility due to emissions exceeding the offset threshold of 20,000 pounds per year. The compost facility emissions from permitted sources will not exceed the offset threshold for any other criteria pollutant.

    The bioenergy facility emissions will not exceed the offset threshold for any pollutant, thus offsets will not be required per Rule 2201.

- *Public Notification*

  Pursuant to Section 5.4 of Rule 2201, public notification and publication are required for the following types of applications:

  - New Major Sources, Federal Major Modifications, and SB 288 Major Modification;
  - Any new emissions unit with a potential to emit greater than 100 pounds during any one day for any one affected pollutant;
  - Modifications that increase the Stationary Source Potential to Emit (SSPE1) from a level below the emissions offset threshold level to a level exceeding the emissions offset threshold level for one or more pollutants;
  - New stationary sources with SSPE2 exceeding the emissions offset threshold level for one or more pollutants; and
  - Any permitting action resulting in a Stationary Source Increase in Permitted Emissions (SSIPE) exceeding 20,000 pounds per year for any one pollutant.

  The compost facility will be a new major source due to emissions of VOC exceeding the major source threshold of 20,000 pounds per year. Therefore, public notification will be required.

  The bioenergy facility will not trigger public notification requirements, as it would not satisfy any of the criteria listed above.

- *Ambient Air Quality Analysis (AAQA)*

  Rule 2201 requires an AAQA to determine whether a new or modified stationary source will cause or make worse a violation of an air quality standard.

  An AAQA has been prepared in support of this Air Quality and GHG Technical Report. The AAQA confirms that the proposed Project will not have an adverse impact on regional air quality. AAQA modeling results are provided in Appendix F.

- <u>Rule 2520 – Federally Mandated Operating Permits</u>

  Operating permits are required for major sources with a PTE over specific thresholds based on the attainment status of the area, major sources of hazardous air pollutants (HAPs), or sources which are subject to certain federal regulations. This requirement comes from Title V of the CAA Amendments of 1990. Consequently, these types of operating permits are called Title V permits.

  In the San Joaquin Valley, Title V permits are issued by the SJVAPCD pursuant to Rule 2520.

  The VOC PTE for from the proposed compost facility is expected to exceed the SJVAPCD major source threshold of 10 TPY; thus, the proposed compost facility would be subject to Title V permitting requirements. The rule requires a completed application to be filed within 12 months of becoming subject to the rule.

Emissions from the proposed bioenergy facility are not expected to exceed the SJVAPCD major source threshold for any pollutant and, thus, the facility would not be subject to Title V permitting requirements.

- Rule 4001 – New Source Performance Standards

  This rule incorporates NSPS from 40 CFR Part 60 and applies to new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60 which meet the applicability requirements.

  Compost facilities are not subject to any federal NSPS.

  The syngas-fired internal combustion (IC) engines proposed for operation in the bioenergy facility will be subject to 40 CFR Part 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. Subpart JJJJ establishes emission limits for NO_x, hydrocarbons (i.e., VOC), and CO. Compliance with the BACT emission standards in the SJVAPCD ensures compliance with Subpart JJJJ standards. Subpart JJJJ requires pre-construction notification, which is satisfied by the SJVAPCD permitting process, along with periodic monitoring, reporting, and recordkeeping. Subpart JJJJ requirements will be incorporated into the operating permits for the IC engines by the SJVAPCD.

  Rule 4002 – National Emission Standards for Hazardous Air Pollutants

  This rule incorporates the NESHAPs from 40 CFR Parts 61 and 63 and applies to sources of HAPs as defined in each subpart.

  Compost facilities are not subject to any federal NESHAPs.

  The syngas-fired IC engines proposed for operation in the bioenergy facility will be subject to 40 CFR Part 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. Subpart ZZZZ requires only that the engines comply with Subpart JJJJ. As discussed above, compliance with Subpart JJJJ is assured through SJVAPCD BACT standards and permit requirements.

- Rule 4101 – Visible Emissions

  Rule 4101 prohibits visible air contaminant discharge into the atmosphere for a period or periods aggregating more than 3 minutes in any 1 hour, with 20% opacity or greater.

  Paved working surfaces, the use of street sweepers, and the application of water for dust suppression will ensure compliance with this rule.

- Rule 4102 – Nuisance

  Rule 4102 prohibits discharge of air contaminants which could cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; endanger the comfort, repose, health, or safety of any such person or the public; or cause or have a natural tendency to cause injury or damage to business or property.

Paved working surfaces, the use of street sweepers, and the application of water for dust suppression will ensure compliance with this rule.

- Rule 4201 – Particulate Matter Concentration

  Rule 4201 applies to sources which emit or may emit dust, fumes, or total suspended particulate. The rule prohibits discharge of dust, fumes, or total particulate into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot (dscf).

  The expected PM emission concentrations are less than 0.1 grain per dscf, and compliance with this rule is expected.

- Rule 4202 – Particulate Matter Emission Rate

  Rule 4202 limits PM emissions by establishing allowable emission rates. PM emissions from any source operation shall not exceed the allowable hourly emission rate as determined by the Rule 4202. Compliance with Rule 4202 is expected.

- Rule 4565 – Biosolids, Animal Manure, and Poultry Litter Operations

  Receipt of biosolids and animal waste material is proposed as part of this Project. Therefore, the requirements of this rule apply to the handling and processing of these materials. For compost operations processing more than 100,000 wet tons per year, the rule requires that the facility implement mitigation measures as specified in the rule.

  The proposed compost facility is expected to be in compliance with the applicable rule requirements for biosolids and animal waste disposal and composting. The rule is not applicable to the bioenergy facility.

- Rule 4566 – Composting Operations

  The proposed compost facility would be subject to the provisions of this rule. The rule requires that active composting be initiated within 3 days following receipt of the organic material, covered with a waterproof material, or removed from the site. While composting, the facility must implement mitigation measures as specified in the rule. The compost facility is expected to be in compliance with the applicable rule requirements. The rule is not applicable to the bioenergy facility.

- Rule 4801 – Sulfur Compounds

  This rule limits the emissions of sulfur compounds. The rule applies to any discharge to the atmosphere of sulfur compounds which would exist as a liquid or a gas at standard conditions. The rule prohibits the discharge into the atmosphere of sulfur compounds in concentrations greater than 2,000 parts per million by volume (ppmv) as SO_2 on a dry basis averaged over 15 consecutive minutes. Use of CARB diesel fuel in the operating equipment will ensure compliance at the compost facility. The bioenergy facility is expected to operate in compliance with this rule.

- Rule 8011 – General Requirements

  The purpose of Regulation VIII (Fugitive PM_{10} Prohibitions) is to reduce ambient concentrations of PM_{10} by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. The rules contained in Regulation VIII have been developed pursuant to EPA guidance for serious PM_{10} nonattainment areas. The rules are applicable to specified anthropogenic fugitive dust sources. Fugitive dust contains PM_{10} and particles larger than PM_{10}. Paved working surfaces, the use of street sweepers, and the application of water for dust suppression will ensure compliance with this rule.

- Rule 8021 – Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities

  This rule limits fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities. This rule applies to any such activity and other earthmoving activities, including, but not limited to, land clearing, grubbing, scraping, travel on-site, and travel on access roads to and from the site.

- Rule 8031 – Bulk Materials

  The purpose of the rule is to limit fugitive dust emissions from outdoor handling, storage, and transport of bulk materials. The rule applies to the outdoor handling, storage, and transport of any bulk material.

  Paved working surfaces, the use of street sweepers, and the application of water for dust suppression will ensure compliance with this rule.

- Rule 8041 – Carryout and Track-Out

  This rule limits fugitive dust emissions from carryout and track-out. The rule applies to all sites that are subject to any of the following rules where carryout or track-out has occurred or may occur on paved public roads or the paved shoulders of a paved public road: Rules 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities), 8031 (Bulk Materials), 8061 (Paved and Unpaved Roads), and 8071 (Unpaved Vehicle and Equipment Traffic Areas).

  Paved working surfaces, the use of street sweepers, and the application of water for dust suppression will ensure compliance with this rule.

- Rule 8051 – Open Areas

  The purpose of this rule is to limit fugitive dust emissions from open areas. This rule applies to any open area having 0.5 acres or more within urban areas or 3.0 acres or more within rural areas that contains at least 1,000 square feet of disturbed surface area.

- Rule 8061 – Paved and Unpaved Roads

  This rule limits fugitive dust emissions from paved and unpaved roads by implementing control measures and design criteria. This rule applies to any new or existing public or private paved or unpaved road, road construction project, or road modification project.

Paved working surfaces, the use of street sweepers, and the application of water for dust suppression will ensure compliance with this rule.

- Rule 8071 – Unpaved Vehicle/Equipment Traffic Areas

  The purpose of this rule is to limit fugitive dust emissions from unpaved vehicle and equipment traffic areas. This rule applies to any unpaved vehicle/equipment traffic area.

  The compost and bioenergy facilities are expected to have paved work and travel surfaces.

- Rule 9110 – General Conformity

  This rule specifies the criteria and procedures for determining the conformity of federal actions with the SJVAPCD's air quality implementation plan. The rule generally applies to federal actions (federal approval of projects) which would result in regionally significant emissions increases or a major increase in emissions of nonattainment pollutants that are not otherwise subject to NSR.

  This Project is not subject to federal approval (i.e., is not a "federal action") and does not trigger requirements for conducting a general conformity analysis.

- Rule 9510 – Indirect Source Review

  The purpose of Indirect Source Review (ISR) is to reduce emissions of NO_x and PM_{10} from new development projects. New development projects may contribute to the air pollution problem in the valley by increasing the number of vehicles and vehicle miles traveled.

  Rule 9510 applies to development projects that have not yet gained discretionary approval. However, there are several sources that are exempt. These include transportation projects that meet certain conditions, reconstruction projects that result from a natural disaster, and development projects on a facility whose primary functions are subject to Rule 2201 (New and Modified Stationary Source Review Rule) or Rule 2010 (Permits Required), including solid waste landfills.

  This Project is not subject to ISR. The Project is exempt from ISR requirements pursuant to Rule 9510, Section 4.4.3, because the sources are subject to NSR.

2.3.5 Tulare County General Plan

In August 2012, Tulare County published its 2030 General Plan Update. The plan expresses the County's intention to comply with State law requirements and pursue goals and policies that enhance the quality of life and public welfare of County residents. To this end, a number of the goals and policies seek to reduce the impacts of air pollution, air pollution sources, and GHG emissions. Some of the featured policies and implementation measures direct growth into compact areas, such as urban development boundaries or corridors; incorporate smart growth and healthy community principles; encourage energy efficiency; and promote development of renewable energy sources and use of energy conservation measures. Additional Policies and Implementation Measures include promoting green building practices in design, construction, and renovation and incorporating efficiency in transportation and circulation design to reduce or minimize vehicle trips. The Policies and Implementation Measures relevant to the proposed Project are identified below:

AQ-1.4 Air Quality Land Use Compatibility

The County shall evaluate the compatibility of industrial or other developments which are likely to cause undesirable air pollution with regard to proximity to sensitive land uses and wind direction and circulation in an effort to alleviate effects upon sensitive receptors.

AQ-1.5 California Environmental Quality Act (CEQA) Compliance

The County shall ensure that air quality impacts identified during the CEQA review process are consistently and reasonably mitigated when feasible.

AQ-1.7 Support Statewide Climate Change Solutions

The County shall monitor and support the efforts of Cal/EPA, CARB, and the SJVAPCD under AB 32 (Health and Safety Code §38501 et seq.) to develop a recommended list of emission reduction strategies. As appropriate, the County will evaluate each new project under the updated General Plan to determine its consistency with the emission reduction strategies.

AQ-1.9 Support Off-Site Measures to Reduce Greenhouse Gas Emissions

The County will support and encourage the use of off-site measures or the purchase of carbon offsets to reduce greenhouse gas emissions.

AQ-4.1 Air Pollution Control Technology

The County shall utilize the Best Available Control Measure (BACM) and Reasonably Available Control Measure (RACM) as adopted by the County to support SJVAPCD air quality attainment plans to achieve and maintain healthful air quality and high visibility standards. These measures shall be applied to new development approvals and permit modifications as appropriate.

AQ-4.2 Dust Suppression Measures

The County shall require developers to implement dust suppression measures during excavation, grading, and site preparation activities consistent with SJVAPCD Regulation VIII – Fugitive Dust Prohibitions. Techniques may include, but are not limited to, the following:

1. Site watering or application of dust suppressants;
2. Phasing or extension of grading operations;
3. Covering of stockpiles;
4. Suspension of grading activities during high wind periods (typically winds greater than 25 miles per hour); and
5. Revegetation of graded areas.

AQ-4.3 Paving or Treatment of Roadways for Reduced Air Emissions

The County shall require that all new roads be paved or treated to reduce dust generation where feasible as required by SJVAPCD Regulation VIII, Rule 8061 – Paved and Unpaved Roads. For new projects with unpaved roads, funding for roadway maintenance shall be adequately addressed and secured.

Reference: Tulare County 2012.

3.0 EMISSIONS

3.1 Baseline Landfill Emissions

The Visalia Landfill is an existing facility permitted to dispose up to 2,000 TPD of waste. The proposed composting facility would have the capacity to divert up to 641 TPD (200,000 TPY) from landfill to composting, and the proposed bioenergy facility would divert up to an additional 68 TPD (25,000 TPY) from landfill to bioenergy production. Logically, diverting 709 TPD of organic waste from the landfill will reduce emissions from the landfill. However, the landfill would continue to operate and intends to retain the ability to operate at the permitted capacity of 2,000 TPD of waste. Thus, from the standpoint of permitted capacity, the landfill staffing, vehicles, and equipment required to operate the landfill remain unchanged following the implementation of the proposed compost facility. Although the Project will avoid emissions that would have otherwise occurred, emissions associated with landfill operation would be the same following Project implementation as they are pre-project and are not estimated.

3.2 Construction Emissions

The construction emissions analysis was performed using CalEEMod version 2016.3.2 (CAPCOA 2019), the official statewide land use computer model designed to provide a uniform platform for estimating potential criteria pollutant and GHG emissions associated with construction of land use projects. The model quantifies direct emissions from construction (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The mobile source emission factors used in the model include the Pavley standards and Low Carbon Fuel Standards. The model also identifies project design features, regulatory measures, and mitigation measures to reduce criteria pollutant and GHG emissions, along with calculating the benefits achieved from the selected measures.

A project's construction phase produces many types of emissions, but PM_{10} (including $PM_{2.5}$) in fugitive dust and diesel engine exhaust are the pollutants of greatest concern. Fugitive dust emissions can result from a variety of construction activities, including excavation, grading, demolition, vehicle travel on paved and unpaved surfaces, and vehicle exhaust. The use of diesel-powered construction equipment emits ozone precursors NO_x and VOC, as well as DPM. Asphalt paving and/or the use of architectural coatings and other materials associated with finishing buildings may also emit VOCs and TACs.

Daily and total annual construction emissions are summarized in Tables 3-1 and 3-2, respectively. A complete discussion and emission calculations are provided in Appendix B.

Table 3-1: Mitigated Maximum Daily Construction Emissions Summary

Criteria Pollutants	Maximum Daily Emissions (lb/day)			
	Compost Facility Phase 1	Compost Facility Phase 2	Compost Facility Phase 3	Bioenergy Facility
VOC	114.03	1.96	1.96	111.80
NO_x	37.98	17.40	17.40	17.01
CO	35.00	19.03	19.03	15.73
SO_x	0.09	0.04	0.04	0.03
PM_{10}	3.58	1.16	1.16	3.34
$PM_{2.5}$	2.05	0.83	0.83	2.01

Table 3-2: Annual Construction Emissions Summary

Criteria Pollutant	Total Annual Emissions (Tons)			
	Compost Facility Phase 1	Compost Facility Phase 2	Compost Facility Phase 3	Bioenergy Facility
VOC	1.42	0.06	0.06	0.66
NO_x	2.30	0.52	0.52	1.05
CO	2.04	0.56	0.56	0.99
SO_x	5.09E-03	1.10E-03	1.10E-03	2.01E-03
PM_{10}	2.13E-01	3.46E-02	3.46E-02	6.85E-02
$PM_{2.5}$	1.24E-01	2.48E-02	2.48E-02	5.20E-02

3.3 Operational Mobile Source Emissions

Emission estimates were prepared for the mobile sources required to operate the proposed composting and bioenergy facilities. The mobile sources include employee travel to and from the facility, support vehicle traffic, heavy equipment operation needed to move feedstock into the processing units, finished compost delivery vehicle traffic, and biochar delivery vehicle traffic. The SJVAPCD has developed CEQA significance thresholds for non-permitted sources, which include mobile sources. Mobile sources are not permitted by the SJVAPCD, and thus are not subject to the NSR requirements of Rule 2201, such as BACT, modeling, or offsets. Mobile sources may be subject to State or federal emission standards, depending on the vehicle or equipment in question. As noted elsewhere, because the compost and bioenergy facilities are co-located at the landfill, there will be no new emissions associated with feedstock transport to the compost or bioenergy facilities, so mobile source emissions associated with waste transport to the facility are not included in the Project emission inventory.

Emissions estimates have been prepared for the following source categories:

- Vehicle and Equipment Exhaust Emissions:
    - On-road Vehicle Exhaust Emissions; and
    - Off-road Equipment Exhaust Emissions;
- Dust/Particulate Emissions:
    - Fugitive Dust from Travel on Paved Roads; and

  - Fugitive Dust from Travel on Unpaved Areas;
- Toxic Air Contaminant Emissions:
  - Vehicle and Equipment Exhaust TAC Emissions:
    - Diesel Exhaust Emissions; and
    - Gasoline Exhaust Emissions;
  - Dust and Particulate TAC Emissions:
    - Paved Road Dust TAC Emissions; and
    - Unpaved Road Dust TAC Emissions.

Daily and annual operational mobile source emissions are summarized in Tables 3-5 and 3-6, respectively. A complete discussion and emission calculations are provided in Appendix C. TAC emissions estimates are also provided in Appendix C.

Table 3-3: Summary of Daily Mobile Source Operating Emissions

Activity	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
On-road Vehicle Exhaust	17.48	0.32	3.15	0.10	1.16	0.57
On-road Vehicle Paved Road Dust	–	–	–	–	2.39	0.60
On-road Vehicle Unpaved Road Dust	–	–	–	–	0.00	0.00
Off-road Equipment Exhaust	4.71	2.20	40.79	0.08	0.16	0.16
Off-road Equipment Unpaved Dust	–	–	–	–	5.88	0.59
Total	22.19	2.52	43.94	0.17	9.59	1.91

Table 3-4: Summary of Annual Mobile Source Operating Emissions

Activity	NO_x (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)	$PM_{2.5}$ (lb/yr)
On-road Vehicle Exhaust	5453.92	99.72	983.81	29.71	363.02	178.20
On-road Vehicle Paved Road Dust	–	–	–	–	717.02	179.25
On-road Vehicle Unpaved Road Dust	–	–	–	–	0.00	0.00
Off-road Equipment Exhaust	1468.43	685.27	12726.40	23.99	48.95	48.95
Off-road Equipment Unpaved Dust	–	–	–	–	1833.10	183.31
Total (lb/yr)	6922.35	784.99	13710.20	53.70	2962.08	589.72
Total (TPY)	3.5	0.4	6.9	0.03	1.5	0.3

3.4 Composting Facility Emissions

Composting emissions fall into two basic categories: 1) fugitive dust emissions from material handling, and 2) gaseous emissions from the decomposition of the feedstock.

Operations that involve the movement of material or that expose or disturb erodible surfaces may generate fugitive dust. During composting operations, fugitive dust (particulate matter) is generated by activities such as grinding, screening, material handling, and wind erosion. Particulate emissions are speciated into TAC emissions using published speciation profiles that are appropriate for the material. The screening and grinding equipment will be electrically-driven, so particulate emissions are the only emissions expected (i.e., there will be no combustion engines powering grinding or screening equipment).

Composting operations will emit VOC due to the decomposition of the organic materials during the composting and curing operations. VOC is the only criteria pollutant that would be emitted directly from the decomposition of organic matter in the composting process.

Organic TAC emissions for composting, curing, and finished compost storage are estimated by speciating the VOC emissions using published speciation profiles.

Ammonia may be emitted from organic waste processing operations due to decomposition of nitrogen-bearing compounds present in the feedstock. Ammonia can form if the C:N ratio is low or there is insufficient oxygen.

Emissions estimates have been prepared for the proposed composting facility for the following source categories:

- Dust/Particulate Emissions:
  - Grinding and Screening;
  - Material Handling; and
  - Wind Erosion;
- Composting Operations; and
- Toxic Air Contaminant Emissions:
  - Dust and Particulate TAC Emissions; and
  - Composting TAC Emissions:
    - Screening, grinding, material handling, wind erosion;
    - Ammonia; and
    - Organic TAC.

Daily and annual composting facility emissions are summarized in Tables 3-5 and 3-6, respectively. A complete discussion and emission calculations are provided in Appendix D. TAC emissions estimates are also provided in Appendix D.

Table 3-5: Summary of Proposed Daily Composting Emissions

Activity	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Composting/Curing	–	175.77	–	–	–	–
Grind and Screen	–	–	–	–	3.69	0.55
Material Handling	–	–	–	–	1.53	0.23
Wind Erosion	–	–	–	–	0.34	0.14
Total	0.00	175.77	0.00	0.00	5.56	0.92

Table 3-6: Summary of Proposed Annual Composting Emissions

Activity	NO_x (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)	$PM_{2.5}$ (lb/yr)
Composting/Curing	–	58,880.00	–	–	–	–
Grind and Screen	–	–	–	–	1,152.00	172.80
Material Handling	–	–	–	–	476.52	72.16
Wind Erosion	–	–	–	–	124.59	49.84
Total (lb/yr)	0.00	58,880.00	0.00	0.00	1,753.11	294.80
Total (TPY)	0.0	29.4	0.0	0.0	0.9	0.1

3.5 Bioenergy Facility Emissions

In preparation for the biomass conversion process, feedstock materials may be pre-processed by grinding. Grinding of the feedstock helps to provide a relatively uniform mixture of material and particle size. The biomass feedstock typically has more moisture than is optimal for the gasifier, so the feedstock is dried in an indirect-fired dryer. The heat to the dryer is provided by the exhaust from the IC engines, so there are no combustion emissions from the drying process. Wood drying, however, does release naturally occurring hydrocarbons from the wood, which are regulated as VOC.

The conversion process features a gasifier. The gasifier itself has no emissions to the atmosphere – the heat required for operation is provided by partial oxidation of the biomass feedstock. The syngas produced by the gasifier is cleaned and then combusted in IC engines to produce electricity. The engines are equipped with emission control systems (i.e., SCR and oxidation catalyst) to minimize criteria pollutant emissions. If the engines are offline, syngas would be diverted to a flare for gas disposal.

Emissions estimates have been prepared for the proposed bioenergy facility for the following source categories:

- Grinding;
- Material Handling;
- Biomass Drying;
- IC Engines;
- Cooling tower; and

- Flare.

Daily and annual bioenergy facility emissions are summarized in Tables 3-7 and 3-8, respectively. A complete discussion and emission calculations are provided in Appendix E. TAC emissions estimates are also provided in Appendix E.

Table 3-7: Summary of Proposed Daily Bioenergy Facility Emissions

Activity	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Grind	–	–	–	–	0.99	0.14
Material Handling	–	–	–	–	0.15	0.02
Dryer	–	14.70	–	–	–	–
Engines (2) Normal Ops	20.93	20.22	141.55	2.86	3.49	3.49
Flare	31.01	28.73	141.36	2.92	3.56	3.56
Cooling Tower	–	9.36	–	–	0.11	0.11
Total[1]	31.01	52.79	141.55	2.92	4.81	3.83

Notes:

1. For combustion byproduct emissions, the higher of the daily emissions from either the engine or flare is summed, as the engines and flare would not operate concurrently.

Table 3-8: Summary of Proposed Annual Bioenergy Facility Emissions – Normal Operations

Activity	NO_x (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)	$PM_{2.5}$ (lb/yr)
Grind	---	---	---	---	360.00	50.00
Material Handling	---	---	---	---	55.66	8.43
Dryer	---	5400	---	---	---	---
Engines (2) Normal Ops	7639.26	7380.93	51666.48	1044.61	1274.72	1274.72
Flare	323.00	299.25	1472.50	30.37	37.06	37.06
Cooling Tower	---	3416.40	---	---	41.47	41.47
Total (lb/yr)	7962.26	16496.58	53138.98	1074.98	1768.91	1411.68
Total (TPY)	4.0	8.2	26.6	0.5	0.9	0.7

3.6 Summary of Emissions

Total daily and annual Project emissions are presented in Tables 3-9 and 3-10, respectively.

Table 3-9: Daily Emissions – Total Project

Project Element	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Mobile Sources	22.19	2.52	43.94	0.17	9.59	1.91
Compost Facility	0.00	175.77	0.00	0.00	5.56	0.92
Bioenergy Facility	31.01	52.79	141.55	2.92	4.81	3.83
Total New Sources	**53.20**	**231.08**	**185.49**	**3.09**	**19.96**	**6.67**

Table 3-10: Annual Emissions – Total Project

Activity	NO_x (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)	$PM_{2.5}$ (lb/yr)
Mobile Sources (Non-permitted)	6,922.35	784.99	13,710.20	53.70	2,962.08	589.72
Compost Facility (Permitted)	0.00	58,880.00	0.00	0.00	1,753.11	294.80
Bioenergy Facility (Permitted)	7,962.26	16,496.58	53,138.98	1,074.98	1,768.91	1,411.68
Subtotal Permitted Sources	*7,962.26*	*76,161.57*	*53,138.98*	*1,074.98*	*3,522.02*	*1,706.47*
Total New Sources	**14,884.61**	**76,161.57**	**66,849.18**	**1,128.69**	**6,484.10**	**2,296.19**
Total New Sources (TPY)	**7.4**	**38.1**	**33.4**	**0.6**	**3.2**	**1.1**

4.0 AIR QUALITY SIGNIFICANCE FINDINGS AND MITIGATION

Project impacts are evaluated relative to Appendix G of the CEQA Guidelines using the SJVAPCD significance criteria from the SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI). For those project impacts with the potential for significant adverse impacts, mitigation measures are proposed.

4.1 CEQA Significance Criteria

Tulare County relies upon Appendix G of the Guidelines for the Implementation of the California Environmental Quality Act (Title 14, Division 6, Chapter 3, January 2018), which states that a project would have a significant air quality impact if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Each of these impacts is evaluated against the significance criteria identified in the SJVAPCD GAMAQI. The CEQA air quality impact areas are discussed in the following sections.

4.2 Impact AQ-1: Would the Project Conflict with or Obstruct Implementation of the Applicable Air Quality Plan?

4.2.1 Evaluation Criteria

The SJVAPCD GAMAQI does not list specific criteria for evaluating this impact area, so a qualitative approach is used to compare the project design and emissions to applicable air quality plans.

4.2.2 Discussion

As discussed in Section 2.4.4, the SJVAPCD has prepared AQAPs for ozone and $PM_{2.5}$ and a maintenance plan for PM_{10}. An attainment plan must be prepared for pollutants which exceed the NAAQS, and a maintenance plan has been prepared for pollutants for which the valley is designated as attainment or unclassifiable with respect to the NAAQS. A maintenance plan is prepared to ensure that additional emissions of the attainment/unclassified pollutants will not adversely affect air quality to the extent that it would result in a violation of the applicable air quality standard.

Rule 2201, *New Source Review*, is a major component of the SJVAPCD's attainment strategy. NSR provides mechanisms, including emissions trade-offs, by which ATCs/PTOs may be granted without interfering with the attainment or maintenance of the AAQS. SJVAPCD implementation of NSR ensures that there is no net increase in emissions above specified thresholds from new and modified stationary sources for all nonattainment pollutants and their precursors. Permitted emissions above offset thresholds must be offset to below the rule threshold, adjusted for the distance of the source of ERCs to the project, and also adjusted by a factor to provide a net air quality benefit for ozone precursors. Furthermore, the SJVAPCD's NSR program is designed to ensure that project-specific emissions increases that are below NSR offset thresholds will not prevent the SJVAPCD from achieving attainment. The SJVAPCD's attainment plans demonstrate that this level of emissions increase will not interfere with attainment or maintenance of the AAQS. Consequently, emissions impacts from sources permitted consistent with NSR requirements are consistent with the SJVAPCD's AQAPs, and hence are not individually or cumulatively significant.

The SJVAPCD's attainment plans must account for emissions from existing projects and also provide for future growth. The attainment plans must ensure that on a valley-wide basis (i.e., cumulative basis), there is no increase in emissions of nonattainment pollutants or precursors (NO_x, VOC, and $PM_{2.5}$). District plans must treat future growth as actual "in the air" emissions, and the plans must include control measures that achieve reductions needed to offset (mitigate) such growth and ensure reasonable further progress toward attainment of the AAQS.

The 2018 Integrated $PM_{2.5}$ AQAP accounts for current and projected future growth of waste management-related emissions. For example, the plan includes 0.3 TPD of $PM_{2.5}$ emissions for the Waste Management category starting in 2020. As shown in Table 3-9, the $PM_{2.5}$ net emissions increase for the proposed compost and bioenergy facilities is 6.67 pounds per day (0.003 TPD), which is about 1.1% of the emissions accounted for in the $PM_{2.5}$ AQAP. Therefore, it is reasonable to assume that both the permitted and non-permitted emissions associated with the proposed Project are accounted for and do not conflict with or obstruct implementation of the applicable air quality plan.

Many design features will be implemented for the proposed Project that will minimize and mitigate emissions, including a dust control plan. The ATCs and PTOs that will be issued by the SJVAPCD will require BACT on new sources subject to permitting, will require that ERCs are provided, and will impose permit conditions that ensure compliance with federal NSPS, CARB regulations, and SJVAPCD rules and regulations (see Section 2.4.5).

4.2.3 Level of Significance

The proposed Project will not conflict with or obstruct implementation of the applicable air quality plan. Therefore, the proposed Project will have a less than significant impact on air quality.

4.2.4 Proposed Mitigation

None required.

4.3 Impact AQ-2: Would the Project Result in a Cumulatively Considerable Net Increase of any Criteria Pollutant for which the Project Region is Non-attainment under an Applicable Federal or State Ambient Air Quality Standard?

4.3.1 Evaluation Criteria

A project would be cumulatively significant if it was determined to be significant by itself, or cumulatively significant in consideration of regional plans. In this section, the Project is evaluated to determine if it is significant by itself based on mass emissions and ambient air quality significance thresholds, or cumulatively significant based on regional plans.

4.3.1.1 Mass Emissions

The SJVAPCD's thresholds of significance for criteria pollutant emissions and their application are presented in Table 4-1.

Table 4-1: Air Quality Thresholds of Significance

Pollutant/ Precursor	Thresholds of Significance		
	Construction Emissions	Operational Emissions	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
	Emissions (TPY)	Emissions (TPY)	Emissions (TPY)
CO	100	100	100
NO_x	10	10	10
VOC	10	10	10
SO_x	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

4.3.1.2 Ambient Air Quality

When assessing the significance of project-related impacts on air quality, the SJVAPCD recommends that an AAQA be performed when on-site emissions increases from construction activities or operational activities exceed the 100 pounds per day screening level for any criteria pollutant after implementation of all enforceable mitigation measures. The AAQA would evaluate project emissions against the CAAQS and NAAQS that are listed in Table 2-1.

The SJVAPCD's GAMAQI allows for a traffic study to be substituted for a modeling analysis to evaluate CO impacts (the "CO Hotspots" analysis). Because conventional ambient air quality modeling was conducted to evaluate the air quality impacts of criteria pollutants, including CO emissions, the CO Hotspots analysis was not conducted.

4.3.1.3 Cumulative Impacts

When assessing whether there is a new significant cumulative effect, the Lead Agency shall consider whether the incremental effects of the project are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects [14 CCR Section 15064(h)(1)].

Per CEQA Guidelines Section 15064(h)(3), a Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including but not limited to an air quality attainment or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located [14 CCR Section 15064(h)(3)].

Although the CEQA Guidelines allow for such a finding, Section 9.2 of the SJVAPCD GAMAQI indicates "Design elements, mitigation measures, and compliance with District rules and regulations may not be sufficient to reduce project-related impacts on air quality to a less than significant level. In such situations, project proponents may enter into a Voluntary Emission Reduction Agreement (VERA) with the District to reduce the project related impact on air quality to a less than significant level. A VERA is a mitigation measure by which the project proponent provides pound-for-pound mitigation of nonattainment pollutant emissions increases through a process that funds and implements emission reduction projects. A VERA can be implemented to address impacts from both construction and operational phases of a project."

4.3.2 Discussion

4.3.2.1 Mass Emissions

As noted in Section 4.3.1.2, daily emissions are compared to the 100 pounds per day screening level to determine if ambient air quality modeling is required for a proposed project. Project permitted and non-permitted source emissions are compared to the SJVAPCD daily AAQA screening threshold in Table 4-2. As shown, the anticipated daily construction VOC emissions will exceed the threshold of 100 pounds per day. However, modeling is not required for VOC emissions because there are no AAQS for VOC; therefore, modeling for construction activities is not required. The mass daily operating emissions for permitted sources exceed the 100 pounds per day threshold for VOC and CO. Therefore, ambient air quality modeling is required for operating emissions.

Table 4-2: Project Emissions Compared to Daily AAQA Screening Level

Category	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Project Construction Emissions	54.99	225.83	50.73	0.12	3.34	4.06
AAQA Construction Screening Level	100	100	100	100	100	100
Exceed Level?	*No*	***Yes***	*No*	*No*	*No*	*No*
Project Permitted Source Emissions	31.01	228.56	141.55	2.92	10.37	4.75
AAQA Permitted Source Screening Level	100	100	100	100	100	100
Exceed Threshold?	*No*	***Yes***	***Yes***	*No*	*No*	*No*
Project Non-Permitted Source Emissions	22.19	2.52	43.94	0.17	9.59	1.91
AAQA Non-Permitted Source Screening Level	100	100	100	100	100	100
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

Annual Project emissions are compared to the SJVAPCD mass annual CEQA significant thresholds in Table 4-3. As shown, neither the construction emissions nor the non-permitted operational emissions exceed the significance threshold for any criteria pollutant.

With respect to operational emissions, with the application of 27.3 TPY ERCs as required by SJVAPCD Rule 2202 for the compost facility (i.e., compost facility emissions exceeding the 10-ton offset threshold), and the application of 8.25 TPY of VERA mitigation, the proposed Project would not exceed the significance thresholds for any pollutant.

Table 4-3: Project Emissions Compared to Annual CEQA Emissions Thresholds

Category	NO_x (TPY)	VOC (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)
Project Construction Emissions	3.4	2.1	3.0	0.01	0.3	0.2
CEQA Construction Threshold	10	10	100	27	15	15
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*
Project Permitted Source Emissions	4.0	37.7	26.6	0.5	1.8	0.9
SJVAPCD Rule 2202 ERCs	NR	(19.4)[1]	NA	NA	NR	NA
Proposed VERA Mitigation	--	(9.4)	--	--	--	--
Net Emissions After Offsets	4.0	10.0	26.6	0.5	1.8	0.9
CEQA Permitted Source Threshold	10	10	100	27	15	15
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*
Project Non-Permitted Source Emissions	3.5	0.4	6.9	0.03	1.5	0.3
CEQA Non-Permitted Source Threshold	10	10	100	27	15	15
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

Notes:

1. It is anticipated that the compost area and bioenergy facility will be permitted separately. Only the VOC emissions over 10 TPY for the compost area will be subject to NSR ERCs.

NR: Not required (below SJVAPCD NSR offset thresholds)

NA: Not Applicable (not subject to offsets)

4.3.2.2 Ambient Air Quality

An AAQA for the proposed Project was prepared to evaluate impacts to ambient air quality due to operational emissions. Air dispersion models calculate the atmospheric transport and fate of pollutants from the emissions source. The models calculate the concentrations of selected pollutants at specific downwind ground-level points, such as residential or off-site workplace receptors. The transformation (fate) of an airborne pollutant, its movement with the prevailing winds (transport), its crosswind and vertical movement due to atmospheric turbulence (dispersion), and its removal due to dry and wet deposition are influenced by the pollutant's physical and chemical properties and meteorological and environmental conditions. Factors such as distance from the source to the receptor, meteorological conditions, intervening land use and terrain, pollutant release characteristics, and background pollutant concentrations affect the predicted air concentration of an air pollutant. Air dispersion models take all of these factors into consideration when calculating downwind ground-level pollutant concentrations.

The AAQA demonstrates that the Project will not cause an exceedance of the NO_2, SO_2, or CO NAAQS or CAAQS. Since background PM_{10} and $PM_{2.5}$ concentrations are greater than the NAAQS and CAAQS, the modeled concentrations were compared to the SILs. The predicted PM_{10} and $PM_{2.5}$ concentrations from all on-site exhaust sources are less than the SILs. Calculated maximum emissions from the on-site fugitive dust sources resulted in model-predicted concentrations of PM_{10} and $PM_{2.5}$ that are less than the fugitive dust SILs. Therefore, the proposed Project will not have a significant adverse impact to air quality. The modeling results are presented in Tables 4-4 and 4-5. A detailed modeling report is provided in Appendix F.

Table 4-4: AAQA Modeling Results

Pollutant	Averaging Time	Federal or State Standard	Modeled Concentration ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Modeled + Background Concentration ($\mu g/m^3$)	AAQS ($\mu g/m^3$)	Exceed Standard?
NO_2	1-Hour	Federal	32.4	104.3	136.6	188	No
		California	34.4	133.9	168.3	339	No
	Annual	Federal	3.9	21.0	24.9	100	No
		California	3.9	19.1	23.0	57	No
CO	1-Hour	Federal	520.7	2,725.5	3,246	40,000	No
		California	520.7	2,725.5	3,246	23,000	No
	8-Hour	Federal	394.8	2,329.5	2,724	10,000	No
		California	394.8	2,329.5	2,724	10,000	No
SO_2	1-Hour	Federal	0.9	14.1	15.0	196	No
		California	0.9	23.7	24.6	655	No
	3-Hour	Federal Secondary	0.8	13.6	14.4	1,300	No
	24-Hour	California	0.4	13.6	13.9	105	No
PM_{10}	24-Hour	Federal	See SIL Analysis	411.1	–	150	Background Over the CAAQS and/or NAAQS, Go To Step 2 SIL Analysis
		California	See SIL Analysis	418.5	–	50	
	Annual	California	See SIL Analysis	52.0	–	20	
$PM_{2.5}$	24-Hour	Federal	See SIL Analysis	86.8	–	35	
	Annual	Federal	See SIL Analysis	17.3	–	12	
		California	See SIL Analysis	17.4	–	12	

Table 4-5: PM_{10} and $PM_{2.5}$ SIL Modeling Results for Project

Pollutant	Averaging Time	Modeled Concentration ($\mu g/m^3$)	SIL ($\mu g/m^3$)	Exceed SIL?
PM_{10}	24-Hour	0.47	5.0	No
	Annual	0.13	1.0	No
$PM_{2.5}$	24-Hour	0.47	1.2	No
	Annual	0.13	0.2	No
Fugitive PM_{10}	24-Hour	6.55	10.4	No
	Annual	1.12	2.1	No
Fugitive $PM_{2.5}$	24-Hour	1.03	2.5	No
	Annual	0.19	0.6	No

4.3.2.3 Cumulative Impacts

CEQA defines cumulative impacts as two or more individual effects which, when considered together, are either significant or "cumulatively considerable", meaning they add considerably to a significant environmental impact. An adequate cumulative impact analysis considers a project over time and in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed.

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development. Future attainment of CAAQS and NAAQS in the SJVAB will be a function of successful implementation of the SJVAPCD's attainment plans. Consequently, the SJVAPCD's application of thresholds of significance for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

Per CEQA Guidelines §15064(h)(3) a Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including, but not limited to an air quality attainment or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative impacts within the geographic area in which the project is located [CCR §15064(h)(3)].

Per the GAMAQI (page 108), the District's attainment plans demonstrate that project-specific net emissions increase below NSR offset requirements will not prevent the SJVAPCD from achieving attainment. Consequently, emission impacts from compost and bioenergy facilities' sources, permitted consistent with NSR requirements, are not individually significant. However, due to the severity of the ozone and particulate matter nonattainment status of the San Joaquin Valley, the proposed Project could still have a significant cumulative impact. Therefore, mitigation in the form of a VERA in the amount of 8.25 TPY is proposed, and additional VERA mitigation will be considered to further reduce emissions of nonattainment pollutants and/or their precursors, consistent with SJVAPCD guidelines.

4.3.3 Level of Significance

As shown in Table 4-3, with the surrender of ERCs and a VERA for VOC emissions, criteria pollutant emissions from the proposed Project would be less than the defined CEQA significance criteria. Therefore, Project construction emissions, permitted stationary source emissions, and non-permitted (mobile source) emissions would be less than significant for all criteria pollutants. .

An AAQA was performed which demonstrated that the proposed Project would not be expected to cause a violation of the NAAQS or CAAQS or contribute substantially to an existing air quality violation; the results are summarized in Tables 4-4 and 4-5.

The proposed Project will not have cumulative impacts during construction, as there are no known projects within 2 miles of the Project site that would be constructed or operated concurrent with Project construction. Because the compost and bioenergy facilities will operate as permitted stationary sources, the SJVAPCD's NSR program ensures that the emissions will not be cumulatively significant, per SJVAPCD policy. Additional mitigation in the form of a VERA will be considered to further reduce emissions of nonattainment pollutants and/or their precursors, consistent with SJVAPCD guidelines, so that total mitigated Project emissions do not exceed the CEQA significance threshold.

Based on the analyses conducted, the proposed Project is not expected to result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable NAAQS or CAAQS. Therefore, the Project will have a less than significant cumulative impact on air quality.

4.3.4 Proposed Mitigation

The SJVAPCD strongly recommends the "net-zero" approach; however, this is only a guideline. According to the GAMAQI, this approach results in a significantly larger NO_x emissions reduction, which is the primary driver to the formation of ozone and particulate matter in the Valley. The Solid Waste Department is proposing to enter into a VERA with the SJVAPCD to mitigate 8.25 TPY of VOC emissions and may consider additional VERA mitigation for emissions of NO_x, VOC, and PM_{10} that have not otherwise been mitigated by construction best management practices (BMPs), NSR requirements for ERCs, or the implementation of other control measures such as alternative fueled fleets, etc.

4.4 Impact AQ-3: Would the Project Expose Sensitive Receptors to Substantial Pollutant Concentrations?

4.4.1 Evaluation Criteria

The SJVAPCD's significance thresholds for TAC emissions from the operations of both permitted and non-permitted sources are combined and presented in Table 4-6.

Carcinogenic (cancer) risk is expressed as excess cancer cases per one million exposed persons. Non-carcinogenic (acute and chronic) hazard indices (HI) are expressed as a ratio of expected exposure levels to acceptable (reference) exposure levels.

Table 4-6: Air Quality Thresholds of Significance – Toxic Air Contaminants

Category	Significance Threshold
Carcinogens	Maximally Exposed Individual risk equals or exceeds 20 in one million
Non-Carcinogens	Acute: HI equals or exceeds 1 for the Maximally Exposed Individual
	Chronic: HI equals or exceeds 1 for the Maximally Exposed Individual

The CAPCOA guidelines outline a technique for calculating a prioritization score that helps air districts identify priority facilities for risk assessment, which involves consideration of potency, toxicity, quantity of emissions, and proximity to sensitive receptors such as hospitals, daycare centers, schools, worksites, and residences. If the prioritization score exceeds the high risk level or intermediate risk level after consideration of additional factors, a refined HRA is recommended to determine if the Project's potential health risks are significant. The Prioritization Score hierarchy is explained below:

- Low Score: Projects having a TS less than 1 are low risk and are not likely to have an adverse health risk.
- Intermediate Score: Projects having a TS at least 1 and less than 10 need to evaluate additional factors to determine if the project's TAC emissions will have a less than significant health risk.
- High Score: Projects having a TS equal to or over 10 may have high risk. A refined HRA may be necessary to demonstrate that the project's TAC emissions will have a less than significant health risk.

4.4.2 Discussion

To assess the potential acute, chronic, and carcinogenic health risks from a project, a two-step process can be followed, where initially a screening risk prioritization is conducted. If the potential for high health risks is found, then an HRA may be required.

A risk prioritization analysis is presented in Appendix F and summarized in Table 4-7. It assesses the potential health risk from the proposed Project by calculating a prioritization score at the nearest residential and business receptors. The prioritization score was determined to be an intermediate risk. Since there are no sensitive receptors within 0.5 miles of the Project site, and there is a low population density in the vicinity of the Project, the proposed Project's TAC emissions would have less-than-significant health risk impacts.

Table 4-7: Prioritization Score

Project Phase	Acute	Chronic	Cancer	Prioritization Score
Construction	—	0.0048	3.23	Intermediate
Operations	0.76	0.062	2.97	Intermediate

4.4.3 Level of Significance

Based on the intermediate prioritization score, the absence of any nearby sensitive receptors, and low population density in the vicinity of the Project, it is reasonable to conclude that the construction and operation of the proposed Project will not expose sensitive receptors to substantial pollutant concentrations or health risks. Therefore, the Project will have a less than significant impact on sensitive receptors.

4.4.4 Proposed Mitigation

None required.

4.5 Impact AQ-4: Would the Project Result in Other Emissions (Such as Those Leading to Odors) Adversely Affecting a Substantial Number of People?

4.5.1 Evaluation Criteria

The Project should be evaluated to determine the likelihood that the Project would result in nuisance odors. Any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact. Nuisance odors may be assessed qualitatively, considering the design elements and proximity to off-site receptors that potentially would be exposed to objectionable odors.

Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact and the variety of odor sources, there are no quantitative or formulaic methodologies to determine if potential odors would have a significant impact. Rather, projects must be assessed on a case-by-case basis.

The SJVAPCD GAMAQI establishes the screening level for potential odor sources as a 1-mile setback for composting facilities. The GAMAQI also recommends reviewing the odor complaint history for the facility.

4.5.2 Discussion

The proposed Project would potentially be new sources of odors. The proposed compost and bioenergy facilities are new facilities that have no odor history. The nearest sensitive receptor to Project site is a residence approximately 0.5 miles to the west of the compost facility and more than a mile from the bioenergy facility.

The CASP with a biofilter layer will reduce VOC and NH_3 emissions from the composting activity by at least 81% and 45%, respectively, compared to uncontrolled decomposition (e.g., in the landfill)(SJVAPCD 2013). These are the primary malodorous compounds emitted from composting activities.

The composting facility will prepare and maintain a site-specific OIMP as required by 14 CCR Section 17863.4 to reduce potential odors. The OIMP will be designed to provide guidance to on-site operations personnel by describing, at a minimum, the following items:

- An odor monitoring and data collection protocol for on-site odor sources, which describes the proximity of possible odor receptors and a method for assessing odor impacts at the locations of the possible odor receptors;
- A description of meteorological conditions affecting migration of odors and/or transport of odor-causing material off-site, including seasonal variations that affect wind velocity and direction;
- A complaint response and recordkeeping protocol;

- A description of design considerations and/or projected ranges of optimal operation to be employed in minimizing odor, including method and degree of aeration, moisture content of materials, feedstock characteristics, airborne emission production, process water distribution, pad and site drainage and permeability, equipment reliability, personnel training, weather event impacts, utility service interruptions, and site-specific concerns as applicable; and
- A description of operating procedures for minimizing odor, including aeration, moisture management, feedstock quality, drainage controls, pad maintenance, wastewater pond controls, storage practices (e.g., storage time and pile geometry), contingency plans (i.e., equipment, water, power, and personnel), biofiltration, and tarping as applicable.

Based on the design features that will be implemented at the compost facility (i.e., aeration, biofilter layer, implementation of the OIMP, limited storage duration for unprocessed materials), the distance to sensitive receptor, and the low population density in the vicinity of the Project, the composting facility is not expected to create objectionable odors affecting a substantial number of people.

The bioenergy facility would use wood waste as the feedstock, emit small amounts of VOC from the wood dryer, and combust the produced syngas in IC engines. Wood waste is not known to produce objectionable odors. The VOC emissions from the dryer are expected to contain naturally occurring hydrocarbons from the wood. The byproducts from the combustion of syngas in the engines are not expected to cause objectionable odors. Given the relatively low levels of emissions, the distance to a sensitive receptor of over 1 mile, and the low population density, objectionable odors are not expected to impact a significant number of people.

4.5.3 Level of Significance

The proposed Project will reduce odorous emissions from the landfill, and thus will not have an adverse impact to a substantial number of people due to changes in landfill operation. Based on the odor minimization design features that will be implemented at the compost facility and the distance to sensitive receptors, the Project is not expected to create objectionable odors affecting a substantial number of people. Given the relatively low levels of emissions from the bioenergy facility and the distance to sensitive receptors, objectionable odors are not expected to impact a substantial number of people.

Therefore, the proposed Project will have a less than significant impact related to emissions which cause odors.

4.5.4 Proposed Mitigation

The OIMP is required by regulation and mitigation beyond the OIMP is not needed.

5.0 GREENHOUSE GAS ANALYSIS

An analysis of GHG emissions from the proposed Project and the consistency of the Project with relevant plans and programs that are applicable to the project area are presented in this section. The impact assessment is based upon a review of relevant literature and technical reports that include, but are not limited to, information and guidelines from Tulare County, CARB, EPA, and SJVAPCD, as well as the applicable provisions of CEQA.

5.1 Environmental Setting

GHG emissions and climate change are cumulative global issues. CARB and EPA regulate GHG emissions within the State of California and the United States, respectively. While CARB has the primary regulatory responsibility within California for GHG emissions, local agencies also adopt policies for GHG emissions reduction.

Global climate change is a change in the average weather of the Earth, measured by wind patterns, storms, precipitation, and temperature. Although historical records show that dramatic fluctuations in temperature have occurred in the past, some data indicate that the current temperature record differs from previous climate changes in both rate and magnitude (IPCC 2007).

The California legislature concluded that global climate change poses significant adverse effects to the environment (AB 32, the California Global Warming Solutions Act of 2006). In addition, the global scientific community has expressed a high confidence that the recent, observed climate change is predominately man-made and that climate change could lead to adverse changes around the globe (IPCC 2007). Consequently, the following sections analyze potential GHG emissions that may occur while implementing the proposed Project.

5.1.1 Greenhouse Gases

Many chemical compounds found in the Earth's atmosphere act as GHGs. GHGs allow sunlight to enter the atmosphere freely. When sunlight strikes the Earth's surface, some of it is reflected back towards space as infrared radiation (heat). GHGs absorb this infrared radiation and trap the heat in the atmosphere. In the absence of GHGs, the amount of energy sent from the sun to the Earth's surface would be about the same as the amount of energy radiated back into space, leaving the temperature of the Earth's surface roughly constant. With GHGs, the amount of heat retained in the atmosphere increases.

Many gases exhibit these "greenhouse" properties. Some of them occur in nature [e.g., water vapor, carbon dioxide (CO_2), methane (CH_4), and N_2O], while others are exclusively human-made (like gases used as aerosol propellants). The regulated GHGs are CO_2, CH_4, N_2O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

The principal GHGs resulting from human activity that enter and accumulate in the atmosphere are described below:

- **Carbon dioxide** (CO_2) is an odorless, colorless gas. CO_2 has a 100-year global warming potential (GWP)[4] of 1. Natural sources include decomposition of organic

[4] GWP is a relative measure, compared to CO_2, of a compound's residence time in the atmosphere and ability to warm the planet. Mass emissions of GHGs are converted into carbon dioxide equivalent (CO_2e) emissions for ease of

matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanoes. Man-made sources of CO_2 include burning fuels, such as coal, oil, natural gas, and wood. In 2007, the concentration of CO_2 in the atmosphere was approximately 379 ppm; some say that concentrations may increase to 1,130 CO_2e ppm by 2100 as a direct result of man-made sources (IPCC 2007). Some predict that this will result in an average global temperature rise of at least 7.2°F by 2100 (IPCC 2007).

- **Methane** (CH_4) is a gas, is the main component of natural gas, and has a GWP of approximately 21.[5] Decaying organic matter in forests and oceans is a natural source of methane. Sources of methane resulting from human activities include landfills, fermentation of manure, and cattle. Geological deposits known as natural gas fields contain methane, which is extracted for fuel but is often emitted as fugitive emissions from leaking piping components (e.g., valves, flanges, compressor seals).
- **Nitrous oxide** (N_2O) is a colorless gas with a GWP of approximately 310. N_2O is produced by microbial processes in soil and water, including reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (e.g., nylon production, nitric acid production) emit N_2O. Nitrous oxide is used in rocket engines, as an aerosol spray propellant, and in race cars. During combustion, NO_x (NO and NO_2) is produced as a criteria pollutant; however, very small quantities of N_2O may be formed during fuel combustion by the reaction of nitrogen and oxygen.
- **Chlorofluorocarbons (CFCs) and Hydrofluorocarbons (HFCs)** are synthetic compounds formed by replacing all or some hydrogen atoms in methane or ethane with chlorine or fluorine atoms. HFCs have a GWP between 140 and 11,700, with HFC-152a at the low end and HFC-23 at the higher end. CFCs are nontoxic, nonflammable, insoluble in water, and chemically nonreactive in the troposphere (the level of air at the Earth's surface). CFCs are used as refrigerants, aerosol propellants, and cleaning solvents. However, CFCs destroy stratospheric ozone, and the Montreal Protocol stopped their production in the 1990s.
- **Sulfur hexafluoride** (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. Its GWP of 23,900 is the highest of any gas. SF_6 is used for insulation in electric power transmission and distribution equipment, in the

comparison. CO_2e is a quantity that describes, for a given mixture and amount of GHGs, the amount of CO_2 that would have the same GWP when measured over a specified timescale (generally 100 years). It is also a measure for comparing CO_2 with other GHGs (which generally have a higher GWP), based on the amount of those other gases multiplied by the appropriate GWP factor, commonly expressed as metric tons of CO_2e (MT CO_2e). CO_2e is calculated by multiplying the metric tons of each greenhouse gas by the appropriate GWP.

[5] As a further complication, the GWP values have been revised as further scientific data are collected. The values presented here are from the IPCC Second Annual Report (SAR). GWP values were updated in the Fourth Annual Report (AR4) and again in the Fifth Annual Report (AR5). Although GWPs have been updated by IPCC, the SAR values are used herein to be consistent with CARB's mandatory GHG reporting protocol, which still uses the SAR values.

magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

5.1.2 GHG Emission Inventories

GHG emissions are generally classified as either direct or indirect. Direct emissions are associated with the production of GHG emissions at the project site. These include the combustion of fuel in equipment and vehicles, and fugitive emissions from landfills. Indirect emissions include the emissions from vehicles delivering materials and equipment to the site and the use of electricity. Electricity contributes to GHG emissions because fossil fuel combustion is used to generate electricity.

5.1.2.1 National Greenhouse Gas Emissions Inventory

Fossil fuel combustion is responsible for the vast majority of the United States' GHG emissions, and CO_2 is the primary GHG from fuel combustion. In 2011, total U.S. GHG emissions were 6,702 million metric tons (MMT) CO_2e. GHG emissions peaked at 7,263 MMT in 2007. In 2011, approximately 26% of GHG emissions were associated with transportation, approximately 32% were associated with electricity generation, and 12% were associated with industrial activity. By 2019, GHG emissions dropped to 6,558 MMT CO_2e, or 5,769 MMT CO_2e after considering sequestration, with 29% associated with transportation, 25% associated with electricity generation, and 23% associated with industrial activity.

5.1.2.2 Statewide Greenhouse Gas Emissions

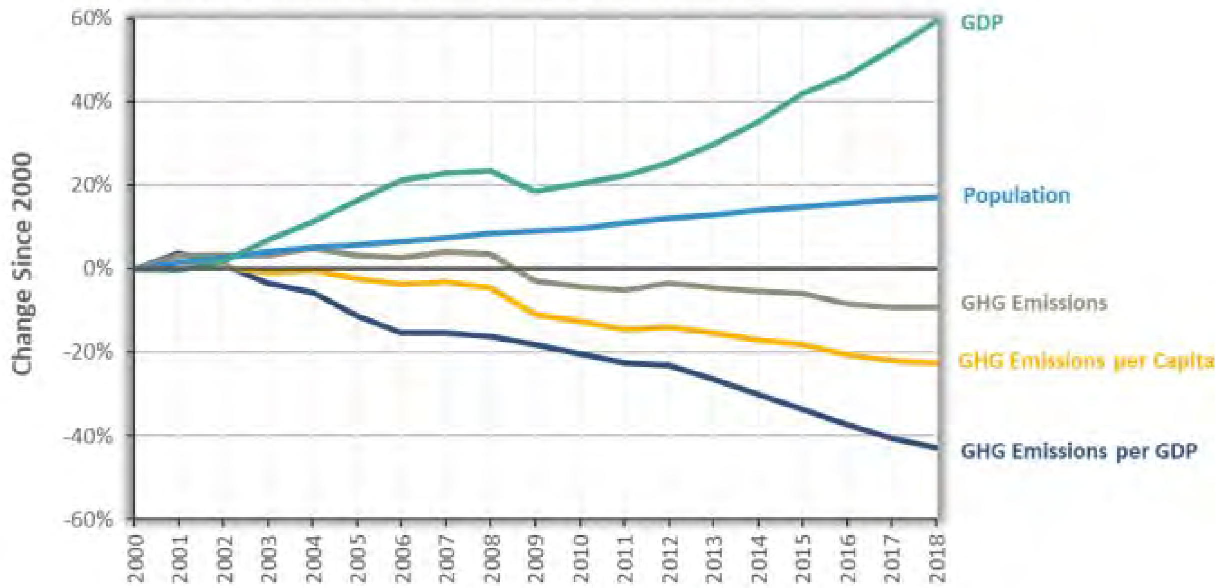
With a population of over 39 million, California is the most populous state in the United States. In 2010, California produced 452 MMT CO_2e of GHG emissions (CARB 2013a). In 2018, GHG emissions dropped to 425 MMT CO_2e. Figure 5-1 shows the California GHG emissions trends, and Figure 5-2 shows the breakdown of California GHG emissions from 2000 to 2018. The transportation sector is the single largest contributor of California's GHG emissions, producing 40% of the State's total GHG emissions, with industrial activity the second largest contributor at 21%, followed by electricity generation at 15%.

5.1.3 Impacts of GHG Emissions

In the Findings and Declarations for AB 32, the legislature found that: "The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to the marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other health-related problems."

Warming of the climate is evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level. The linear warming trend over the 50 years from 1956 to 2005 (0.13°C per decade) is nearly twice that for the 100 years from 1906 to 2005. Global average sea level rose at an average rate of 1.8 millimeters per year from 1961 to 2003 and at an average rate of about 3.1 mm per year from 1993 to 2003 (IPCC 2007).

Figure 2a. Change in California GDP, Population, and GHG Emissions Since 2000



Metric	Associated 2018 Value
GDP	2.7 Trillion (2012 $)
Population	39.8 Million
GHG Emissions	425.3 Million Tonnes CO_2e
GHG Emissions per Capita	10.7 Tonnes CO_2e per Capita
GHG Emissions per GDP	156 Tonnes CO_2e per Million $

Figure 2b. California Total and Per Capita GHG Emissions

Figure 2c. Carbon Intensity of California's Economy

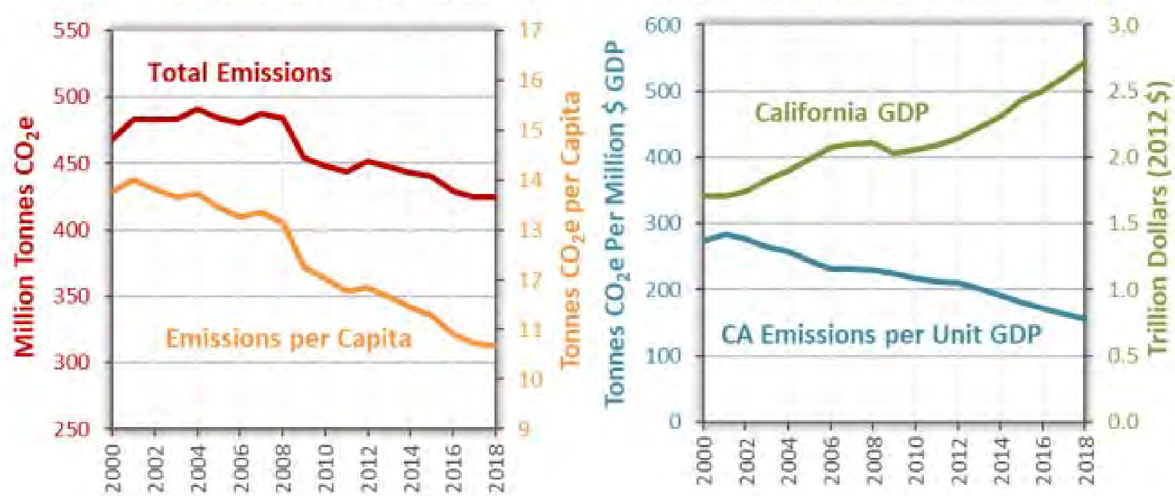


Figure 5-1: California Statewide GHG Emission Trends

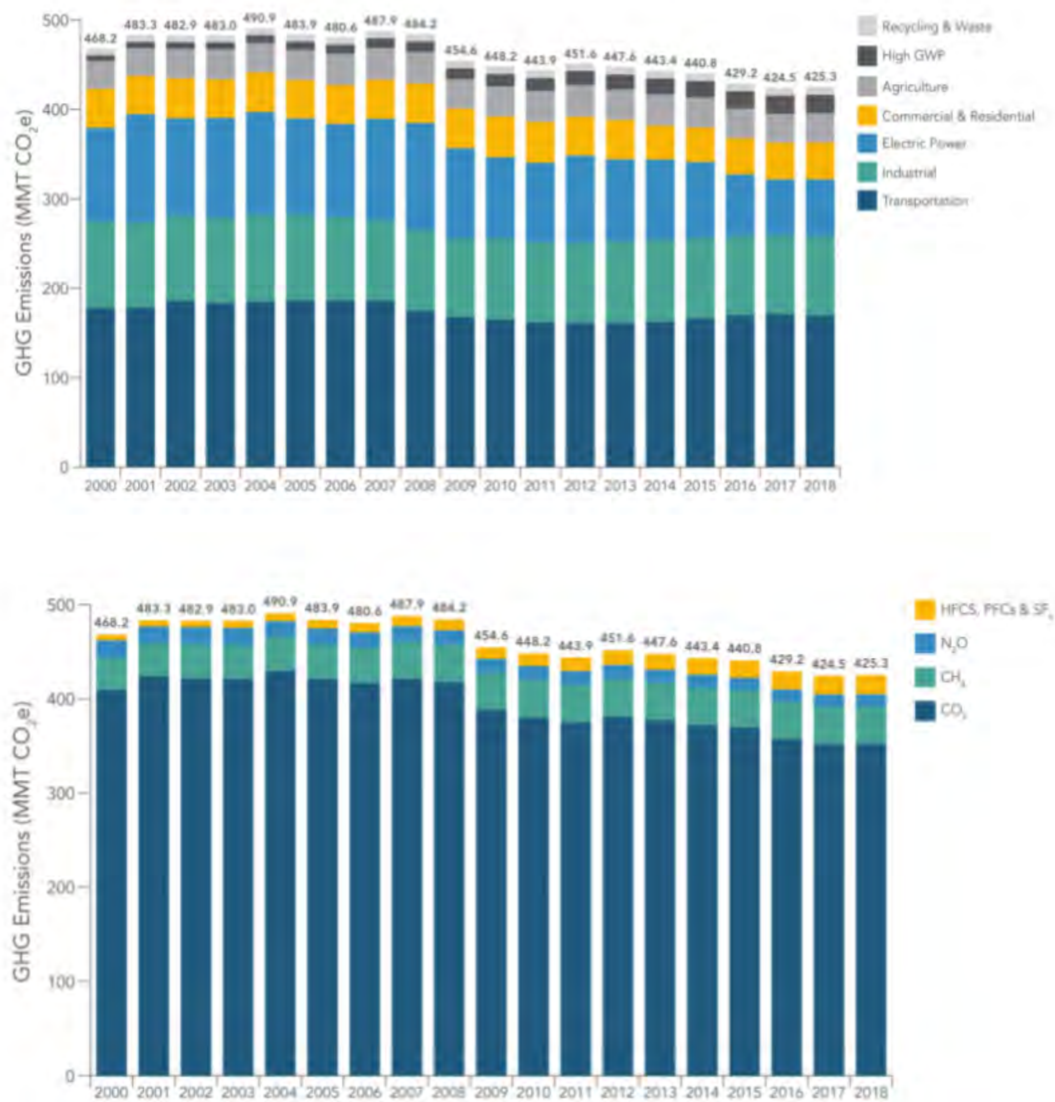


Figure 5-2: California GHG Emissions by Sector and Gas

The Intergovernmental Panel on Climate Change (IPCC) studies (2007) indicate that "In order to stabilize the concentration of GHGs in the atmosphere, emissions would need to peak and decline thereafter. The lower the stabilization level, the more quickly this peak and decline would need to occur." The studies also found that stabilization of atmospheric CO_2 concentrations at less than 450 ppm would limit temperature rise to less than 3.6°F by the year 2100 and would require global anthropogenic CO_2 emissions to drop below the year 1990 levels within a few decades (by 2020). If GHG emissions and atmospheric CO_2 levels were kept to this "Category I" level (producing increases in global average temperature of less than 1.8-5.4°F above 1980-1999 levels), impacts to gross domestic product (GDP) are projected to "produce market benefits in some places and sectors while, at the same time, imposing costs in other places and sectors" (IPCC 2007). Levels of CO_2 ranging above 700 ppm with corresponding temperature increases of 7°F could cause a reduction in global GDP of more than 5%, with regional losses substantially higher. Therefore, stabilizing GHG emission levels at 1990 levels over the next two decades would reduce the impacts of climate change to less than significant levels that would produce nominal changes in global average GDP.

Observed and anticipated effects associated with climate change in California, as reported by the California Climate Change Center (California Climate Change Center, 2012), include the following:

- Average statewide temperatures increased by about 1.7°F from 1895 to 2011, with the greatest warming in the Sierra Nevada. By 2050, average statewide temperatures are expected to increase by 2.7°F above 2000 averages – a three-fold increase in the warming rate over the past century. By 2100, statewide average temperatures could increase by 4.1 to 8.6°F, depending on emission levels.
- Earlier snowmelt, higher temperatures, and longer dry periods over a protracted fire season will directly increase wildfire risk. There is an expected long-term increase in fire occurrence associated with a higher GHG emissions scenario, ranging from 58 to 128% above historical levels by 2085. Under the same higher GHG emissions scenario, the estimated burned areas will increase between 57 and 169%, depending on location.
- Increased wildfire occurrence and burned areas, with associated increases in particulate pollution, could offset improvements in particulate and ozone concentrations.
- California's water management challenges could be exacerbated by increasing demand from a growing population, rising temperatures, earlier snowmelt and runoff, and faster-than-historical sea-level rise threatening aging coastal water infrastructure and levees in the Sacramento-San Joaquin Delta. One study shows that by the latter half of the 21st century, "critically dry" water years could occur 8% more frequently in the Sacramento Valley and 32% more often in the San Joaquin Valley, as compared to the period from 1951 to 2000. During such critically dry years, it may be nearly impossible to satisfy the State's water needs, including those for agricultural and environmental purposes.
- Increased statewide average temperatures and more frequent extreme heat events, combined with new residential development, will drive up electricity demand for cooling during the summertime. About 15% of electrical demand is satisfied by hydropower, which is a premium asset during peak-demand summer months. Hydropower generation is already declining and is expected to decrease more substantially because of reduced snowpack, earlier runoff, and higher evaporation rates due to climate change.
- Electrical transmission lines lose 7 to 8% of transmitting capacity as temperatures rise. Therefore, more electricity will need to be generated to offset the increased electrical transmission line losses. Furthermore, key electrical transmission corridors are vulnerable to increased frequency and severity of wildfires associated with climate change. One study shows a 40% increase in the probability of wildfire

exposure for some major transmission lines, including lines bringing hydropower from the Pacific Northwest into California during peak demand periods.

- The sea level along California's coastline rose about 7 inches during the last century, and this rate is expected to accelerate considerably in the future. Assuming that California's sea level changes continue to track global trends, sea levels along the State's coastlines could increase by 10 to 18 inches by 2050 and by 31 to 55 inches by the end of the 21st century (as compared to 2000 levels). This will greatly increase the potential for loss of life and property during periodic storm and flood events. Moreover, critical infrastructure (schools, roads, hospitals, emergency facilities, wastewater treatment plants, airports, ports, and energy facilities) located along the coastline will also be at increased risk of damage.
- Findings from one study show that climate conditions are changing so rapidly that some vegetation cannot keep pace. Some climates that currently exist (e.g., alpine climates) could disappear entirely, while other regional climates (e.g., desert climates) could expand considerably. This would result in some species losing their habitats and other species significantly expanding theirs.
- Climate change is expected to exacerbate stresses on California's agricultural sector. Direct effects, such as changes in temperature and water availability, will affect crop yield and availability, making the sector highly sensitive to climate change. Indirect effects will also take a toll, such as possible further declines in pollinators and increases in pests and disease.

Global warming and climate change have received substantial public attention for more than 20 years. The United States Global Change Research Program was established by the Global Change Research Act of 1990 to enhance the understanding of natural and human-induced changes in the Earth's global environmental system, to monitor, understand, and predict global change, and to provide a sound scientific basis for national and international decision-making. Even so, analytical tools have not been developed to determine the effect on worldwide global warming from a particular increase in GHG emissions, or the resulting effects on climate change in a particular locale. The scientific tools needed to evaluate the impacts that a specific project may have on the environment have also not been developed.

5.2 Regulatory Setting

5.2.1 Federal Regulations

The EPA has found that six GHGs, taken in combination, endanger the public health and welfare of current and future generations. The EPA also found that the combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that endangers public health and welfare under CAA section 202(a). These Findings were based on careful consideration of the full weight of scientific evidence and a thorough review of numerous public comments received.

In October 2012, EPA and the National Highway Traffic Safety Administration, on behalf of the U.S. Department of Transportation, issued final rules to further reduce GHG emissions and improve corporate average fuel economy standards for light-duty vehicles for model years 2017 and beyond (77 FR 62624). These rules would increase the fuel economy to 54.5 miles per gallon, limiting vehicle emissions to 163 grams of CO_2 per mile for the fleet of cars and light-duty trucks by model year 2025 (77 FR 62630). However, on April 2, 2018, the EPA administrator announced a final determination that the current standards are not appropriate and should be revised. It is not yet known what revisions will be adopted or when they will be implemented.

Specific GHG regulations that the EPA has adopted to date are as follows.

5.2.1.1 40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule.

Part 98 requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 MT CO_2e per year. The CO_2 emissions from landfills and composting are considered biogenic and are not counted toward facility GHG emissions according to accepted protocol; however, the combustion of methane in the landfill flare system will generate CO_2 that must be quantified toward the GHG reporting threshold.

5.2.1.2 40 CFR Part 52. Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule.

In 2010, the EPA issued the Prevention of Significant Deterioration (PSD) and Title V Greenhouse Gas Tailoring Rule (EPA 2011). This rule set mass emissions-based permitting criteria specifically for CO_2e emissions that define when permits under the NSR, PSD, and Title V Operating Permit programs are required for new and existing industrial facilities. This is known as Steps 1 and 2 of the Tailoring Rule for PSD and Title V permitting.

Step 3 of the GHG Tailoring Rule was issued by the EPA in 2012, which revised the regulations to require a source that emits or has the potential to emit levels of CO_2e that exceed established mass emissions criteria [i.e., 100,000 tons per year (90,718 MT per year) of CO_2e], but that has minor source emissions of all other regulated pollutants, to apply for an operating permit.

On June 23, 2014, the U.S. Supreme Court issued its decision in Utility Air Regulatory Group (UARG) v. EPA, 134 S. Ct. 2427 (2014). The Court held that EPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source required to obtain a PSD or Title V permit. The Court also held that PSD permits that are otherwise required (based on emissions of other pollutants) may continue to require limitations on GHG emissions based on the application of BACT. In accordance with the Supreme Court decision, on April 10, 2015, the D.C. Circuit issued an amended judgment in Coalition for Responsible Regulation, Inc. v. EPA, Nos. 09-1322, 10-073, 10-1092 and 10-1167 (D.C. Cir. April 10, 2015), which, among other things, vacated the PSD and Title V regulations under review in that case to the extent that they require a stationary source to obtain a PSD or Title V permit solely because the source emits or has the potential to emit GHGs above the applicable major source thresholds.

5.2.2 California Regulations

California has made the reduction of GHG emissions a priority, and reducing GHG emissions in California has been a focus of the State government for approximately two decades.

5.2.2.1 Assembly Bill 32

AB 32, also known as the California Global Warming Solutions Act of 2006, was established in 2006 to mandate the quantification and reduction of GHGs to 1990 levels by 2020. The law establishes periodic targets for reductions and requires certain facilities to report emissions of GHGs annually. The bill also reserves the ability to reduce emissions targets for certain sectors that contribute the most to emissions of GHGs, including the transportation sector.

One of the AB 32 requirements is to prepare a Scoping Plan that outlines the main strategies California will implement to achieve the legislated GHG emission targets. California's 2017 Climate Change Scoping Plan, prepared by CARB, identifies the reductions needed by key sectors (e.g., transportation, industry, electricity generation, agriculture, waste management and water). Waste management is listed as one of six Key Sectors contributing to the State's total GHG emissions, mainly from methane generation.

Reporting of GHG emissions by major sources is required by AB 32. The GHG Mandatory Reporting Regulation (MRR) is applicable to electricity generators, industrial facilities, fuel suppliers, and electricity importers. A summary of GHG emissions data reported under the MRR is made public each year, and these data are used by the Cap-and-Trade program and included in the California Greenhouse Gas Inventory.

All GHG emissions data reports must comply with the regulatory requirements and be submitted via the California electronic greenhouse gas reporting tool (e-GGRT). Reporting guidance documents and training materials are provided to clarify rule applicability and assist reporters in complying with the regulation. CARB implements and oversees a third-party verification program to support mandatory GHG reporting. All GHG reports subject to the Cap-and-Trade program must be independently verified by CARB-accredited verification bodies and verifiers.

5.2.2.2 Cap-and-Trade Program (17 CCR 95800 to 96022)

On October 20, 2011, CARB approved the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation (Cap-and-Trade Program) as part of the AB 32 implementation measures.

Cap-and-Trade is a market-based regulation that is designed to reduce GHGs from multiple sources. It is viewed as an environmentally effective and economically efficient response to climate change. Cap-and-Trade sets a firm limit, or "cap", on GHG emissions from all sources in the Cap-and-Trade program and minimizes the compliance costs of achieving AB 32 goals. The initial cap was established in 2013 for the electricity generating sector and any large industrial source emitting more than 25,000 MT CO_2e per year. Beginning in 2015, the cap was expanded to include GHG emissions from the combustion of transportation fuels and natural gas. The cap declines approximately 3% each year through 2020. Revisions to the regulation require the cap to decline approximately 5% starting in 2021 through 2030. In the market, a price on carbon is established for GHGs. Trading and market forces create incentives to reduce GHGs below allowable levels through investments in technological innovation and clean technologies.

5.2.2.3 Assembly Bill 1493

On July 22, 2002, Governor Gray Davis signed AB 1493, also known as the Pavley Regulations or the Clean Car Standards. AB 1493 required the State to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of GHG emissions emitted by passenger vehicles and light-duty trucks. Subsequent regulations were adopted by CARB in September 2004.

The regulations were threatened by automaker lawsuits and were stalled by the EPA's initial denial to allow California to implement GHG standards for passenger vehicles. The EPA later granted California the authority to implement GHG emission reduction standards for new passenger cars, pickup trucks, and sport utility vehicles on June 30, 2009. On September 24, 2009, CARB adopted amendments to the Pavley regulations that reduce GHG emissions in new passenger vehicles from 2009 through 2016.

5.2.2.4 Senate Bill 605, Senate Bill 1383, and Assembly Bill 1826

SB 605 (Chapter 523, Statutes of 2014) requires CARB to develop a plan to reduce emissions of short-lived climate pollutants, such as methane. AB 1826 (Chapter 727, Statutes of 2014) requires businesses to recycle their organic waste beginning in 2016. SB 1383 (Chapter 249, Statutes of 2016) requires CARB to approve and implement a plan by January 2018 to achieve these reductions. SB 1383 also sets a target for reduction of methane emissions to 40% below 2013 levels by 2030. Pursuant to SB 605 and SB 1383, CARB subsequently developed the Short-lived Climate Pollutant Reduction Strategy, adopted in March 2017. As part of this strategy, CalRecycle, in consultation with CARB, is developing regulations to reduce the level of statewide disposal of organic waste to 50% of 2014 levels by 2020 and 75% of 2014 levels by 2025. In addition, by 2025, not less than 20% of currently disposed edible food must be recovered for human consumption. CalRecycle adopted these regulations in 2019 to take effect on or after January 1, 2022. The mandated diversion of recyclables and organic material from landfills will require improvements to existing infrastructure to handle these materials. The diversion mandates will result in an increase in compost production and anaerobic digestion of organic material throughout California. The proposed Project will provide composting capacity needed to achieve the mandatory diversion goals.

5.2.2.5 Senate Bill 32 of 2016

In September 2016, Governor Brown signed SB 32, which mandated a GHG emissions reduction target of 40% below 1990 emission levels by 2030. This effectively extended the efforts already in effect associated with AB 32 implementation.

5.2.2.6 Assembly Bills 398 and 617

On July 25, 2017, AB 398 was approved, which extended the Cap-and-Trade program through 2030 to support SB 32 mandated GHG emissions reduction of 40% by 2030. In conjunction with AB 398, AB 617 was approved, which makes GHG and TAC emissions data available to the public via the internet, along with plans to improve monitoring of criteria air pollutants and TACs.

5.2.2.7 Executive Order B-55-18

On September 10, 2018, Governor Brown signed Executive Order (EO) B-55-18, which establishes a statewide goal to "achieve carbon neutrality as soon as possible, and no later than 2045, and maintain and achieve negative emissions thereafter." EOs are not legally binding and depend on legislative approval for implementation. EO B-55-18 establishes the intent to extend the efforts already in effect associated with AB 32 implementation, as documented in the 2017 Climate Change Scoping Plan, which has a timeline for GHG reductions spanning to 2050.

5.2.3 Local Plans and Requirements

5.2.3.1 Senate Bill 375

In addition to regulations that address tailpipe emissions and transportation fuels, the State legislature has passed regulations to address the amount of driving by on-road vehicles. Since the passage of SB 375 in 2008, CARB has required metropolitan planning organizations (MPOs) to adopt plans showing a reduction in GHG emissions from passenger cars and light-duty trucks in their respective regions for 2020 and 2035. These plans link land use and housing allocation to transportation planning and related mobile source emissions.

Tulare County's primary role is to take actions that support the State's strategy, such as ensuring that new development is consistent with the County's Sustainable Communities Strategy implementing SB 375 and facilitating new renewable energy projects. Tulare County's strategy is consistent with General Plan policies that encourage new development in existing communities and commercial corridors at higher than historic densities (Tulare County 2018).

5.2.3.2 Tulare County Climate Action Plan

The County of Tulare adopted the Tulare County Climate Action Plan (CAP) in August 2012. The CAP includes provisions for an update when CARB adopts a Scoping Plan Update that provides post-2020 targets for the State and an updated strategy for achieving a 2030 target. Governor Brown signed SB 32 on September 8, 2016, which contains the new 2030 target. CARB's 2017 Scoping Plan Update for the SB 32 2030 targets was adopted on December 14, 2017, providing new emissions inventories and a comprehensive strategy for achieving the 2030 target (CARB 2017a). With the adoption of the 2017 Scoping Plan, the County proceeded with the 2018 CAP Update.

The 2018 CAP Update incorporates new baseline and future year inventories to reflect the latest information and updates the County's strategy to address the SB 32 2030 target. The 2030 target requires the State to reduce emissions to 40% below 1990 levels from the 2017 Scoping Plan and County data. The CAP identifies the County's fair share of reductions required to maintain consistency with the State target.

The County has developed detailed transportation plans to achieve the SB 375 goals, which rely on the AB 32 Scoping Plan measures for reductions from landfills.

5.2.3.3 SJVACPCD Climate Change Action Plan

In August 2008, the SJVAPCD adopted its Climate Change Action Plan (CCAP). The CCAP directs the District to develop guidance to assist CEQA lead agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project GHG emissions on global climate change (SJVAPCD 2008). In December 2009, the SJVAPCD Board approved two guidance documents:

- Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA ("Land Use GHG Guidance") (SJVAPCD 2009a); and
- District Policy: Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency (SJVAPCD 2009b).

These policies provide that "Projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the Project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions" (SJVAPCD 2009b). Under the guidance, projects implementing Best Performance Standards (BPS) would have less than significant impacts for GHG emissions, as would projects that reduce or mitigate their GHG emissions by at least 29% as compared to business as usual (BAU).

On June 25, 2014, the SJVAPCD issued a guidance document titled "CEQA Determinations of Significance for Projects Subject to CARB's GHG Cap-and-Trade Regulation" (Policy APR-2025; "CEQA Cap-and-Trade Policy") (SJVAPCD 2014). This policy is to be followed when the District is "providing technical guidance to lead agencies and the public regarding significance of project specific GHG emissions." The policy states the District's conclusion that "GHG emission increases subject to CARB's Cap-and-Trade regulation would have a less than significant individual and cumulative impact on global climate change." Noting that GHG emissions from combustion of transportation fuels are covered under the Cap-and-Trade program beginning in 2015, the policy also states that "GHG emission increases caused by fuel use (other than jet fuels) are determined to have a less than significant impact on global climate change under CEQA."

Under the District's 2014 policy for stationary source impacts, "the District's determination of significance of project-specific GHG emissions is founded on the principal that projects with GHG emission reductions consistent with AB 32 emission reduction targets are considered to have a less than significant impact on global climate change" (SJVAPCD 2014). This policy employs a tiered approach to determining the CEQA significance of a project's GHG emissions. The first level is compliance with an approved GHG emission reduction plan that is specified in law and supported by a CEQA-compliant environmental review document. The SJVAPCD has determined that GHG emissions covered under the Cap-and-Trade program cannot constitute significant increases under CEQA for two reasons. First, the Cap-and-Trade program is an approved GHG mitigation plan that meets the requirements set forth in the District's policy on stationary source GHG emission impacts (SJVAPCD 2014, pages 4-5). Second, any increase in GHG emissions from affected sectors must be accounted for under the statewide GHG emissions cap in the Cap-and-Trade program, and that cap decreases over time. As a result, the Cap-and-Trade program will fully mitigate any project emission increases for emissions included under the cap (SJVAPCD 2014).

Where an approved GHG emission reduction program is not in place, or the Project will not comply with it, the guidance documents recommend the use of performance-based standards, otherwise known as BPS, as a basis for assessing the significance of Project GHG emissions on global climate change under CEQA. BPS consist of established specifications or Project design elements that are used as a method of determining the significance of Project-specific GHG emissions impacts. BPS are defined as the most effective achieved-in-practice means of reducing or limiting GHG emissions from a GHG emissions source. BPS for stationary source projects include equipment type, equipment design, and operational and maintenance practices for the identified service, operation, or emissions unit class or category (SJVAPCD 2009b).

The District recommends use of BPS for assessing climate change impacts to streamline the process of determining significance under CEQA. BPS are not intended as a required emission reduction measure. Under SJVAPCD guidance, projects implementing BPS would be determined to have a less than cumulatively significant impact on global climate change.

Projects that do not comply with an approved GHG emission reduction plan or use BPS must demonstrate a 29% reduction in GHG emissions from BAU in order to be determined to have a less than cumulatively significant impact on global climate change. BAU is determined by multiplying 2002-2004 emission factors by the activity expected to occur in 2020. The guidance does not limit a Lead Agency's authority to establish its own process and guidance for determining significance of Project-related impacts on global climate change (SJVAPCD 2009a).

5.3 GHG Emissions

GHG emissions have a global impact because emissions from one location could affect the entire planet, and they are not limited to local impacts. Therefore, total Project GHG emissions are included in the analysis (i.e., on-site plus off-site).

5.3.1 Landfill Diversion Emissions

The diversion of organic waste from the landfill to composting and bioenergy production will reduce the quantity of organic matter disposed of in the landfill. Organic matter decomposing in landfills produces GHG emissions; thus, a reduction in organic waste disposal will avoid the emissions of these pollutants.

Direct CO_2 emissions from composting and bioenergy production are biogenic emissions, which were excluded from the GHG inventory because biogenic CO_2 is considered part of the natural carbon cycle and does not contribute to global warming. Further, since the bioenergy facility will generate electricity from biogenic fuel sources, the electricity produced will not contribute to climate change. Thus, any electricity generated on-site and consumed by either the bioenergy facility or compost facility was excluded from this analysis.

GHG emissions associated with the diversion of organic material from landfill to composting and bioenergy production are estimated using EPA's Waste Reduction Model

(WARM); the results are summarized in Table 5-1. BAU emissions from the landfill are negative, i.e., a reduction in GHG emissions, which may be counterintuitive, as landfill diversion is a recognized GHG reduction strategy. This can be attributed to two factors. First, the landfill operates a landfill gas (LFG) collection system with genset engines and a flare, which convert the LFG to CO_2. Because the GHGs generated in the landfill derive from the decomposition of organic matter, the CO_2 is considered biogenic and is not counted. It is only the methane not collected by the LFG collection system that is counted towards the landfill emissions inventory.[6] Second, a portion of the organic waste disposed in a landfill does not decompose and is sequestered. Comparing the quantity of carbon sequestered to the quantity of carbon released as methane yields a small negative number. By comparison, diverting organic waste to composting and bioenergy production yields a larger negative number – a net reduction in GHG emissions compared to landfilling. A complete discussion and emission calculations are provided in Appendix A.

Table 5-1: Summary of Baseline to Project GHG Emissions

Parameter	Baseline (Business as Usual)	Proposed Composting	Proposed Bioenergy
Disposal Quantity	225,000 TPY	200,000 TPY	25,000 TPY
GHG Emissions	(3,977)	(17,378)	

5.3.2 Construction GHG Emissions

The construction emissions analysis was prepared using CalEEMod version 2016.3.2 (CAPCOA 2019), the official statewide land use computer model designed to provide a uniform platform for estimating potential criteria pollutant and GHG emissions associated with construction of land use projects. The model quantifies direct emissions from construction (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The mobile source emission factors used in the model include the Pavley standards and Low Carbon Fuel Standards. The model also identifies project design features, regulatory measures, and mitigation measures to reduce GHG emissions, along with calculating the benefits achieved from the selected measures.

Construction GHG emissions are summarized in Table 5-2. A complete discussion and emission calculations are provided in Appendix B.

Table 5-2: Construction Greenhouse Gas Emissions Summary

GHG	Emissions (MT)			
	Compost Facility Phase 1[1]	Compost Facility Phase 2	Compost Facility Phase 3	Bioenergy Facility
CO_2	456	97	97	171
CH_4	0.1	0.02	0.02	0.0
N_2O	0.0	0.0	0.0	0.0
CO_2e	458	98	98	172

[6] A properly-designed LFG collection system typically collects 75% of the methane produced in the landfill.

Note:

1. As noted elsewhere, the Project will be implemented in either three phases (Phase 1 at 100,000 TPY, Phases 2 and 3 each at 50,000 TPY), or in four phases (each phase at 50,000 TPY). Three phases are discussed herein, as construction impacts are higher if Phase 1 has 100,000 TPY capacity than if it has 50,000 TPY capacity.

5.3.3 Operational Mobile Source Emissions

Emissions estimates have been prepared for the mobile sources required to operate the proposed composting and bioenergy facilities. The mobile sources include employee travel to and from the facility, support vehicle traffic, heavy equipment operation needed to move feedstock into the processing units, finished compost delivery vehicle traffic, and biochar delivery vehicle traffic. As noted elsewhere, because the compost and bioenergy facilities are co-located at the landfill, there will be no new emissions associated with feedstock transport to the compost or bioenergy facilities, so mobile source emissions associated with waste transport to the facility are not included in the Project emission inventory.

Emissions estimates have been prepared for on-road and off-road vehicle and equipment exhaust emissions. Operational mobile source emissions are summarized in Table 5-3. A complete discussion and emission calculations are provided in Appendix C.

Table 5-3: Summary of Mobile Source GHG Emissions

Activity	CO_2 (MT/yr)	CH_4 (MT/yr)	N_2O (MT/yr)	CO_2e (MT/yr)
On-road Vehicle Exhaust	1,425	0.0	0.2	1,489
Off-road Equipment Exhaust	1,158	47	9	1,162
Total	2,583	47	9	2,651

5.3.4 Summary of GHG Emissions

GHG emissions are summarized in Table 5-4. As shown, the proposed Project results in a net decrease in GHG emissions of over 10,700,000 MT CO_2e per year.

Table 5-4: GHG Emissions – Total Project

Activity	CO_2 (MT/yr)	CH_4 (MT/yr)	N_2O (MT/yr)	CO_2e (MT/yr)
Construction (amortized over 30 years)	27	0.0	0.0	27
Mobile Sources	2,583	47	9	2651
Compost Facility	–	–	–	(17,378)
Bioenergy Facility	–	–	–	
Subtotal New Sources	*2,583*	*47*	*9*	*(14,700)*
Baseline – Landfill	–	–	–	(3,977)
Total	–	–	–	**(10,723)**

5.4 Project Impacts

Climate change impacts are inherently global and cumulative, and not project specific. The SJVAPCD's GAMAQI observes:

"It is widely recognized that no single project could generate sufficient GHG emissions to noticeably change global climate temperature. However, the combination of GHG emissions from past, present and future projects could contribute substantially to global climate change. Thus, project specific GHG emissions should be evaluated in terms of whether or not they would result in a cumulatively significant impact on global climate change".

5.4.1 GHG Emissions Significance Criteria

SJVAPCD's GAMAQI, states: "[I]n the absence of scientific evidence supporting establishment of a numerical threshold, the District policy applies performance based standards to assess project-specific GHG emission impacts on global climate change. The determination is founded on the principal that projects whose emissions have been reduced or mitigated consistent with the California Global Warming Solutions Act of 2006, commonly referred to as 'AB 32', should be considered to have a less than significant impact on global climate change."

The SJVAPCD has adopted guidance documents for assessing and mitigating GHG impacts on global climate change. Rather than establishing specific numeric thresholds of significance (as in the case of criteria pollutant emissions), the SJVAPCD guidance utilizes a tiered approach to assess cumulative impacts on global climate change. The GAMAQI recommends a three-tier approach:

- Projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the Lead Agency with jurisdiction over the affected resource and supported by a CEQA-compliant environmental review document adopted by the Lead Agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement BPS.
- Projects implementing BPS would not require quantification of project-specific GHG emissions. Consistent with CEQA Guidelines, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.
- Projects not implementing BPS would require quantification of project specific GHG emissions and demonstration that project specific GHG emissions would be reduced or mitigated by at least 29%, compared to BAU, including GHG emission reductions achieved since the 2002-2004 baseline period, consistent with GHG emission reduction targets established in CARB's AB 32 Scoping Plan. Projects achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.

5.4.2 Impact GHG-1: Would the Project Generate Greenhouse Gas Emissions, Either Directly or Indirectly, that May Have a Significant Impact on the Environment?

5.4.2.1 Discussion

As shown in Table 5-4, the estimated annual GHG emissions associated with proposed Project result in a net GHG reduction of over 10,700 MT CO_2e per year compared to BAU.

GHG emissions will also occur during construction activities associated with the proposed Project. Construction emissions are amortized over a 30-year life of the project. The construction emissions are small relative to the operating emission reductions, and when amortized over the life of the project, construction emissions reduce the overall Project benefit slightly, but the Project will still achieve a net GHG reduction of over 10,700 MT CO2e per year.

Neither the compost facility nor the bioenergy facility is expected to be subject to the Cap-and-Trade program. However, while Project emissions do not create a compliance obligation for the operators of the compost and bioenergy facilities under Cap-and-Trade, the emissions are covered by the Cap-and-Trade program in connection with the activities of other source categories, such as electricity generation and fuel suppliers.[7]

The SJVAPCD's CEQA Cap-and-Trade Policy also recommends that projects that are required to comply with CARB's GHG Cap-and-Trade program be determined to have a less than cumulatively significant impact on global climate change. This policy is included in the SJVAPCD's December 2009 CEQA GHG policies (described above) and 2015 GAMAQI, which states that a project whose emissions have been reduced or mitigated consistent with AB 32 should be considered to have a less than significant impact on global climate change (SJVAPCD 2015a).

This approach would include both the CARB's GHG Cap-and-Trade program and other adopted GHG-reducing regulations (such as AB 341 and SB 605) as adopted GHG emissions reduction plans. Under the SJVAPCD's tiered approach in assessing the significance of project-specific GHG emissions increases, projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the Project is

[7] CARB's Cap-and-Trade Regulation establishes a set of rules that limit GHG emissions from the state's largest sources of GHGs by applying a statewide aggregate GHG allowance budget to covered entities (17 CCR 95800 to 96023). The Cap-and-Trade Program imposes an enforceable statewide cap on GHG emissions at covered facilities, including refineries, electric power providers, cement production facilities, oil and gas production facilities, and fuel suppliers, that steadily declines over time.

To the extent that fuels are supplied from fuel suppliers that are not subject to the Cap-and-Trade Regulation because emissions from the quantities of fuel supplied would not exceed the Cap-and-Trade applicability threshold, the SJVAPCD's CEQA Cap-and-Trade Policy states:

> *"As did the CARB when excluding such sources from the Cap-and-Trade Regulation, the District considers GHG emissions resulting from the combustion of all fuels supplied by those fuel suppliers not subject to the Cap-and-Trade Regulation to be insignificant. Therefore, it is reasonable to apply this policy to GHG emissions resulting from the combustion of all fuels in the State of California."*

located would be determined to have a less than significant individual and cumulative impact for GHG emissions (SJVAPCD 2015a).

5.4.2.2 Level of Significance

The proposed Project yields a net reduction in GHG emissions of over 10,700 MT per year. The reductions are achieved through landfill diversion, a key element of the State's GHG reduction strategy. These reductions far exceed the 29% reduction targeted by AB 32 and established by the SJVAPCD as a significance threshold. Further, AB 32's Cap-and-Trade program provides mitigation for the Project's vehicles (feedstock delivery, compost and biochar shipment, employee commute, off-road equipment) and electricity usage.

Since the proposed Project is consistent with AB 32, provides a net decrease in GHG emissions, and the emissions that do occur (e.g., electricity usage, fuel combustion in vehicles) are covered by the Cap-and-Trade program, the proposed Project will have no significant adverse impacts related to GHG emissions, and instead would provide a benefit.

5.4.2.3 Mitigation Measures

None required. However, emissions covered under the Cap-and-Trade program (e.g., electricity usage, fuel combustion in vehicles) are considered mitigated emissions.

5.4.3 Impact GHG-2: Would the Project Conflict with any Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases?

5.4.3.1 Discussion

Californians dispose of about 30 million tons of solid waste in landfills each year. Organic wastes decompose in landfills to produce methane, a powerful GHG. While landfills are an effective and relatively safe way to manage some waste, disposal-centric activities result in squandering valuable resources and generate LFG as well as other risks. A large fraction of the organics in the waste stream can be diverted from landfills to composting or digestion facilities to produce beneficial products.

In March 2017, CARB adopted the Short-Lived Climate Pollutant Reduction (SLCP) Strategy, establishing a path to decrease GHG emissions and displace fossil-based natural gas use. Strategies include avoiding landfill methane emissions by reducing the disposal of organics through edible food recovery, composting, in-vessel digestion, and other processes; and recovering methane from wastewater treatment facilities and manure methane at dairies and using the methane as a renewable source of natural gas to fuel vehicles or generate electricity. The proposed Project will support the goals of the SLCP Strategy by providing composting and bioenergy production[8] as alternatives to landfilling of organic wastes in Tulare County.

[8] California's 2017 Climate Change Scoping Plan makes several references to diverting organic wastes to anaerobic digestion facilities, which would produce methane that would then be used for electricity production. The proposed Project would develop a gasification technology that will produce syngas that will be combusted to produce electricity. The proposed gasification process is more suitable for woody biomass than is anaerobic digestion, and the Project will produce carbon-neutral electricity, just as the anaerobic digestion process does.

The proposed Project will support compliance with SB 1383 (Lara, Chapter 395, Statutes of 2016). SB 1383 targets short-lived climate pollutants, including methane emissions due to organic waste disposal in landfills. SB 1383 requires the reduction in methane emissions at landfills by reducing landfill disposal of organic waste to 75% below 2014 levels by 2025, including establishing energy infrastructure development and procurement policies needed to encourage in-vessel digestion projects and increase the production and use of renewable gas. The proposed Project will support the goals of SB 1383 by providing composting and bioenergy production as alternatives to landfilling of organic wastes in Tulare County.

To further reduce landfilled solid waste, the legislature adopted AB 341 to achieve more significant waste reductions by setting a goal that 75% of solid waste generated be reduced, recycled, or composted by 2020, and by mandating commercial recycling. AB 1826 (Chesboro, Chapter 727, Statutes of 2014) added requirements regarding mandatory commercial organics recycling. The proposed Project will support the goals of AB 341 and AB 1826 by providing composting and bioenergy production as alternatives to landfilling organic wastes in Tulare County.

The Tulare County CAP relies on the AB 32 Scoping Plan measures for reductions from landfills. The proposed Project will support the goals of the Scoping Plan by providing composting and bioenergy production as alternatives to landfilling of organic wastes in Tulare County.

5.4.3.2 Level of Significance after Mitigation

By providing composting and bioenergy production as alternatives to landfilling of organic wastes in Tulare County, the proposed Project is consistent with applicable plans, policies, and regulations adopted for the purpose of reducing GHG emissions. Therefore, the proposed Project will have a less than significant impact with respect to GHG emissions.

5.4.3.3 Mitigation Measures

None required.

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APPENDIX A – LANDFILL EMISSIONS

Appendix A: Landfill Emissions

Air Quality and GHG Technical Report

Prepared for:

Tulare County
Solid Waste Department
Compost and Bioenergy Facilities
Visalia Landfill
8614 Avenue 328
Visalia, CA 93291

July 2021

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List of Acronyms and Abbreviations

CH_4	Methane
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
EPA	[United States] Environmental Protection Agency
GHG	Greenhouse Gas
MSW	Municipal Solid Waste
MT	Metric Ton
N_2O	Nitrous Oxide
ROG	Reactive Organic Gas
TPD	Tons per Day
TPY	Tons per Year
WARM	Waste Reduction Model

Appendix A: Landfill Emissions

1.0 INTRODUCTION

The Visalia Landfill is an existing facility, permitted to dispose of up to 2,000 tons per day (TPD) of waste. The proposed composting facility would divert 641 TPD [200,000 tons per year (TPY)] from landfill to composting, and the proposed bioenergy facility would divert an additional 68 TPD (25,000 TPY) from landfill to bioenergy production. However, the landfill would continue to operate and intends to retain the ability to operate at the permitted capacity of 2,000 TPD of waste. Thus, the facility staffing and vehicles and equipment required to operate the landfill itself remain unchanged following the implementation of the proposed compost facility. While emissions from organic waste disposal will be avoided, emissions associated with landfill operation would be the same following project implementation as they are now and are not estimated.

There is no change expected in the emissions associated with hauling organic waste to the facility; the waste would be generated at the same locations and delivered to the Visalia Landfill site. Under business-as-usual operations, the organic waste would be landfilled. Under the proposed project scenario, the waste would be diverted to either the compost facility or the bioenergy facility. Waste transportation emissions would be the same and are not estimated.

Emissions from other types of activities, e.g., wind erosion, offroad equipment operation, and water truck operation, would remain unchanged for the landfill itself with or without the proposed project. Because no change to emissions from these sources is anticipated, emissions estimates are not provided.

Given this operational plan for the landfill, the diversion of organic waste from the landfill to composting and bioenergy production will reduce the quantity of organic matter disposed in the landfill. Organic matter decomposed in landfills produces greenhouse gas (GHG) emissions; thus, a reduction in organic waste disposal will reduce/avoid the emissions of these pollutants.

The methodology used to estimate GHG emission reductions is explained in this appendix, and the data and assumptions used in the calculations are provided. Emission calculation worksheets are provided in Attachment A-1.

2.0 LANDFILL EMISSIONS

2.1 Emission Calculation Methodology

The Waste Reduction Model (WARM) was created by the U.S. Environmental Protection Agency (EPA) to help solid waste planners and organizations estimate GHG emission reductions and economic impacts from several different waste management practices (EPA 2020).

WARM calculates GHG emissions, energy, and economic impacts for baseline and alternative waste management practices, including source reduction, recycling, combustion, composting, and landfilling. The user can construct various scenarios by simply entering data on the amount of waste handled by material type and by management practice. WARM applies material-specific emission and economic factors for each management practice to calculate the GHG emissions, energy savings, and economic impacts of each scenario. Several key inputs, such as landfill gas recovery practices and transportation distances to municipal solid waste (MSW) facilities, can be modified by the user.

The model calculates emissions in metric tons (MT) of carbon dioxide equivalents (CO_2e) across a wide range of material types commonly found in MSW. The GHG emission factors used in WARM are based on a life cycle perspective.

2.2 Process Inputs

Emissions were estimated for two scenarios: 1) the baseline business-as-usual case, which would landfill 225,000 TPY of mixed organic waste; and 2) the proposed project, which would compost 200,000 TPY of mixed organic waste and convert 25,000 TPY to bioenergy. WARM model inputs are shown in Table 2-1.

Table 2-1: WARM Model Inputs

Parameter	Baseline (Business as Usual)	Proposed Composting	Proposed Bioenergy
Disposal Quantity	225,000 TPY	200,000 TPY	25,000 TPY
Waste Disposition	Landfill w/ landfill gas collection and flare	Composting	Bioenergy production via gasification and combustion of syngas in IC engines. Modeled in WARM as anaerobic digestion.
Waste Composition	Mixed Organics: Food Waste 53%, Yard Trimmings 47%	Mixed Organics: Food Waste 53%, Yard Trimmings 47%	Mixed Organics: Food Waste 53%, Yard Trimmings 47%
Moisture Condition	Dry (k=0.02), Less than 20 inches of precipitation per year	N/A	N/A
Transportation Distance	40 miles[1]	40 miles	40 miles

[1] The approximate distance from southern county border to the facility is 40 miles.

2.3 Emissions

The WARM model output results are summarized in Table 2-2. As shown, the proposed project results in a net reduction in GHG emissions compared to the baseline, business-as-usual disposal of 13,401.21 MT CO_2e per year (= 17,378.17 – 3,976.97).

Table 2-2: Comparison of Baseline to Project GHG Emissions

Parameter	Baseline (Business as Usual)	Proposed Composting	Proposed Bioenergy
Disposal Quantity	225,000 TPY	200,000 TPY	25,000 TPY
GHG Emissions	(3,976.97)	(17,378.17)	

The baseline emissions reflect a reduction in GHG emissions from landfilling. This result is counterintuitive in light of AB 1383 goals, as landfill diversion is a key GHG reduction strategy of AB 1383. The EPA explains the apparent discrepancy this way (EPA 2010):

> *"When organic materials derived from biomass sources are landfilled, a portion of the carbon in these materials does not decompose; however, under natural conditions, virtually all of the material would decompose aerobically, and the carbon would be released as biogenic carbon dioxide (CO_2). When the materials are landfilled, aerobic biodegradation is prevented. The carbon in those materials that does not fully decompose in landfills (anaerobically) is removed from the global carbon cycle, is said to be "stored", and is counted as an anthropogenic sink."*

> *"In landfills, anaerobic bacteria digest organic materials that are derived from biomass sources, including food scraps, yard trimmings, paper, and wood, to produce methane (CH_4) and CO_2. Although the CO_2 emissions would naturally occur from these materials due to natural degradation, the CH_4 emissions would not, and are therefore considered anthropogenic GHGs and accounted for in WARM. The landfilled materials that are not fully decomposed by anaerobic bacteria are stored in the landfill. This remaining undecomposed carbon is considered an anthropogenic sink, since this carbon would have normally been released as biogenic CO_2 from natural decomposition completing the photosynthesis/ respiration cycle."*

3.0 REFERENCES

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ATTACHMENT A-1 – WARM CALCULATION WORKSHEETS

rsion 15

Waste Reduction Model (WARM) -- Inputs

Use this worksheet to describe the baseline and alternative waste management scenarios that you want to compare. The blue shaded areas indicate where you need to enter information.
Please enter data in short tons (1 short ton = 2,000 lbs.)

1. Describe the baseline generation and management for the waste materials listed below. If the material is not generated in your community or you do not want to analyze it, leave it blank or enter 0. Make sure that the total quantity generated equals the total quantity managed.

2. Describe the alternative management scenario for the waste materials generated in the baseline. Any decrease in generation should be entered in the Source Reduction column. Any increase in generation should be entered in the Source Reduction column as a negative value. Make sure that the total quantity generated equals the total quantity managed.

Material Type	Material	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Tons Generated	Tons Source Reduced	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested
Paper	Corrugated Containers				NA	NA	0.00					NA	NA
	Magazines/Third-class Mail				NA	NA	0.00					NA	NA
	Newspaper				NA	NA	0.00					NA	NA
	Office Paper				NA	NA	0.00					NA	NA
	Phonebooks				NA	NA	0.00					NA	NA
	Textbooks				NA	NA	0.00					NA	NA
	Mixed Paper (general)				NA	NA	0.00					NA	NA
	Mixed Paper (primarily residential)				NA	NA	0.00					NA	NA
	Mixed Paper (primarily from offices)				NA	NA	0.00					NA	NA
Food Waste	Food Waste	NA					0.00		NA				
	Food Waste (non-meat)	NA					0.00		NA				
	Food Waste (meat only)	NA					0.00		NA				
	Beef	NA					0.00		NA				
	Poultry	NA					0.00		NA				
	Grains	NA					0.00		NA				
	Bread	NA					0.00		NA				
	Fruits and Vegetables	NA					0.00		NA				
	Dairy Products	NA					0.00		NA				
Yard Trimmings	Yard Trimmings	NA					0.00	NA	NA				
	Grass	NA					0.00	NA	NA				
	Leaves	NA					0.00	NA	NA				
	Branches	NA					0.00	NA	NA				
Mixed Plastics	HDPE				NA	NA	0.00					NA	NA
	LDPE	NA			NA	NA	0.00		NA			NA	NA
	PET				NA	NA	0.00					NA	NA
	LLDPE	NA			NA	NA	0.00		NA			NA	NA
	PP				NA	NA	0.00					NA	NA
	PS	NA			NA	NA	0.00		NA			NA	NA
	PVC	NA			NA	NA	0.00		NA			NA	NA
	Mixed Plastics				NA	NA	0.00					NA	NA
Bioplastics	PLA	NA				NA	0.00		NA				NA
Electronics	Desktop CPUs				NA	NA	0.00					NA	NA
	Portable Electronic Devices				NA	NA	0.00					NA	NA
	Flat-Panel Displays				NA	NA	0.00					NA	NA
	CRT Displays				NA	NA	0.00	NA				NA	NA
	Electronic Peripherals				NA	NA	0.00					NA	NA
	Hard-Copy Devices				NA	NA	0.00					NA	NA
	Mixed Electronics				NA	NA	0.00	NA				NA	NA
Metals	Aluminum Cans				NA	NA	0.00					NA	NA
	Aluminum Ingot				NA	NA	0.00					NA	NA
	Steel Cans				NA	NA	0.00					NA	NA
	Copper Wire				NA	NA	0.00					NA	NA
	Mixed Metals				NA	NA	0.00					NA	NA
Glass	Glass				NA	NA	0.00					NA	NA
Construction Materials	Asphalt Concrete			NA	NA	NA	0.00				NA	NA	NA
	Asphalt Shingles				NA	NA	0.00					NA	NA
	Carpet				NA	NA	0.00					NA	NA
	Clay Bricks	NA		NA	NA	NA	0.00		NA		NA	NA	NA
	Concrete			NA	NA	NA	0.00	NA			NA	NA	NA
	Dimensional Lumber				NA	NA	0.00					NA	NA
	Drywall			NA	NA	NA	0.00				NA	NA	NA
	Fiberglass Insulation	NA		NA	NA	NA	0.00		NA		NA	NA	NA
	Fly Ash			NA	NA	NA	0.00	NA			NA	NA	NA
	Medium-density Fiberboard	NA			NA	NA	0.00		NA			NA	NA
	Structural Steel			NA	NA	NA	0.00				NA	NA	NA
	Vinyl Flooring	NA			NA	NA	0.00		NA			NA	NA
	Wood Flooring	NA			NA	NA	0.00		NA			NA	NA
Tires	Tires				NA	NA	0.00					NA	NA
Mixed Materials	Mixed Recyclables				NA	NA	0.00	NA				NA	NA
	Mixed Organics	NA	225,000.00				225,000.00	NA	NA			200,000.00	25,000.00
	Mixed MSW	NA			NA	NA	0.00	NA	NA			NA	NA

Please refer to the User's Guide if you need assistance completing this table.

3. **In order to account for the avoided electricity-related emissions in the landfilling and combustion pathways, EPA assigns the appropriate regional "marginal" electricity grid mix emission factor based on your location. Select state for which you are conducting this analysis.**

Please select state or select national average:	California
Region Location:	Pacific

4. **To estimate the benefits from source reduction, EPA usually assumes that the material that is source reduced would have been manufactured from the current mix of virgin and recycled inputs. However, you may choose to estimate the emission reductions from source reduction under the assumption that the material would have been manufactured from 100% virgin inputs in order to obtain an upper bound estimate of the benefits from source reduction. Select which assumption you want to use in the analysis. Note that for materials for which information on the share of recycled inputs used in production is unavailable or is not a common practice; EPA assumes that the current mix is comprised of 100% virgin inputs. Consequently, the source reduction benefits of both the "Current mix" and "100% virgin" inputs are the same.**

- (●) Current Mix
- ( ) 100% Virgin

5. **The emissions from landfilling depends on whether the landfill where your waste is disposed has a landfill gas (LFG) control system. If you do not know whether your landfill has LFG control, select "National Average" to calculate emissions based on the estimated proportions of landfills with LFG control in 2012 and proceed to question 7. If your landfill does not have a LFG system, select "No LFG Recovery" and proceed to question 8. If a LFG system is in place at your landfill, select "LFG Recovery" and click one of the options in 6a to indicate whether LFG is recovered for energy or flared.**

- ( ) National Average
- (●) LFG Recovery
- ( ) No LFG Recovery

6a. **If your landfill has gas recovery, does it recover the methane for energy or flare it?**

- ( ) Recover for energy
- (●) Flare

6b. **For landfills that recover gas, the landfill gas collection efficiency will vary throughout the life of the landfill. Based on a literature review of field measurements and expert discussion, a range of collection efficiencies was estimated for a series of different landfill scenarios. The "typical" landfill is judged to represent the average U.S. landfill, although it must be recognized that every landfill is unique and a typical landfill is an approximation of reality. The worst-case collection scenario represents a landfill that is in compliance with EPA's New Source Performance Standards (NSPS). The aggressive gas collection scenario includes landfills where the operator is aggressive in gas collection relative to a typical landfill. Bioreactor landfills, which are operated to accelerate decomposition, are assumed to collect gas aggressively. The California regulatory collection scenario allows users to estimate and view landfill management results based on California regulatory requirements.**

- ( ) Typical operation - DEFAULT
- ( ) Worst-case collection
- ( ) Aggressive gas collection
- (●) California regulatory collection

	Landfill gas collection efficiency (%) assumptions
Typical	*Years 0-1: 0%; Years 2-4: 50%; Years 5-14: 75%; Years 15 to 1 year before final cover: 82.5%; Final cover: 90%*
Worst-case	*Years 0-4: 0%; Years 5-9: 50%; Years 10-14: 75%; Years 15 to 1 year before final cover: 82.5%; Final cover: 90%*
Aggressive	*Year 0: 0%; Years 0.5-2: 50%; Years 3-14: 75%; Years 15 to 1 year before final cover: 82.5%; Final cover: 90%*
California	*Year 0: 0%; Year 1: 50%; Years 2-7: 80%; Years 8 to 1 year before final cover: 85%; Final cover: 90%*

7. **Which of the following moisture conditions and associated bulk MSW decay rate (k) most accurately describes the average conditions at the landfill? The decay rates, also referred to as k values, describe the rate of change per year (yr-1) for the decomposition of organic waste in landfills. A higher average decay rate means that waste decomposes faster in the landfill.**

- ( ) National average - DEFAULT
- (●) Dry (k=0.02)
- ( ) Moderate (k = 0.04)
- ( ) Wet (k = 0.06)
- ( ) Bioreactor (k = 0.12)

	Moisture condition assumptions
Dry (k=0.02)	*Less than 20 inches of precipitation per year*
Moderate (k=0.04)	*Between 20 and 40 inches of precipitation per year*
Wet (k=0.06)	*Greater than 40 inches of precipitation per year*
Bioreactor (k=0.12)	*Water is added until the moisture content reaches 40 percent moisture on a wet weight basis*
National average	*Weighted average based on the share of waste received at each landfill type*

8a. For anaerobic digestion of food waste materials (including beef, poultry, grains, bread, fruits and vegetables, and dairy products), please choose the appropriate type of anaerobic digestion process used.
Note that for grass, leaves, branches, yard trimmings and mixed organics, wet digestion is not applicable based on current technology and practices in the United States. Therefore, dry digestion is the only digestion type modeled in WARM for these materials.
Only one type of digestion process (wet or dry) can be modeled at a time in WARM.

- ○ Wet Digestion
- ◉ Dry Digestion

8b. WARM assumes that digestate resulting from anaerobic digestion processes will be applied to land. In many cases, the digestate is cured before land application.
When digestate is cured, the digestate is dewatered and any liquids are recovered and returned to the reactor (when using a wet digester). Next, the digestate is aerobically cured in turned windrows, then screened and applied to agricultural fields.
Select whether the digestate resulting from your anaerobic digester is cured before land application.

- ◉ Cured - DEFAULT
- ○ Not cured

9a. Emissions that occur during transport of materials to the management facility are included in this model. You may use default transport distances, indicated in the table below, or provide information on the transport distances for the various MSW management options.

- ○ Use Default Distances
- ◉ Provide Information

9b. If you have chosen to provide information, please fill in the table below. Distances should be from the curb to the landfill, combustor, or material recovery facility (MRF).
***Please note that if you chose to provide information, you must provide distances for both the baseline and the alternative scenarios.**

Management Option	Default Distance (Miles)	Distance (Miles)
Landfill	20	40.00
Combustion	20	40.00
Recycling	20	40.00
Composting	20	40.00
Anaerobic Digestion	20	40.00

10. If you wish to personalize your results report, input your name & organization, and also specify the project period corresponding to the data you entered above.

Name	Tulare County
Organization	Visalia Landfill

Project Period	From	07/14/30	to	07/14/31

Congratulations! You have finished all the inputs.
A summary of your results awaits you on the sheet(s) titled "Summary Report."
For more detailed analyses of results, see the sheet(s) titled "Analysis Results."

GHG Emissions Analysis -- Summary Report

Version 15

GHG Emissions Waste Management Analysis for Visalia Landfill

Prepared by: Tulare County

Project Period for this Analysis: 07/14/30 to 07/14/31

Note: If you wish to save these results, rename this file (e.g., WARM-MN1) and save it. Then the "Analysis Inputs" sheet of the "WARM" file will be blank when you are ready to make another model run.

GHG Emissions from Baseline Waste Management ($MTCO_2E$): (3,976.97)

Material	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total $MTCO_2E$
Mixed Organics	NA	225,000.00	-	-	-	(3,976.97)
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GHG Emissions from Alternative Waste Management Scenario ($MTCO_2E$): (17,378.17)

Material	Tons Source Reduced	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total $MTCO_2E$	Change (Alt - Base) $MTCO_2E$
Mixed Organics	NA	NA	-	-	200,000.00	25,000.00	(17,378.17)	(13,401.21)
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
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							0	0.00

Total Change in GHG Emissions ($MTCO_2E$): (13,401.21)

Note: a negative value (i.e., a value in parentheses) indicates an emission reduction; a positive value indicates an emission increase.

This is equivalent to…		
Removing annual emissions from	**2,845**	Passenger Vehicles
Conserving	**1,507,956**	Gallons of Gasoline
Conserving	**558,384**	Cylinders of Propane Used for Home Barbeques
	0.00075%	Annual CO_2 emissions from the U.S. transportation sector
	0.00074%	Annual CO_2 emissions from the U.S. electricity sector

a) For explanation of methodology, see the EPA WARM Documentation:
Documentation Chapters for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM)
-- available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model
b) Emissions estimates provided by this model are intended to support voluntary GHG measurement and reporting initiatives.
c) The GHG emissions results estimated in WARM indicate the full life-cycle benefits waste management alternatives. Due to the timing of the GHG emissions from the waste management pathways, (e.g., avoided landfilling and increased recycling), the actual GHG implications may accrue over the long-term. Therefore, one should not interpret the GHG emissions implications as occurring all in one year, but rather through time.

APPENDIX B – CONSTRUCTION EMISSIONS

Appendix B: Construction Emissions

Air Quality and GHG Technical Report

Prepared for:

Tulare County
Solid Waste Department
Compost and Bioenergy Facilities
Visalia Landfill
8614 Avenue 328
Visalia, CA 93291

July 2021

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List of Acronyms and Abbreviations

BMP	Best Management Practice
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CASP	Covered Aerated Static Pile
CEQA	California Environmental Quality Act
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DPM	Diesel Particulate Matter
GHG	Greenhouse Gas
MT	Metric Ton
N_2O	Nitrous Oxide
NOP	Notice of Preparation
NO_x	Nitrogen Oxides
PM_{10}	Particulate Matter with an Aerodynamic Diameter of 10 Microns
$PM_{2.5}$	Particulate Matter with an Aerodynamic Diameter of 2.5 Microns
SO_x	Sulfur Oxides
sq. ft.	Square Foot
TAC	Toxic Air Contaminant
VOC	Volatile Organic Compound

Appendix B: Construction Emissions

1.0 INTRODUCTION

The construction emissions analysis was performed using the California Emissions Estimator Model® (CalEEMod) version 2016.3.2 (CAPCOA 2019), the official statewide land use computer model designed to provide a uniform platform for estimating potential criteria pollutant[1] and greenhouse gas (GHG)[2] emissions associated with construction of a land use project. The model quantifies direct emissions from construction (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The mobile source emission factors used in the model – published by the California Air Resources Board (CARB) – include the Pavley standards and Low Carbon Fuel Standards. The model allows the user to incorporate project design features, regulatory measures, and mitigation measures to reduce criteria pollutant and GHG emissions and calculates the benefits achieved from selected measures. CalEEMod was developed by the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the South Coast Air Quality Management District, Bay Area Air Quality Management District, San Joaquin Valley Air Pollution Control District, and other California air districts. Default land use data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) were provided by the various California air districts to account for local requirements and conditions. As the official assessment methodology for land use projects in California, CalEEMod is relied upon for construction emissions quantification for this project.

A project's construction phase produces many types of emissions, but PM_{10} (including $PM_{2.5}$) in fugitive dust and diesel engine exhaust are the pollutants of greatest concern. Fugitive dust emissions can result from a variety of construction activities, including excavation, grading, demolition, vehicle travel on paved and unpaved surfaces, and vehicle exhaust. Construction-related emissions can cause substantial increases in localized concentrations of PM_{10}, as well as affecting PM_{10} compliance with ambient air quality standards on a regional basis. Particulate emissions from construction activities can lead to adverse health effects and nuisance concerns such as reduced visibility and soiling of exposed surfaces. The use of diesel-powered construction equipment emits ozone precursors NO_x and VOC, as well as diesel particulate matter (DPM), the latter being a composite of toxic air contaminants (TACs). Large construction projects using multiple large earthmoving equipment are evaluated to determine if operations may exceed the California Environmental Quality Act (CEQA) significance threshold for NO_x emissions and could temporarily expose area residents to hazardous levels of DPM. Use of architectural coatings and other materials associated with finishing buildings may also emit ROG and TACs.

[1] Criteria pollutants include nitrogen oxides (NO_x), sulfur oxides (SO_x), carbon monoxide (CO), volatile organic compounds (VOC), and particulate matter (PM_{10} and $PM_{2.5}$).
[2] GHGs include, but are not limited to, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O).

2.0 CONSTRUCTION EMISSIONS ESTIMATES

2.1 CalEEMod Model Input Data and Assumptions

The information used to develop the emissions estimates for the proposed Project is presented in this section. Not all CalEEMod defaults used are listed, but the default assumptions that have a particularly important impact on the project emissions are listed.

- Defined in Project Description of Visalia Landfill Notice of Preparation (NOP):
  - Basic project design features, including project vicinity, site plan, building sizes, constructions phasing, etc. (see Attachment B-1);
  - Phase 1 is designed for 100,000 TPY capacity, and includes:
    - A 50,000 sq. ft. processing building,
    - Paved access roads, and
    - 35.9 acre-foot capacity lined pond to collect contact water;
  - Approximate Phase 1 start of July 2022 and approximate duration of 6 months; and
  - Phases 2 and 3 are each designed for 50,000 TPY capacity;
  - No site preparation or grading required, as the site is already graded based on previous use.
- Assumptions:
  - Compost concrete pad paving thickness is 8 inches;
  - Cement trucks can carry 10 cubic yards of cement per trip;
  - Ready-mix cement will be brought to the facility from the nearest ready-mix vendor, Viking Ready Mix in Visalia, CA, located 4.2 miles from the facility;
  - Cement trucks will deliver ready-mix cement for 100 days in order to supply the required amount of cement for Phase 1 of the project;
  - 60 one-way cement truck trips per day will be required to supply the required amount of cement for the project during Phase 1;
  - 125 workers will be on-site daily for the construction portion of Phase 1;
  - 30 concrete vendor trucks will be used for concrete and one hauling truck for miscellaneous use per day during Phase 1;
  - 10 one-way cement truck trips per day will be required to supply the required amount of cement for project construction during Phases 2 and 3;
  - Off-road equipment used in construction includes cranes, forklifts, generator sets, graders, rubber-tired dozers, tractors, loaders, backhoes, and welders; and
  - During construction, exposed soil will be watered three times a day.
- CalEEMod defaults were used for:
  - Construction equipment load factor, usage hours, and average age;

- Architectural coating areas;
- Vehicle emission profiles and all calculations related to traffic and mobile source emissions aside from trip rates and trip lengths; and
- All other calculations not specifically listed as an assumption.

PM_{10} emitted during construction can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors, making quantification difficult. Despite this variability in emissions, experience has shown that there are several feasible control measures that can be reasonably implemented to significantly reduce fugitive dust emissions from construction. For larger projects, a fugitive dust control would be implemented, including Best Management Practices (BMPs) such as frequent water application to exposed surfaces. A dust control plan is usually sufficient mitigation to reduce PM_{10} impacts to a level considered less than significant. For these emissions estimates, standard (i.e., CalEEMod default) construction mitigation measures are assumed.

Based on information defined in the Visalia Landfill NOP along with the listed assumptions, the following land use data for CalEEMod input was used for construction of Phase 1 of the composting facility, Phases 2 and 3 of the composting facility, and the bioenergy facility as presented in Tables 2-1, 2-2, and 2-3, respectively. Additional data inputs are provided in Attachment B-2.

Table 2-1: Land Use Data for CalEEMod Input – Compost Facility Phase 1

Project Element	Land Use Type	Land Use Subtype	Unit Amount (1,000 sq. ft.)	Lot Size (acres)	Estimated Area (sq. ft.)
Phase 1 of Composting Facility	Industrial	General Light Industry	667.355	15.320	667,355
Other Non-Asphalt Paved Areas	Parking	Other Non-Asphalt Surfaces	400.000	9.183	400,000
Office	Commercial	General Office Building	1.000	0.023	1,000
Project Site				24.53	1,068,355

Table 2-2: Land Use Data for CalEEMod Input – Compost Facility Phases 2 and 3

Project Element	Land Use Type	Land Use Subtype	Unit Amount (1,000 sq. ft.)	Lot Size (acres)	Estimated Area (sq. ft.)
Phase 2/3 of Composting Facility	Industrial	General Light Industry	112.603	2.585	112,603
Project Site				2.59	112,603

Table 2-3: Land Use Data for CalEEMod Input – Bioenergy Facility

Project Element	Land Use Type	Land Use Subtype	Unit Amount (1,000 sq. ft.)	Lot Size (acres)	Estimated Area (sq. ft.)
Bioenergy Facility	Industrial	General Heavy Industry	80.000	1.837	80,000
Parking	Parking	Parking Lot	20.000	0.184	8,000
Project Site				2.02	88,000

2.2 Project Construction Emissions

Composting area construction emissions were calculated for construction of each phase of the composting facility. Construction activities for the composting facility will consist primarily of constructing concrete pads and walls for the compost bunkers themselves, paving the haul roads, and constructing a 50,000 sq. ft. processing building, a small office building. Additional work will be required to install blowers for the covered aerated static pile (CASP) composting systems. Emissions associated with construction will occur from the equipment used for construction, the extended aerated static piles, trucks delivering equipment, and workers commuting. Construction activities for Phase 1 of the composting facility are estimated to take approximately 6 months starting in mid-2022. Phase 2 is estimated to be completed by 2025 and Phase 3 by 2030. Construction emissions were also calculated for the proposed bioenergy facility.

2.2.1 Criteria Emissions

Table 2-4 summarizes mitigated maximum daily construction criteria pollutant emissions, and Table 2-5 shows mitigated annual criteria pollutant emissions in tons[3] for the composting and bioenergy facilities. CalEEMod output reports are provided in Attachment B-3.

Table 2-4: Mitigated Maximum Daily Construction Emissions Summary

Criteria Pollutant	Maximum Daily Emissions (lb/day)			
	Compost Facility Phase 1	Compost Facility Phase 2	Compost Facility Phase 3	Bioenergy Facility
ROG	114.03	1.96	1.96	111.80
NO_x	37.98	17.40	17.40	17.01
CO	35.00	19.03	19.03	15.73
SO_x	0.09	0.04	0.04	0.03
PM_{10}	3.58	1.16	1.16	3.34
$PM_{2.5}$	2.05	0.83	0.83	2.01

[3] Construction of each phase is expected to last no more than 1 year, so the emissions presented in tons are the total construction for each phase and the maximum annual emissions.

Table 2-5: Mitigated Annual Construction Emissions Summary

Criteria Pollutant	Emissions (Tons)			
	Compost Facility Phase 1	Compost Facility Phase 2	Compost Facility Phase 3	Bioenergy Facility
ROG	1.42	0.06	0.06	0.66
NO_x	2.30	0.52	0.52	1.05
CO	2.04	0.56	0.56	0.99
SO_x	5.09E-03	1.10E-03	1.10E-03	2.01E-03
PM_{10}	2.13E-01	3.46E-02	3.46E-02	6.85E-02
$PM_{2.5}$	1.24E-01	2.48E-02	2.48E-02	5.20E-02

2.2.2 Greenhouse Gas Emissions

GHGs – collectively reported as carbon dioxide equivalents (CO_2e) – are directly emitted from mobile sources such as on-road vehicles and off-road construction equipment burning fuels such as gasoline, diesel, biodiesel, propane, or natural gas (compressed or liquefied).

Mitigated GHG emissions in metric tons (MT)[4] were estimated for construction of the composting and bioenergy facilities using CalEEMod; the results are shown in Table 2-6. CalEEMod output reports are provided in Attachment B-3.

Table 2-6: Construction Greenhouse Gas Emissions Summary

GHG	Emissions (MT)			
	Compost Facility Phase 1	Compost Facility Phase 2	Compost Facility Phase 3	Bioenergy Facility
CO_2	455.6	97.2	97.2	171.2
CH_4	0.1	0.02	0.02	0.0
N_2O	0.0	0.0	0.0	0.0
CO_2e	457.5	97.7	97.7	171.9

[4] Construction of each phase is expected to last no more than 1 year, so the emissions presented in tons are the total construction for each phase and the maximum annual emissions.

3.0 REFERENCES

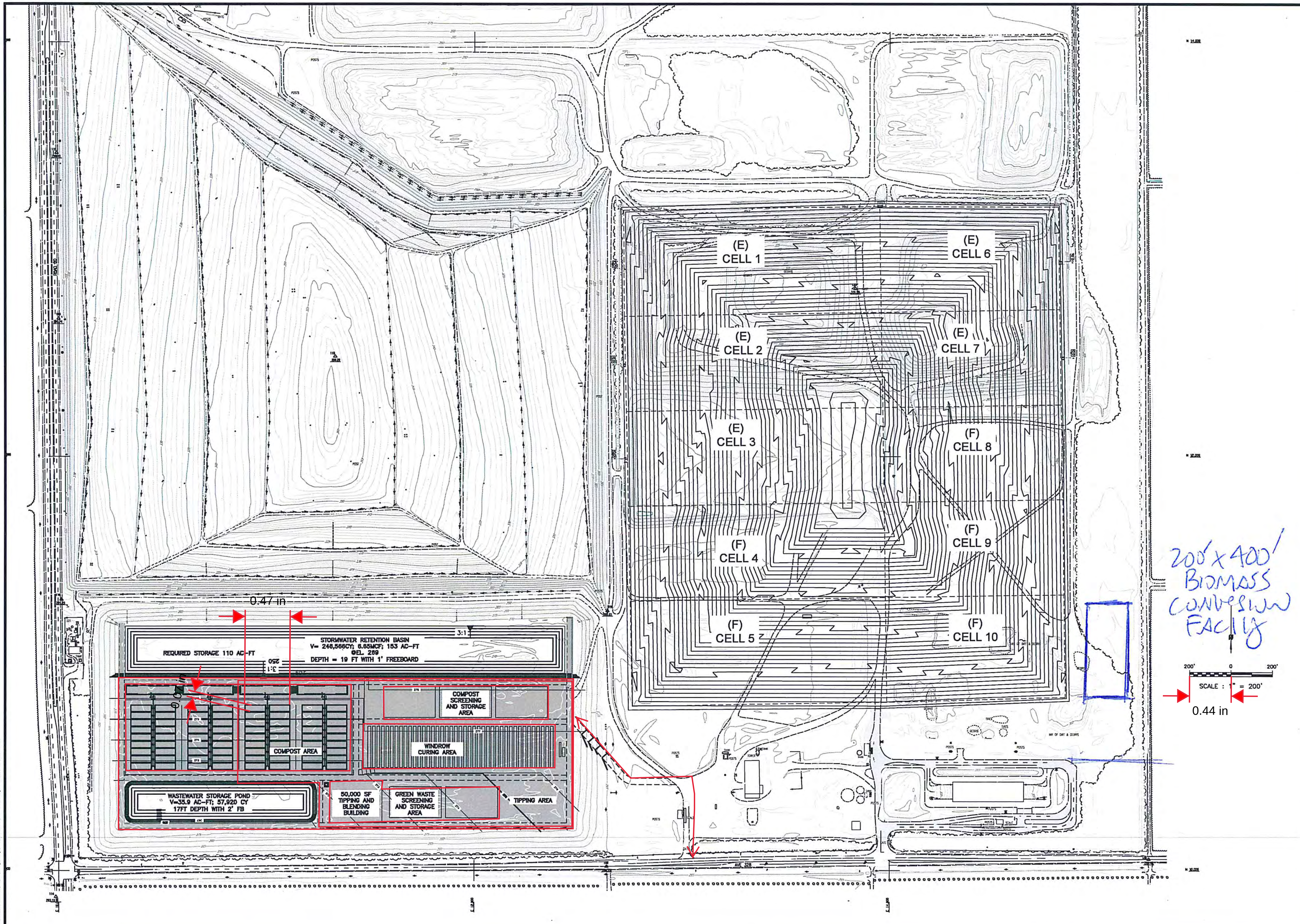
CalRecycle 2016. California Department of Resources Recycling and Recovery Solid Waste Cleanup Program Weights and Volumes for Project Estimates. Accessed via website: (https://www.calrecycle.ca.gov/swfacilities/cdi/Tools/Calculations), January 29, 2021.

CAPCOA 2019. California Emissions Estimation Model® (CalEEMod), Version 2016.3.2, Accessed via website: (http://www.caleemod.com/), January 29, 2021.

CARB 2017. California Air Resources Board. California's 2017 Climate Change Scoping Plan. Accessed via website: (https://ww3.arb.ca.gov/cc/scopingplan/scopingplan.htm), January 29, 2021.

CEC 2019. California Energy Commission Building Energy Efficiency Program. Accessed via website: (https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards), January 29, 2021.

ATTACHMENT B-1 – FACILITY PLOT PLAN



EBA ENGINEERING
825 SONOMA AVENUE
SUITE C
SANTA ROSA, CA 95404
TEL: (707) 544-0784

SITE PLAN
VISALIA LANDFILL - COMPOST FACILITY
TULARE COUNTY
8614 AVE 328
VISALIA, CALIFORNIA

Submittal / Revision:

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Job No: 18-2573
Drawn By: WC
Checked By: MD
Date: 10/10/2019

Sheet Number
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1 of 2

ATTACHMENT B-2 – CALEEMOD INPUT DATA

Yorke ENGINEERING, LLC www.YorkeEngr.com

Table 1: Land Use Data for CalEEMod Input - Compost Facility Phase 1						
Project Element	**Land Use Type**	**Land Use Subtype**	**Unit Amount**	**Size Metric**	**Lot Acreage (footprint)**	**Square Feet (est.)**
Phase 1 Area: Composting, Windrow Curing, and Other Compost Processing Buildings	Industrial	General Light Industry	667.355	1,000 sq. ft.	15.320	**667,355**
Other Non-Asphalt Paved Areas (Concrete) and Concrete Paved Roads	Parking	Other Non-Asphalt Surfaces	400.000	1,000 sq. ft.	9.183	**400,000**
Office	Commercial	General Office Building	1.000	1,000 sq. ft.	0.023	**1,000**
Project Site					**24.53**	**1,068,355**

Source: Applicant 2021, CalEEMod version 2016.3.2

Table 2: Land Use Data for CalEEMod Input - Compost Facility Phase 2 & 3						
Project Element	**Land Use Type**	**Land Use Subtype**	**Unit Amount**	**Size Metric**	**Lot Acreage (footprint)**	**Square Feet (est.)**
Phase 2/3 Area: Composting Area	Industrial	General Light Industry	112.603	1,000 sq. ft.	2.585	**112,603**
Project Site					**2.59**	**112,603**

Source: Applicant 2021, CalEEMod version 2016.3.2

Table 3: Land Use Data for CalEEMod Input - Biomass Facility						
Project Element	**Land Use Type**	**Land Use Subtype**	**Unit Amount**	**Size Metric**	**Lot Acreage (footprint)**	**Square Feet (est.)**
Biomass Facility	Industrial	General Heavy Industry	80.000	1,000 sq. ft.	1.837	**80,000**
Parking	Parking	Parking Lot	20.000	Spaces	0.184	**8,000**
Project Site					**2.02**	**88,000**

Source: Applicant 2021, CalEEMod version 2016.3.2

Value	**Units**	**Comments**
43560.000	sqft/acre	Constant
0.440	in/200 ft	from EBA Site Plan PDF
0.002	in/ft	from EBA Site Plan PDF
7.480	sqin	Total Compost facility Area
4.930	sqin	Phase 1 Compost Facility Concrete Paved Area
6.020	sqin	Total Compost facility area without WW storage pond
2.120	sqin	Total Finished CASP Composting Area
1.060	sqin	Phase 1 CASP Composting Area
0.920	sqin	Windrow Curing Area
1.250	sqin	Other Buildings
0.236	sqin	Concrete Paved Roads
1.700	sqin	Phase 1 Other Non-asphalt Paved Areas (Concrete)
35.479	acre	Total Compost Facility Area
23.384	acre	Phase 1 Compost Facility Concrete Paved Area
28.554	acre	Total Compost Facility Area without WW storage pond
10.055	acre	Total Finished CASP Composting Area
5.028	acre	Phase 1 CASP Composting Area
4.364	acre	Total Windrow Curing Area
5.929	acre	Other Buildings
1.119	acre	Concrete Paved Roads
8.063	acre	Phase 1 Other Non-asphalt Paved Areas (Concrete)
2,782	ft	Approximate length of each CASP module walls
6	ft	Assumed height of compost area walls
8	in	Assumed thickness of compost area walls
2	number	Number of CASP modules constructed in Phase 1
22,255	cuft	Cubic Feet of Concrete for CASP modules
225	ft	Assumed length and width of compost area buildings
10	ft	Assumed height of compost area buildings
6	in	Assumed thickness of compost area building walls
6	number	Max number of other buildings in compost facility
27,000	cuft	Cubic Feet of Concrete for compost facility buildings

13. Site Preparation: The 36-acre proposed site would be located in a soil borrow pit and would be designed to accommodate up to 200,000 tons per year that can be built in phases of 50,000 tons per year in a modular units, using CASP technology, recessed approximately 20 feet below grade and is currently vacant, graded, and would not need to be cleared and grubbed for the proposed compost facility. Construction at the site would last approximately five to six months for Phase 1, a 100,000 TPY CASP module, and would include installing processing and composting equipment, a 50,000 square foot processing building, a 10-acre concrete compost pad, and a 35.9 acre-foot (AF) lined pond to collect contact water.

Temporary construction equipment would include a grader, tractor, loader, backhoe, and rubber-tired bulldozer. The existing access to the landfill would be utilized to gain access to the compost facility. Typical operations and site equipment are described in the Operational Plan.

Site improvements would be required by the SWRCB as part of the approval process for this project. The landfill property currently has a site-specific WDR permit for water quality protection. This permit would need to be revised to reflect operational changes associated with the proposed compost facility and additional regulatory requirements imposed by the SWRCB for compacted compost pads and lined wastewater storage ponds. Alternatively, the compost facility may be placed under the General Order instead of revised site-specific WDRs. Regardless, site improvements include constructing a new lined wastewater storage pond, as well as making additional on-site drainage improvements to continue to direct stormwater and process water runoff into these detention pond(s), and improvements to working surfaces such as paving active composting and/or processing areas or amending/compacting the soil to meet the SWRCB's specifications.

Table 4: Truck Trips from Ready Mix Facility: Phase 1

Materials	Estimated Footprint (sf)	Volume of Cement Required (CY Cement)	Volume of Cement Conversion Factor (CY/Truck)	No. of Truck Trips (10 CY/load)	Total Truck VMT	Truck Trips Per Day for Ready Mix	Trip Rate (Trips per Size Metric per Day)
Concrete Slab Paving	1,068,355	26,379	10	2,638	22,159	53	0.05276
Tilt-up Concrete Pouring	--	1,824	10	182	1,529	4	0.00364

Table 5: Truck Trips from Ready Mix Facility: Phase 2/3

Materials	Estimated Footprint (sf)	Volume of Cement Required (CY Cement)	Volume of Cement Conversion Factor (CY/Truck)	No. of Truck Trips (10 CY/load)	Total Truck VMT	Truck Trips Per Day for Ready Mix	Trip Rate (Trips per Size Metric per Day)
Concrete Slab Paving	112,603	2,780	10	278	2,335	6	0.00556
Tilt-up Concrete Pouring	--	412	10	41	344	1	0.00082

Conversion Factors

Value	Units	Comments
12	in/ft	constant
3	ft/yd	constant
0.037037037	CY/cubic ft	constant
1000	square feet, CalEEMOD Size Metric	constant
10	CY Cement/Truck	Assumption
8	inches Paving Thickness	Assumption
4.2	Facility to Ready Mix Site (miles)	Assumption, from: 36.385475°, -119.381247° to:Viking ready mix visalia
100	Days of Concrete Pouring	Assumption

Table 6: Dust from Material Movement

Activity	Amount Import (CY)	Amount Export (CY)	Density (lb/CY)	Mass of Import (tons)	Mass of Export (tons)	Import/Export Phased?	No. of Haul Trips (8 CY/load)
Site Preparation	0	0.0	2100	0	0.0	No	0
Grading	0.0	0	2100	0.0	0	No	0

Note: Site prep and grading has already been completed, per Project Description.

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Table 7: Solid Waste Cleanup Program Weights and Volumes for Project Estimates

Description of Materials	Approximate Pounds/Cubic Yard	Remarks
Burn Dump Debris/Ash	800-1000	Dry Loose
	1500-1800	Wet for Dust Suppression
	2300	Wet mixed with soil
Construction Debris, Asphalt or Concrete: Loose	2400	
Construction Debris, Wood ; Uncompacted	400	Increase up to 100% if compacted using heavy equipment
Earth	2100	Loose/Dry. Plus 30% when compacted.
	3000	Excavated/Wet
Gravel or Crushed Stone Loose/Dry	2600	Increase 20% if wet
Household Trash	800	
Liquid Waste	1600	202 gal./cubic yard ~ 7 Lbs./Gal.
		E.g. Antifreeze, Waste Oil, Solvent
Metals, Un-compacted	600	e.g. Appliances, Metal Siding
Sand, Loose/Dry	2400	Increase 20% if damp and 30% if wet/compacted
Stone, Graded 8” max. Loose	2700	e.g. Gabion Construction. Increase 10% consolidated in place
Tire Burn Ash	500-800	
Tires, Auto and Pickup	220	Average 10 tires per cubic yard
Tires, OTR	See Remarks	Average 500 pounds per tire
Tires, Truck	480	Average 4 tires per cubic yard
Vehicles, Auto and Pickup	See Remarks	Use 3000 Pounds/Vehicle
Wood Chips, Shredded/Dry Wood Chips/Bark w/30% Soil	300	
	800	
Yard Waste (Vegetation) Loose	600	

Source: Cal Recycle 2016

http://www.calrecycle.ca.gov/swfacilities/cdi/Tools/Calculations.htm

Table 8: Mitigation Measures Assumptions Summary

Source	Mitigation Measure	Amount/Reduction
Construction	Water Application	3x daily
	Architectural Coatings	Low-VOC Compliant

Table 9: Other Non Default CalEEMod Settings / Assumptions

mitigation construction	clean paved roads 0.5
mitigation construction	Water Exposed Area 3x a day

ATTACHMENT B-3 – CALEEMOD OUTPUT REPORTS

Phase 1 Construction Emissions

Tulare County Compost Facility
Tulare County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	667.36	1000sqft	15.32	667,355.00	0
Other Non-Asphalt Surfaces	400.00	1000sqft	9.18	400,000.00	0
General Office Building	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	51
Climate Zone	7			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction of Phase 1 for the compost facility will take place over a span of approximately 6 months according to the project description.

Off-road Equipment - Equipment type and number provided in Project Description. Added cranes for tilt-up construction. Kept default generator set and welders entry.

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Assume: 125 workers during construction, 30 vendor trucks used per day for concrete, and 1 hauling truck from misc. use.

On-road Fugitive Dust - Assuming 100% paved roads, and access road is paved and completed first.

Architectural Coating - Assuming not much architectural coating needed for most areas of compost facility.

Vehicle Trips - No operational emissions quantified.

Consumer Products - No operational emissions quantified.

Area Coating - No operational emissions quantified.

Landscape Equipment - No operational emissions quantified.

Energy Use - No operational emissions quantified.

Water And Wastewater - No operational emissions quantified.

Solid Waste - No operational emissions quantified.

Construction Off-road Equipment Mitigation - Assume exposed areas are watered as necessary to mitigate fugitive dust. Assume paved roads and access ways are cleaned routinely to mitigate fugitive dust.

Area Mitigation -

Road Dust - No operational emissions quantified.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	1,002,533.00	50,000.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0

tblAreaCoating	Area_EF_Nonresidential_Interior	150	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	150	0
tblAreaCoating	Area_Nonresidential_Exterior	334178	0
tblAreaCoating	Area_Nonresidential_Interior	1002533	0
tblAreaCoating	Area_Parking	24000	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	50
tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	370.00	120.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	PhaseEndDate	5/3/2024	2/3/2023
tblConstructionPhase	PhaseEndDate	3/8/2024	12/23/2022
tblConstructionPhase	PhaseEndDate	4/5/2024	12/30/2022
tblConstructionPhase	PhaseStartDate	4/6/2024	12/31/2022
tblConstructionPhase	PhaseStartDate	10/8/2022	7/11/2022
tblConstructionPhase	PhaseStartDate	3/9/2024	12/24/2022
tblEnergyUse	LightingElect	0.65	0.00
tblEnergyUse	LightingElect	3.77	0.00
tblEnergyUse	NT24E	1.31	0.00
tblEnergyUse	NT24E	3.31	0.00
tblEnergyUse	NT24NG	0.12	0.00
tblEnergyUse	NT24NG	1.08	0.00
tblEnergyUse	T24E	0.40	0.00
tblEnergyUse	T24E	2.89	0.00
tblEnergyUse	T24NG	16.68	0.00

tblEnergyUse	T24NG	16.11	0.00
tblOffRoadEquipment	HorsePower	247.00	231.00
tblOffRoadEquipment	HorsePower	187.00	89.00
tblOffRoadEquipment	LoadFactor	0.40	0.29
tblOffRoadEquipment	LoadFactor	0.41	0.20
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType	Forklifts	Graders
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	5.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	7.00	5.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	827.53	0.00
tblSolidWaste	SolidWasteGenerationRate	0.93	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripLength	6.60	4.50
tblTripsAndVMT	VendorTripNumber	175.00	60.00
tblTripsAndVMT	WorkerTripNumber	449.00	250.00
tblTripsAndVMT	WorkerTripNumber	15.00	20.00
tblTripsAndVMT	WorkerTripNumber	90.00	50.00

tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	11.03	0.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	154,327,000.00	0.00
tblWater	IndoorWaterUseRate	177,733.75	0.00

tblWater	OutdoorWaterUseRate	108,933.59	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2818	2.3039	2.0366	5.0900e-003	0.2011	0.0979	0.2991	0.0538	0.0909	0.1447	0.0000	455.5775	455.5775	0.0758	0.0000	457.4722
2023	1.4246	0.0183	0.0440	1.0000e-004	7.7400e-003	9.3000e-004	8.6700e-003	2.0600e-003	9.3000e-004	2.9900e-003	0.0000	9.1133	9.1133	3.3000e-004	0.0000	9.1215
Maximum	**1.4246**	**2.3039**	**2.0366**	**5.0900e-003**	**0.2011**	**0.0979**	**0.2991**	**0.0538**	**0.0909**	**0.1447**	**0.0000**	**455.5775**	**455.5775**	**0.0758**	**0.0000**	**457.4722**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2818	2.3039	2.0366	5.0900e-003	0.1153	0.0979	0.2132	0.0327	0.0909	0.1236	0.0000	455.5772	455.5772	0.0758	0.0000	457.4720
2023	1.4246	0.0183	0.0440	1.0000e-004	4.3900e-003	9.3000e-004	5.3200e-003	1.2400e-003	9.3000e-004	2.1600e-003	0.0000	9.1133	9.1133	3.3000e-004	0.0000	9.1215
Maximum	**1.4246**	**2.3039**	**2.0366**	**5.0900e-003**	**0.1153**	**0.0979**	**0.2132**	**0.0327**	**0.0909**	**0.1236**	**0.0000**	**455.5772**	**455.5772**	**0.0758**	**0.0000**	**457.4720**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**42.70**	**0.00**	**28.98**	**39.17**	**0.00**	**14.83**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	7-11-2022	10-10-2022	1.4009	1.4009
2	10-11-2022	1-10-2023	1.6146	1.6146
3	1-11-2023	4-10-2023	0.9897	0.9897
		Highest	1.6146	1.6146

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	7/11/2022	12/23/2022	5	120	
2	Paving	Paving	12/24/2022	12/30/2022	5	5	
3	Architectural Coating	Architectural Coating	12/31/2022	2/3/2023	5	25	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 9.18

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 50,000; Non-Residential Outdoor: 334,178; Striped Parking Area: 24,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	5	5.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Rubber Tired Dozers	1	8.00	231	0.29
Building Construction	Graders	1	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Building Construction	Welders	1	1.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	15	250.00	60.00	2.00	16.80	4.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	50.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1868	1.8974	1.3732	2.6900e-003		0.0947	0.0947		0.0879	0.0879	0.0000	235.5185	235.5185	0.0665	0.0000	237.1817
Total	**0.1868**	**1.8974**	**1.3732**	**2.6900e-003**		**0.0947**	**0.0947**		**0.0879**	**0.0879**	**0.0000**	**235.5185**	**235.5185**	**0.0665**	**0.0000**	**237.1817**

3.2 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	2.4000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0741	0.0741	0.0000	0.0000	0.0742
Vendor	8.3800e-003	0.3229	0.0578	7.0000e-004	0.0147	6.8000e-004	0.0154	4.2500e-003	6.5000e-004	4.9000e-003	0.0000	66.8923	66.8923	3.8800e-003	0.0000	66.9893
Worker	0.0836	0.0553	0.5672	1.6300e-003	0.1858	1.1500e-003	0.1869	0.0494	1.0600e-003	0.0504	0.0000	147.5937	147.5937	3.7500e-003	0.0000	147.6875
Total	**0.0920**	**0.3785**	**0.6251**	**2.3300e-003**	**0.2005**	**1.8300e-003**	**0.2023**	**0.0536**	**1.7100e-003**	**0.0554**	**0.0000**	**214.5601**	**214.5601**	**7.6300e-003**	**0.0000**	**214.7509**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1868	1.8974	1.3732	2.6900e-003		0.0947	0.0947		0.0879	0.0879	0.0000	235.5183	235.5183	0.0665	0.0000	237.1814
Total	**0.1868**	**1.8974**	**1.3732**	**2.6900e-003**		**0.0947**	**0.0947**		**0.0879**	**0.0879**	**0.0000**	**235.5183**	**235.5183**	**0.0665**	**0.0000**	**237.1814**

3.2 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	2.4000e-004	4.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0741	0.0741	0.0000	0.0000	0.0742
Vendor	8.3800e-003	0.3229	0.0578	7.0000e-004	9.5400e-003	6.8000e-004	0.0102	2.9900e-003	6.5000e-004	3.6300e-003	0.0000	66.8923	66.8923	3.8800e-003	0.0000	66.9893
Worker	0.0836	0.0553	0.5672	1.6300e-003	0.1054	1.1500e-003	0.1065	0.0297	1.0600e-003	0.0307	0.0000	147.5937	147.5937	3.7500e-003	0.0000	147.6875
Total	**0.0920**	**0.3785**	**0.6251**	**2.3300e-003**	**0.1149**	**1.8300e-003**	**0.1168**	**0.0326**	**1.7100e-003**	**0.0343**	**0.0000**	**214.5601**	**214.5601**	**7.6300e-003**	**0.0000**	**214.7509**

3.3 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.7600e-003	0.0278	0.0365	6.0000e-005		1.4200e-003	1.4200e-003		1.3100e-003	1.3100e-003	0.0000	5.0069	5.0069	1.6200e-003	0.0000	5.0474
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.7600e-003**	**0.0278**	**0.0365**	**6.0000e-005**		**1.4200e-003**	**1.4200e-003**		**1.3100e-003**	**1.3100e-003**	**0.0000**	**5.0069**	**5.0069**	**1.6200e-003**	**0.0000**	**5.0474**

3.3 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.8000e-004	1.8900e-003	1.0000e-005	6.2000e-004	0.0000	6.2000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.4920	0.4920	1.0000e-005	0.0000	0.4923
Total	**2.8000e-004**	**1.8000e-004**	**1.8900e-003**	**1.0000e-005**	**6.2000e-004**	**0.0000**	**6.2000e-004**	**1.6000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.4920**	**0.4920**	**1.0000e-005**	**0.0000**	**0.4923**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.7600e-003	0.0278	0.0365	6.0000e-005		1.4200e-003	1.4200e-003		1.3100e-003	1.3100e-003	0.0000	5.0069	5.0069	1.6200e-003	0.0000	5.0474
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.7600e-003**	**0.0278**	**0.0365**	**6.0000e-005**		**1.4200e-003**	**1.4200e-003**		**1.3100e-003**	**1.3100e-003**	**0.0000**	**5.0069**	**5.0069**	**1.6200e-003**	**0.0000**	**5.0474**

3.3 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.8000e-004	1.8900e-003	1.0000e-005	3.5000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.4920	0.4920	1.0000e-005	0.0000	0.4923
Total	**2.8000e-004**	**1.8000e-004**	**1.8900e-003**	**1.0000e-005**	**3.5000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.4920**	**0.4920**	**1.0000e-005**	**0.0000**	**0.4923**

3.4 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.4189					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4000e-003	0.0163	0.0226	4.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	3.1916	3.1916	1.9000e-004	0.0000	3.1963
Total	**1.4213**	**0.0163**	**0.0226**	**4.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.9000e-004**	**8.9000e-004**	**0.0000**	**3.1916**	**3.1916**	**1.9000e-004**	**0.0000**	**3.1963**

3.4 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2300e-003	2.0500e-003	0.0214	7.0000e-005	7.7400e-003	5.0000e-005	7.7900e-003	2.0600e-003	4.0000e-005	2.1000e-003	0.0000	5.9217	5.9217	1.4000e-004	0.0000	5.9252
Total	**3.2300e-003**	**2.0500e-003**	**0.0214**	**7.0000e-005**	**7.7400e-003**	**5.0000e-005**	**7.7900e-003**	**2.0600e-003**	**4.0000e-005**	**2.1000e-003**	**0.0000**	**5.9217**	**5.9217**	**1.4000e-004**	**0.0000**	**5.9252**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.4189					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4000e-003	0.0163	0.0226	4.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	3.1916	3.1916	1.9000e-004	0.0000	3.1963
Total	**1.4213**	**0.0163**	**0.0226**	**4.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.9000e-004**	**8.9000e-004**	**0.0000**	**3.1916**	**3.1916**	**1.9000e-004**	**0.0000**	**3.1963**

3.4 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2300e-003	2.0500e-003	0.0214	7.0000e-005	4.3900e-003	5.0000e-005	4.4400e-003	1.2400e-003	4.0000e-005	1.2800e-003	0.0000	5.9217	5.9217	1.4000e-004	0.0000	5.9252
Total	**3.2300e-003**	**2.0500e-003**	**0.0214**	**7.0000e-005**	**4.3900e-003**	**5.0000e-005**	**4.4400e-003**	**1.2400e-003**	**4.0000e-005**	**1.2800e-003**	**0.0000**	**5.9217**	**5.9217**	**1.4000e-004**	**0.0000**	**5.9252**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.533627	0.031932	0.174885	0.126979	0.018773	0.004811	0.020615	0.079394	0.001826	0.001217	0.004186	0.001092	0.000663
General Office Building	0.533627	0.031932	0.174885	0.126979	0.018773	0.004811	0.020615	0.079394	0.001826	0.001217	0.004186	0.001092	0.000663
Other Non-Asphalt Surfaces	0.533627	0.031932	0.174885	0.126979	0.018773	0.004811	0.020615	0.079394	0.001826	0.001217	0.004186	0.001092	0.000663

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Phases 2 & 3 Construction Emissions

Tulare County Compost Facility

Tulare County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	112.60	1000sqft	2.59	112,603.00	0

1.2 Other Project Characteristics

Urbanization Rural **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 51

Climate Zone 7 **Operational Year** 2023

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 641.35 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Assume construction of Phase 2 and 3 for the compost facility will take place over a span of approximately 2 months each.

Off-road Equipment -

Off-road Equipment - Equipment type and number provided in Project Description. Added crane for tilt-up construction. Kept default generator set and welders entry.

Trips and VMT - Assume: 25 workers during construction, 5 vendor trucks used per day for concrete, and 1 hauling truck from misc. use.

On-road Fugitive Dust - Assuming 100% paved roads, and access road is paved and completed first.

Architectural Coating - Assuming not much architectural coating needed for most areas of compost facility.

Vehicle Trips - No operational emissions quantified.

Road Dust - No operational emissions quantified.

Consumer Products - No operational emissions quantified.

Area Coating - No operational emissions quantified.

Landscape Equipment - No operational emissions quantified.

Energy Use - No operational emissions quantified.

Water And Wastewater - No operational emissions quantified.

Solid Waste - No operational emissions quantified.

Construction Off-road Equipment Mitigation - Assume exposed areas are watered as necessary to mitigate fugitive dust. Assume paved roads and access ways are cleaned routinely to mitigate fugitive dust.

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	150	0
tblAreaCoating	Area_EF_Parking	150	0

tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	150	0
tblAreaCoating	Area_Nonresidential_Exterior	334178	0
tblAreaCoating	Area_Nonresidential_Interior	1002533	0
tblAreaCoating	Area_Parking	24000	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	150	0
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	50
tblConstructionPhase	NumDays	220.00	60.00
tblEnergyUse	LightingElect	0.65	0.00
tblEnergyUse	LightingElect	3.77	0.00
tblEnergyUse	NT24E	1.31	0.00
tblEnergyUse	NT24E	3.31	0.00
tblEnergyUse	NT24NG	0.12	0.00
tblEnergyUse	NT24NG	1.08	0.00
tblEnergyUse	T24E	0.40	0.00
tblEnergyUse	T24E	2.89	0.00
tblEnergyUse	T24NG	16.68	0.00
tblEnergyUse	T24NG	16.11	0.00
tblOffRoadEquipment	HorsePower	187.00	89.00
tblOffRoadEquipment	HorsePower	247.00	231.00
tblOffRoadEquipment	LoadFactor	0.41	0.20
tblOffRoadEquipment	LoadFactor	0.40	0.29

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	UsageHours	7.00	5.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	MaterialMoistureContent	0.5	0
tblRoadDust	MaterialSiltContent	4.3	0
tblRoadDust	MeanVehicleSpeed	40	0
tblRoadDust	MobileAverageVehicleWeight	2.4	0
tblRoadDust	RoadSiltLoading	0.1	0
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	827.53	0.00
tblSolidWaste	SolidWasteGenerationRate	0.93	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripLength	6.60	4.50
tblTripsAndVMT	VendorTripNumber	175.00	10.00
tblTripsAndVMT	WorkerTripNumber	449.00	50.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	SU_TR	0.68	0.00

tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	11.03	0.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	154,327,000.00	0.00
tblWater	IndoorWaterUseRate	177,733.75	0.00
tblWater	OutdoorWaterUseRate	108,933.59	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2028	0.0581	0.5220	0.5642	1.1000e-003	0.0198	0.0233	0.0431	5.3000e-003	0.0216	0.0269	0.0000	97.1721	97.1721	0.0214	0.0000	97.7060
Maximum	**0.0581**	**0.5220**	**0.5642**	**1.1000e-003**	**0.0198**	**0.0233**	**0.0431**	**5.3000e-003**	**0.0216**	**0.0269**	**0.0000**	**97.1721**	**97.1721**	**0.0214**	**0.0000**	**97.7060**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2028	0.0581	0.5220	0.5642	1.1000e-003	0.0114	0.0233	0.0346	3.2200e-003	0.0216	0.0248	0.0000	97.1721	97.1721	0.0214	0.0000	97.7059
Maximum	**0.0581**	**0.5220**	**0.5642**	**1.1000e-003**	**0.0114**	**0.0233**	**0.0346**	**3.2200e-003**	**0.0216**	**0.0248**	**0.0000**	**97.1721**	**97.1721**	**0.0214**	**0.0000**	**97.7059**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**42.73**	**0.00**	**19.69**	**39.25**	**0.00**	**7.76**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
22	**10-11-2027**	**1-10-2028**	0.0553	0.0553
23	**1-11-2028**	**4-10-2028**	0.5116	0.5116
		Highest	0.5116	0.5116

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/3/2028	3/24/2028	5	60	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	5.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Graders	1	8.00	89	0.20
Building Construction	Rubber Tired Dozers	1	8.00	231	0.29
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	1.00	46	0.45

<u>Trips and VMT</u>

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	15	50.00	10.00	2.00	16.80	4.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0521	0.4978	0.5262	9.2000e-004		0.0231	0.0231		0.0215	0.0215	0.0000	80.0941	80.0941	0.0209	0.0000	80.6163
Total	**0.0521**	**0.4978**	**0.5262**	**9.2000e-004**		**0.0231**	**0.0231**		**0.0215**	**0.0215**	**0.0000**	**80.0941**	**80.0941**	**0.0209**	**0.0000**	**80.6163**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	3.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0696	0.0696	0.0000	0.0000	0.0697
Vendor	4.3000e-004	0.0211	3.1100e-003	6.0000e-005	1.2300e-003	2.0000e-005	1.2400e-003	3.5000e-004	1.0000e-005	3.7000e-004	0.0000	5.2710	5.2710	2.7000e-004	0.0000	5.2777
Worker	5.6000e-003	2.9800e-003	0.0348	1.3000e-004	0.0186	9.0000e-005	0.0187	4.9400e-003	8.0000e-005	5.0200e-003	0.0000	11.7374	11.7374	2.0000e-004	0.0000	11.7423
Total	**6.0300e-003**	**0.0242**	**0.0380**	**1.9000e-004**	**0.0198**	**1.1000e-004**	**0.0199**	**5.2900e-003**	**9.0000e-005**	**5.3900e-003**	**0.0000**	**17.0780**	**17.0780**	**4.7000e-004**	**0.0000**	**17.0897**

3.2 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0521	0.4978	0.5262	9.2000e-004		0.0231	0.0231		0.0215	0.0215	0.0000	80.0941	80.0941	0.0209	0.0000	80.6162
Total	**0.0521**	**0.4978**	**0.5262**	**9.2000e-004**		**0.0231**	**0.0231**		**0.0215**	**0.0215**	**0.0000**	**80.0941**	**80.0941**	**0.0209**	**0.0000**	**80.6162**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	3.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0696	0.0696	0.0000	0.0000	0.0697
Vendor	4.3000e-004	0.0211	3.1100e-003	6.0000e-005	8.0000e-004	2.0000e-005	8.1000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	5.2710	5.2710	2.7000e-004	0.0000	5.2777
Worker	5.6000e-003	2.9800e-003	0.0348	1.3000e-004	0.0105	9.0000e-005	0.0106	2.9700e-003	8.0000e-005	3.0500e-003	0.0000	11.7374	11.7374	2.0000e-004	0.0000	11.7423
Total	**6.0300e-003**	**0.0242**	**0.0380**	**1.9000e-004**	**0.0114**	**1.1000e-004**	**0.0115**	**3.2200e-003**	**9.0000e-005**	**3.3100e-003**	**0.0000**	**17.0780**	**17.0780**	**4.7000e-004**	**0.0000**	**17.0897**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.533627	0.031932	0.174885	0.126979	0.018773	0.004811	0.020615	0.079394	0.001826	0.001217	0.004186	0.001092	0.000663
General Office Building	0.533627	0.031932	0.174885	0.126979	0.018773	0.004811	0.020615	0.079394	0.001826	0.001217	0.004186	0.001092	0.000663
Other Non-Asphalt Surfaces	0.533627	0.031932	0.174885	0.126979	0.018773	0.004811	0.020615	0.079394	0.001826	0.001217	0.004186	0.001092	0.000663

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Bioenergy Facility Construction Emissions

Tulare County Biomass Facility

Tulare County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	80.00	1000sqft	1.84	80,000.00	0
Parking Lot	20.00	Space	0.18	8,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	51
Climate Zone	7			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Vehicle Trips - No operational emissions quantified.

Road Dust - No operational emissions quantified.

Area Coating - No operational emissions quantified.

Landscape Equipment - No operational emissions quantified.

Energy Use - No operational emissions quantified.

Water And Wastewater - No operational emissions quantified.

Solid Waste - No operational emissions quantified.

Construction Off-road Equipment Mitigation - Assume exposed areas are watered as necessary to mitigate fugitive dust.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	150	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	150	0
tblAreaCoating	Area_Nonresidential_Exterior	40000	0
tblAreaCoating	Area_Nonresidential_Interior	120000	0
tblAreaCoating	Area_Parking	480	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	50
tblConstructionPhase	PhaseEndDate	6/16/2022	6/15/2023
tblConstructionPhase	PhaseEndDate	5/19/2022	5/18/2023

tblConstructionPhase	PhaseEndDate	7/15/2021	7/14/2022
tblConstructionPhase	PhaseEndDate	6/2/2022	6/1/2023
tblConstructionPhase	PhaseEndDate	7/7/2021	7/6/2022
tblConstructionPhase	PhaseStartDate	6/3/2022	6/2/2023
tblConstructionPhase	PhaseStartDate	7/16/2021	7/15/2022
tblConstructionPhase	PhaseStartDate	7/8/2021	7/7/2022
tblConstructionPhase	PhaseStartDate	5/20/2022	5/19/2023
tblConstructionPhase	PhaseStartDate	7/3/2021	7/4/2022
tblEnergyUse	LightingElect	0.65	0.00
tblEnergyUse	LightingElect	0.35	0.00
tblEnergyUse	NT24E	1.31	0.00
tblEnergyUse	NT24NG	0.12	0.00
tblEnergyUse	T24E	0.40	0.00
tblEnergyUse	T24NG	16.68	0.00
tblRoadDust	MaterialMoistureContent	0.5	0
tblRoadDust	MaterialSiltContent	4.3	0
tblRoadDust	MeanVehicleSpeed	40	0
tblRoadDust	MobileAverageVehicleWeight	2.4	0
tblRoadDust	RoadSiltLoading	0.1	0
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	99.20	0.00
tblVehicleTrips	ST_TR	1.50	0.00
tblVehicleTrips	SU_TR	1.50	0.00
tblVehicleTrips	WD_TR	1.50	0.00

tblWater	AerobicPercent	87.46	0.00
tblWater	AerobicPercent	87.46	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	18,500,000.00	0.00
tblWater	SepticTankPercent	10.33	100.00
tblWater	SepticTankPercent	10.33	100.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1306	1.0527	0.9870	2.0100e-003	0.0458	0.0460	0.0918	0.0168	0.0439	0.0607	0.0000	171.2065	171.2065	0.0284	0.0000	171.9162
2023	0.6569	0.7852	0.8281	1.6600e-003	0.0201	0.0331	0.0531	5.4400e-003	0.0316	0.0370	0.0000	141.6277	141.6277	0.0228	0.0000	142.1988
Maximum	**0.6569**	**1.0527**	**0.9870**	**2.0100e-003**	**0.0458**	**0.0460**	**0.0918**	**0.0168**	**0.0439**	**0.0607**	**0.0000**	**171.2065**	**171.2065**	**0.0284**	**0.0000**	**171.9162**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1306	1.0527	0.9870	2.0100e-003	0.0225	0.0460	0.0685	8.0800e-003	0.0439	0.0520	0.0000	171.2064	171.2064	0.0284	0.0000	171.9160
2023	0.6569	0.7852	0.8281	1.6600e-003	0.0117	0.0331	0.0448	3.4000e-003	0.0316	0.0350	0.0000	141.6275	141.6275	0.0228	0.0000	142.1986
Maximum	**0.6569**	**1.0527**	**0.9870**	**2.0100e-003**	**0.0225**	**0.0460**	**0.0685**	**8.0800e-003**	**0.0439**	**0.0520**	**0.0000**	**171.2064**	**171.2064**	**0.0284**	**0.0000**	**171.9160**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**47.97**	**0.00**	**21.79**	**48.40**	**0.00**	**11.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
5	6-7-2022	9-6-2022	0.4226	0.4226
6	9-7-2022	12-6-2022	0.5922	0.5922
7	12-7-2022	3-6-2023	0.5515	0.5515
8	3-7-2023	6-6-2023	0.6866	0.6866
9	6-7-2023	9-6-2023	0.3636	0.3636
		Highest	0.6866	0.6866

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3130	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7900e-003	1.7900e-003	0.0000	0.0000	1.9000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3130**	**1.0000e-005**	**9.2000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.7900e-003**	**1.7900e-003**	**0.0000**	**0.0000**	**1.9000e-003**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3130	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7900e-003	1.7900e-003	0.0000	0.0000	1.9000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3130**	**1.0000e-005**	**9.2000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.7900e-003**	**1.7900e-003**	**0.0000**	**0.0000**	**1.9000e-003**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/4/2022	7/6/2022	5	3	
2	Grading	Grading	7/7/2022	7/14/2022	5	6	
3	Building Construction	Building Construction	7/15/2022	5/18/2023	5	220	
4	Paving	Paving	5/19/2023	6/1/2023	5	10	
5	Architectural Coating	Architectural Coating	6/2/2023	6/15/2023	5	10	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 0.18

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 120,000; Non-Residential Outdoor: 40,000; Striped Parking Area: 480 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Scrapers	1	8.00	367	0.48
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	37.00	14.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0700e-003	0.0235	0.0151	4.0000e-005		8.9000e-004	8.9000e-004		8.2000e-004	8.2000e-004	0.0000	3.2321	3.2321	1.0500e-003	0.0000	3.2582
Total	**2.0700e-003**	**0.0235**	**0.0151**	**4.0000e-005**	**2.3900e-003**	**8.9000e-004**	**3.2800e-003**	**2.6000e-004**	**8.2000e-004**	**1.0800e-003**	**0.0000**	**3.2321**	**3.2321**	**1.0500e-003**	**0.0000**	**3.2582**

3.2 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	3.0000e-005	3.1000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0767	0.0767	0.0000	0.0000	0.0768
Total	**5.0000e-005**	**3.0000e-005**	**3.1000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0767**	**0.0767**	**0.0000**	**0.0000**	**0.0768**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.3000e-004	0.0000	9.3000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0700e-003	0.0235	0.0151	4.0000e-005		8.9000e-004	8.9000e-004		8.2000e-004	8.2000e-004	0.0000	3.2321	3.2321	1.0500e-003	0.0000	3.2582
Total	**2.0700e-003**	**0.0235**	**0.0151**	**4.0000e-005**	**9.3000e-004**	**8.9000e-004**	**1.8200e-003**	**1.0000e-004**	**8.2000e-004**	**9.2000e-004**	**0.0000**	**3.2321**	**3.2321**	**1.0500e-003**	**0.0000**	**3.2582**

3.2 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	3.0000e-005	3.1000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0767	0.0767	0.0000	0.0000	0.0768
Total	**5.0000e-005**	**3.0000e-005**	**3.1000e-004**	**0.0000**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0767**	**0.0767**	**0.0000**	**0.0000**	**0.0768**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6200e-003	0.0510	0.0277	6.0000e-005		2.2300e-003	2.2300e-003		2.0500e-003	2.0500e-003	0.0000	5.4308	5.4308	1.7600e-003	0.0000	5.4747
Total	**4.6200e-003**	**0.0510**	**0.0277**	**6.0000e-005**	**0.0197**	**2.2300e-003**	**0.0219**	**0.0101**	**2.0500e-003**	**0.0122**	**0.0000**	**5.4308**	**5.4308**	**1.7600e-003**	**0.0000**	**5.4747**

3.3 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	7.0000e-005	7.8000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1918	0.1918	1.0000e-005	0.0000	0.1919
Total	**1.2000e-004**	**7.0000e-005**	**7.8000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1918**	**0.1918**	**1.0000e-005**	**0.0000**	**0.1919**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.6700e-003	0.0000	7.6700e-003	3.9400e-003	0.0000	3.9400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6200e-003	0.0510	0.0277	6.0000e-005		2.2300e-003	2.2300e-003		2.0500e-003	2.0500e-003	0.0000	5.4308	5.4308	1.7600e-003	0.0000	5.4747
Total	**4.6200e-003**	**0.0510**	**0.0277**	**6.0000e-005**	**7.6700e-003**	**2.2300e-003**	**9.9000e-003**	**3.9400e-003**	**2.0500e-003**	**5.9900e-003**	**0.0000**	**5.4308**	**5.4308**	**1.7600e-003**	**0.0000**	**5.4747**

3.3 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	7.0000e-005	7.8000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1918	0.1918	1.0000e-005	0.0000	0.1919
Total	**1.2000e-004**	**7.0000e-005**	**7.8000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1918**	**0.1918**	**1.0000e-005**	**0.0000**	**0.1919**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1123	0.8835	0.8684	1.5100e-003		0.0425	0.0425		0.0407	0.0407	0.0000	125.6465	125.6465	0.0242	0.0000	126.2525
Total	**0.1123**	**0.8835**	**0.8684**	**1.5100e-003**		**0.0425**	**0.0425**		**0.0407**	**0.0407**	**0.0000**	**125.6465**	**125.6465**	**0.0242**	**0.0000**	**126.2525**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5300e-003	0.0890	0.0165	2.3000e-004	5.6000e-003	2.4000e-004	5.8400e-003	1.6200e-003	2.3000e-004	1.8500e-003	0.0000	22.3160	22.3160	9.6000e-004	0.0000	22.3400
Worker	8.9700e-003	5.5600e-003	0.0583	1.6000e-004	0.0178	1.2000e-004	0.0180	4.7400e-003	1.1000e-004	4.8500e-003	0.0000	14.3127	14.3127	3.8000e-004	0.0000	14.3221
Total	**0.0115**	**0.0946**	**0.0748**	**3.9000e-004**	**0.0234**	**3.6000e-004**	**0.0238**	**6.3600e-003**	**3.4000e-004**	**6.7000e-003**	**0.0000**	**36.6286**	**36.6286**	**1.3400e-003**	**0.0000**	**36.6621**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1123	0.8835	0.8684	1.5100e-003		0.0425	0.0425		0.0407	0.0407	0.0000	125.6463	125.6463	0.0242	0.0000	126.2523
Total	**0.1123**	**0.8835**	**0.8684**	**1.5100e-003**		**0.0425**	**0.0425**		**0.0407**	**0.0407**	**0.0000**	**125.6463**	**125.6463**	**0.0242**	**0.0000**	**126.2523**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5300e-003	0.0890	0.0165	2.3000e-004	3.6300e-003	2.4000e-004	3.8600e-003	1.1300e-003	2.3000e-004	1.3600e-003	0.0000	22.3160	22.3160	9.6000e-004	0.0000	22.3400
Worker	8.9700e-003	5.5600e-003	0.0583	1.6000e-004	0.0101	1.2000e-004	0.0102	2.8500e-003	1.1000e-004	2.9500e-003	0.0000	14.3127	14.3127	3.8000e-004	0.0000	14.3221
Total	**0.0115**	**0.0946**	**0.0748**	**3.9000e-004**	**0.0138**	**3.6000e-004**	**0.0141**	**3.9800e-003**	**3.4000e-004**	**4.3100e-003**	**0.0000**	**36.6286**	**36.6286**	**1.3400e-003**	**0.0000**	**36.6621**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0848	0.6744	0.7036	1.2400e-003		0.0304	0.0304		0.0291	0.0291	0.0000	102.8125	102.8125	0.0194	0.0000	103.2986
Total	**0.0848**	**0.6744**	**0.7036**	**1.2400e-003**		**0.0304**	**0.0304**		**0.0291**	**0.0291**	**0.0000**	**102.8125**	**102.8125**	**0.0194**	**0.0000**	**103.2986**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4400e-003	0.0569	0.0113	1.9000e-004	4.5800e-003	6.0000e-005	4.6400e-003	1.3200e-003	6.0000e-005	1.3800e-003	0.0000	17.8284	17.8284	5.8000e-004	0.0000	17.8428
Worker	6.7900e-003	4.0500e-003	0.0431	1.2000e-004	0.0146	9.0000e-005	0.0147	3.8800e-003	8.0000e-005	3.9600e-003	0.0000	11.2765	11.2765	2.7000e-004	0.0000	11.2833
Total	**8.2300e-003**	**0.0610**	**0.0544**	**3.1000e-004**	**0.0192**	**1.5000e-004**	**0.0193**	**5.2000e-003**	**1.4000e-004**	**5.3400e-003**	**0.0000**	**29.1049**	**29.1049**	**8.5000e-004**	**0.0000**	**29.1261**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0848	0.6744	0.7036	1.2400e-003		0.0304	0.0304		0.0291	0.0291	0.0000	102.8124	102.8124	0.0194	0.0000	103.2985
Total	**0.0848**	**0.6744**	**0.7036**	**1.2400e-003**		**0.0304**	**0.0304**		**0.0291**	**0.0291**	**0.0000**	**102.8124**	**102.8124**	**0.0194**	**0.0000**	**103.2985**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4400e-003	0.0569	0.0113	1.9000e-004	2.9700e-003	6.0000e-005	3.0300e-003	9.3000e-004	6.0000e-005	9.8000e-004	0.0000	17.8284	17.8284	5.8000e-004	0.0000	17.8428
Worker	6.7900e-003	4.0500e-003	0.0431	1.2000e-004	8.2800e-003	9.0000e-005	8.3700e-003	2.3300e-003	8.0000e-005	2.4100e-003	0.0000	11.2765	11.2765	2.7000e-004	0.0000	11.2833
Total	**8.2300e-003**	**0.0610**	**0.0544**	**3.1000e-004**	**0.0113**	**1.5000e-004**	**0.0114**	**3.2600e-003**	**1.4000e-004**	**3.3900e-003**	**0.0000**	**29.1049**	**29.1049**	**8.5000e-004**	**0.0000**	**29.1261**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.4000e-003	0.0431	0.0584	9.0000e-005		2.1700e-003	2.1700e-003		2.0000e-003	2.0000e-003	0.0000	7.7564	7.7564	2.4600e-003	0.0000	7.8179
Paving	2.4000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.6400e-003**	**0.0431**	**0.0584**	**9.0000e-005**		**2.1700e-003**	**2.1700e-003**		**2.0000e-003**	**2.0000e-003**	**0.0000**	**7.7564**	**7.7564**	**2.4600e-003**	**0.0000**	**7.8179**

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.7000e-004	1.7700e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4618	0.4618	1.0000e-005	0.0000	0.4621
Total	**2.8000e-004**	**1.7000e-004**	**1.7700e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4618**	**0.4618**	**1.0000e-005**	**0.0000**	**0.4621**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.4000e-003	0.0431	0.0584	9.0000e-005		2.1700e-003	2.1700e-003		2.0000e-003	2.0000e-003	0.0000	7.7564	7.7564	2.4600e-003	0.0000	7.8178
Paving	2.4000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.6400e-003**	**0.0431**	**0.0584**	**9.0000e-005**		**2.1700e-003**	**2.1700e-003**		**2.0000e-003**	**2.0000e-003**	**0.0000**	**7.7564**	**7.7564**	**2.4600e-003**	**0.0000**	**7.8178**

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.7000e-004	1.7700e-003	1.0000e-005	3.4000e-004	0.0000	3.4000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.4618	0.4618	1.0000e-005	0.0000	0.4621
Total	**2.8000e-004**	**1.7000e-004**	**1.7700e-003**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**3.4000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.4618**	**0.4618**	**1.0000e-005**	**0.0000**	**0.4621**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5579					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6000e-004	6.5100e-003	9.0600e-003	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2785
Total	**0.5588**	**6.5100e-003**	**9.0600e-003**	**1.0000e-005**		**3.5000e-004**	**3.5000e-004**		**3.5000e-004**	**3.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2785**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	8.0000e-005	8.2000e-004	0.0000	2.8000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2155	0.2155	1.0000e-005	0.0000	0.2156
Total	**1.3000e-004**	**8.0000e-005**	**8.2000e-004**	**0.0000**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**7.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2155**	**0.2155**	**1.0000e-005**	**0.0000**	**0.2156**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5579					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6000e-004	6.5100e-003	9.0600e-003	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2785
Total	**0.5588**	**6.5100e-003**	**9.0600e-003**	**1.0000e-005**		**3.5000e-004**	**3.5000e-004**		**3.5000e-004**	**3.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2785**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	8.0000e-005	8.2000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	5.0000e-005	0.0000	0.2155	0.2155	1.0000e-005	0.0000	0.2156
Total	**1.3000e-004**	**8.0000e-005**	**8.2000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.2155**	**0.2155**	**1.0000e-005**	**0.0000**	**0.2156**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Heavy Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Heavy Industry	0.541226	0.031357	0.176167	0.121135	0.017229	0.004544	0.020399	0.079136	0.001813	0.001177	0.004121	0.001075	0.000622
Parking Lot	0.541226	0.031357	0.176167	0.121135	0.017229	0.004544	0.020399	0.079136	0.001813	0.001177	0.004121	0.001075	0.000622

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3130	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7900e-003	1.7900e-003	0.0000	0.0000	1.9000e-003
Unmitigated	0.3130	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7900e-003	1.7900e-003	0.0000	0.0000	1.9000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3130					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7900e-003	1.7900e-003	0.0000	0.0000	1.9000e-003
Total	**0.3130**	**1.0000e-005**	**9.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.7900e-003**	**1.7900e-003**	**0.0000**	**0.0000**	**1.9000e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3130					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7900e-003	1.7900e-003	0.0000	0.0000	1.9000e-003
Total	**0.3130**	**1.0000e-005**	**9.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.7900e-003**	**1.7900e-003**	**0.0000**	**0.0000**	**1.9000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX C – MOBILE SOURCE EMISSIONS

Appendix C:
Mobile Source Emissions

Air Quality and GHG
Technical Report

Prepared for:

Tulare County
Solid Waste Department
Compost and Bioenergy Facilities
Visalia Landfill
8614 Avenue 328
Visalia, CA 93291

July 2021

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List of Acronyms and Abbreviations

BHp	Brake Horsepower
BSFC	Brake Specific Fuel Consumption
CARB	California Air Resources Board
CAS No.	Chemical Abstract Service Number
Cf	Rain Correction Factor
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DPM	Diesel Particulate Matter
EF	Emission Factor
EPA	[United States] Environmental Protection Agency
g	Gram
gal	Gallon
GHG	Greenhouse Gas
GWP	Global Warming Potential
hr	Hour
IPCC	Intergovernmental Panel on Climate Change
k	Particle Size Multiplier
kg	Kilogram
lb	Pound
LDT1	Light Duty Truck (EMFAC Category 1)
LDT2	Light Duty Truck (EMFAC Category 2)
m^2	Square Meter
MPH	Miles per Hour
MT	Metric Ton
N_2O	Nitrous Oxide
No.	Number
NO_x	Nitrogen Oxides
$PM_{2.5}$	Fine Particulate Mater
PM_{10}	Respirable Particulate Matter
SCAQMD	South Coast Air Quality Management District
SJVAPCD	San Joaquin Valley Air Pollution Control District
sL	Silt Load
SO_x	Sulfur Oxides
TAC	Toxic Air Contaminant
TPD	Tons per Day
TPY	Tons per Year
VMT	Vehicle Miles Traveled

VOC	Volatile Organic Compounds
W	Average Roadway Fleet Weight (Tons)
wt.	Weight
yr	Year

Appendix C: Mobile Source Emissions

1.0 INTRODUCTION

1.1 Overview

Emissions estimates have been prepared for the mobile sources required to operate the proposed composting and bioenergy facilities at the Visalia Landfill in Tulare County. Emissions estimates have been prepared for the following source categories:

- Vehicle and Equipment Exhaust Emissions:
  - Onroad Vehicle Exhaust Emissions; and
  - Offroad Equipment Exhaust Emissions;
- Dust/Particulate Emissions:
  - Fugitive Dust from Travel on Paved Roads; and
  - Fugitive Dust from Travel on Unpaved Areas;
- Toxic Air Contaminant (TAC) Emissions:
  - Vehicle and Equipment Exhaust TAC Emissions:
    - Diesel Exhaust Emissions; and
    - Gasoline Exhaust Emissions;
  - Dust and Particulate TAC Emissions:
    - Paved Road Dust TAC Emissions, and
    - Unpaved Road Dust TAC Emissions.

For each category of emissions, the calculation methodology is explained and the data and assumptions used in the calculations are provided. Emissions are summarized by category in each section. A comprehensive summary of mobile source criteria pollutant emissions is provided in Section 4.0. Emission calculation worksheets are provided in Attachment C-1.

1.2 Facility Throughput

Although the proposed composting facility will be constructed in phases [100,000 tons per year (TPY) in Phase 1, 50,000 TPY in Phase 2, and 50,000 TPY in Phase 3], the operational emissions are estimated based on the full facility process rate of 200,000 TPY. The bioenergy facility will process 25,000 TPY of woody biomass feedstock. The compost facility will produce finished compost for shipment to customers, and the bioenergy facility will produce biochar for shipment to customers. The process throughput used in this analysis is summarized in Table 1-1.

Table 1-1: Process Throughput

Material	Compost Facility		Bioenergy Facility	
	TPY	TPD	TPY	TPD
Feedstock	200,000	641	25,000	68
Finished Product	120,000	385	1620	4

2.0 VEHICLE AND EQUIPMENT EXHAUST EMISSIONS

2.1 Onroad Vehicle Exhaust Emissions

Employee travel, routine business travel, and the transport of raw materials to the facility and finished product from the facility result in onroad vehicle exhaust emissions.

2.1.1 Methodology

Emissions from motor vehicles are estimated using factors that relate emissions of a given air contaminant to vehicle miles traveled (VMT). Emissions from motor vehicles are typically determined using emission factors that are representative of a given vehicle category (e.g., passenger car, light-duty truck) and fuel type that reflect the characteristics of the population of the vehicle type in a given vehicle fleet. The fleet emission factors reflect the characteristics of the vehicles in the fleet, such as the type of vehicle, the age of the vehicle, the weight of the vehicle, fuel efficiency, etc. The factors also reflect the demographics of the region(s) in which the vehicles are operated and the regulatory requirements applicable to the types of vehicles which comprise the fleet.

The emission factors change on an annual basis as older vehicles are replaced by new vehicles and as regulatory requirements that mandate lower standards become effective. Consequently, the models used to generate these factors are complex. In California, the recommended model for calculating emissions from onroad mobile sources is EMFAC2017 (CARB 2017), developed and maintained by the California Air Resources Board (CARB). The EMFAC2017 model was used to generate emission factors required for calculating the onroad emissions from the vehicle fleet required for operation of the proposed composting and bioenergy facilities.

The fleet consists of the vehicles used to transport personnel and supplies to the facility, conduct routine business activities, and deliver compost and biochar product to end users. There is no change expected in the emissions associated with hauling feedstock to the facility; the feedstock would be generated at the same locations and delivered to the Visalia Landfill. Under business-as-usual operations, the feedstock would be landfilled. Under the proposed project scenario, the feedstock would be diverted to the compost facility. Feedstock transportation emissions would be approximately the same and are not estimated.

Onroad emissions include running exhaust, idling exhaust, and startup exhaust. Fugitive particulate emissions include tire wear and brake wear. Fugitive hydrocarbon emissions include running loss, resting loss, hot soak, and diurnal emissions. The off-site mileage and the on-site mileage are also used to calculate fugitive dust emissions from travel on paved and unpaved roads.

Emissions are calculated for each vehicle category and fuel type using the total VMT (or other information, depending on the EMFAC2017 component being calculated) for 2030, the first year of Composting Phase 3 activities, which is representative of the project at full buildout, and the period with the highest operational emissions. Calculation procedures are summarized in Table 2-1.

Table 2-1: EMFAC2017 Components Included in Onroad Vehicle Emission Calculations

EMFAC2017 Component		Calculation Procedure
g/VMT	Running Exhaust	Calculated using annual VMT
	Tire & Brake Wear	Calculated using annual VMT
g/Trip	Startup	Calculated from number of trips
	Hot Soak	Calculated from number of trips
	Running Loss	Calculated from number of trips
g/Vehicle-Day	Idle Exhaust	Emission Factor (EF) converted to g/trip and emissions calculated from number of trips
	Resting Loss	EF converted to g/trip and emissions calculated from number of trips
	Diurnal Loss	EF converted to g/trip and emissions calculated from number of trips

2.1.2 Vehicle Activity

The daily operation of the composting facility will require the use of onroad mobile sources for transport of personnel, conducting routine business, the transport of feedstock, and the transport of finished product. Operational activities are listed in Table 2-2.

Table 2-2: Operational Activities

Activity	Required Vehicles
Employee commute	Light-duty cars or trucks for employee commute
Misc. business activity	Light-duty truck for routine business (third party)
Laboratory services	Light-duty trucks for field sampling compost
Delivery of office supplies	Step van for delivery of office supplies
Deliver feedstock	Heavy-Heavy-Duty Diesel Truck (20 cubic yard capacity)
Transport product	Heavy-Heavy-Duty Diesel Truck (20 cubic yard capacity)

The EMFAC2017 model was run to derive emission factors for the LDT1, LDT2, and T7 vehicles. The EMFAC2017 factors used for calculating emissions from the onroad mobile sources are included in Table 3 in Attachment C-1.

On-site mileage for feedstock delivery was based on the distance from the facility access gate to the furthest point of the proposed compost facility. (The bioenergy facility is closer to the access gate; thus, use of the compost distance for all travel ensures that emissions are not underestimated.) On-site mileage for product delivery trucks is based on the distance from the processing area to the facility access gate. Off-site mileage for the finished compost delivery trucks assumes the distance from the facility to the Tulare County line to the south. Off-site mileage for the workers assumes that all workers live in Visalia. As noted elsewhere, because the compost and bioenergy facilities are co-located at the landfill, there will be no new emissions associated with feedstock transport to the compost or bioenergy facilities. Table 2-3 summarizes the information used with the EMFAC emission factors to calculate the onroad mobile source emissions at the maximum requested processing rate for the compost facility of 200,000 TPY and 25,000 TPY for the bioenergy facility.

Table 2-3: Onroad Mobile Source Activity for Composting and Bioenergy Facilities

Vehicle Type[1]	Vehicle Use	Oper. Days	Veh/ Day	One-Way Trips per Vehicle	One-Way Trips per Year	One-Way On-Site Trip Mileage	One-Way Off-Site Trip Mileage	Annual Travel (VMT/yr)
LDT1	Supervisor	312	2	2	1,248	0.85	15	19,781
LDT1	Technical Staff	312	2	2	1,248	0.85	15	19,781
LDT1	Mechanic	312	2	2	1,248	0.85	15	19,781
LDT1	Equipment Operators	312	14	2	8,736	0.85	15	138,466
LDT1	Personnel for Facility	312	3	2	1,872	0.85	15	29,671
LDT1	Miscellaneous Business	104	2	2	416	0.85	15	6,594
LDT1	Laboratory Services	104	2	2	416	0.85	15	6,594
LHD2	Delivery of Office Supplies	104	2	2	416	0.85	15	6,594
T7 Tractor	Ship Raw Material to Facility[2]	312	0	0	0	0.00	0	0
T7 Tractor	Ship Product from Facility	312	50	2	31,200	0.85	38	1,212,120

Notes:

1. LDT1 (Light Duty Truck), LHD2 (Light-Heavy-Duty), and T7 Tractor (diesel) refer to vehicle categories in EMFAC2017. LDT1 is gasoline fueled; LHD2 and T7 are diesel fueled.
2. There is no change expected in the emissions associated with hauling feedstock to the facility; the feedstock would be generated at the same locations and delivered to the Visalia Landfill. Under business-as-usual operations, the feedstock would be landfilled. Under the proposed project scenario, the feedstock would be diverted to the compost or bioenergy facilities. Feedstock transportation emissions would be approximately the same and are not estimated.

2.1.3 Onroad Vehicle Exhaust Emissions

The annual emissions were calculated for 2030. The emission estimates are summarized in Tables 2-4 and 2-5 for criteria pollutants and GHG, respectively.

Table 2-4: Criteria Pollutant Emissions from Onroad Operations Vehicles

Type	NO_x (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)	$PM_{2.5}$ (lb/yr)
Exhaust	5453.92	73.27	983.81	29.71	76.87	73.52
Fugitive	–	26.45	–	–	286.14	104.68
Total (lb/yr)	5453.92	99.72	983.81	29.71	363.02	178.20
Total (TPY)	2.73	0.05	0.49	0.01	0.18	0.09

Table 2-5: GHG Emissions from Onroad Mobile Source Activity

CO_2 (MT/yr)	CH_4 (kg/yr)	N_2O (kg/yr)	Total CO_2e (MT/yr)
1,425	2.47	215.36	1,489

2.2 Offroad Equipment Exhaust Emissions

The exhaust emissions from the use of offroad equipment required for composting and bioenergy facility operation are discussed in this section. Offroad equipment includes the on-site fleet of heavy-duty construction equipment (tractors, excavators, loaders, water trucks and fuel trucks, etc.) used for facility operation.

2.2.1 Methodology

Exhaust emissions from offroad equipment depend on the type of engine used to power the equipment, the size of the engine [i.e., brake horsepower (BHp)], the engine load, and the equipment operating hours. Most of this information is derived from the project description. In cases where information was missing, the information was obtained from the equipment manufacturer or determined using published factors or data. For offroad equipment, the emissions of a given air contaminant were calculated using Equation 2-1.

$$E\ (lb/yr) = (g/BHp)*(BHp)*(Load)*(hr/yr)*(lb/453.6\ g) \qquad \text{(Eq. 2-1)}$$

Where:

E (lb/yr) is the annual emissions of a given pollutant.

g/BHp is the emission factor for the pollutant for the Environmental Protection Agency (EPA) Tier of the given engine.

BHp is the engine's maximum brake horsepower rating.

Load is the engine load, determined from manufacturers' information or obtained from the literature (CAPCOA 2021).

hr/yr is the operating hours of the facility, assumed to be 9 hours per day for all equipment except the fuel truck, which is assumed to operate 2 hours per day.

The equipment used for processing organic feedstock and finished compost are assumed to be equipped with Tier 4-final engines. The emission calculations use Tier 4-final engine emission factors. The criteria pollutant and greenhouse gas (GHG) emission factors for the offroad equipment are summarized in Tables 2-6 and 2-7, respectively.

Table 2-6: Offroad Equipment Criteria Pollutant Emission Factors[1]

Equipment	NO_x (g/BHp-hr)	VOC (g/BHp-hr)	CO (g/BHp-hr)	SO_x (g/BHp-hr)	PM_{10} (g/BHp-hr)	$PM_{2.5}$ (g/BHp-hr)
Fuel Truck	0.30	0.14	2.60	0.005	0.010	0.010
Tractors	0.30	0.14	2.60	0.005	0.010	0.010
Excavator	0.30	0.14	2.60	0.005	0.010	0.010
Loader	0.30	0.14	2.60	0.005	0.010	0.010
Water Truck	0.30	0.14	2.60	0.005	0.010	0.010
Sweeper Truck	0.30	0.14	2.60	0.005	0.010	0.010

Notes:

1. DieselNet 2021.

Table 2-7: Offroad Equipment GHG Emission Factors and GWP

Fuel/GWP	CO_2 (kg/gal)	CH_4 (g/gal)	N_2O (g/gal)	Reference
Diesel	10.21	0.410	0.080	EPA 2009
GWP	1	25	298	IPCC 2014

2.2.2 Offroad Equipment List and Operating Requirements

The equipment and operating parameters required for the processing of organic feedstock at the compost facility of 200,000 TPY, and 25,000 TPY at the bioenergy facility are summarized in Table 2-8.

Table 2-8: Offroad Equipment Information

Unit Count	Equipment	Engine Tier	BHp	BSFC (lb/HP-hr	Load[1]	hr/day	hr/yr
1	Fuel Truck	4f	350	0.3602	0.38	2.00	624
1	Tractors	4f	200	0.3602	0.37	9.00	2,808
1	Excavator	4f	201	0.3602	0.38	9.00	2,808
6	Loader	4f	250	0.3602	0.37	9.00	2,808
1	Water Truck	4f	350	0.3602	0.38	9.00	2,808
1	Sweeper Truck	4f	240	0.3602	0.46	9.00	2,808

Notes:

1. CAPCOA 2021, Table 3.3.

2.2.3 Offroad Equipment Exhaust Emissions

The exhaust emissions from the equipment are calculated from the equipment operating hours, horsepower, engine load, and EPA tiered engine emission factors for the engines. The criteria pollutant emissions resulting from operation of the compost facility are presented by equipment type in Table 2-9. GHG emissions are presented in Table 2-10. Emission calculations are provided in Table 6 in Attachment C-1.

Table 2-9: Offroad Equipment Exhaust Emissions

Equipment	NO_x (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)	$PM_{2.5}$ (lb/yr)
Fuel Truck	54.89	25.61	475.70	0.90	1.83	1.83
Tractors	122.16	57.01	1,058.71	2.00	4.07	4.07
Excavator	126.09	58.84	1,092.76	2.06	4.20	4.20
Loader	763.49	356.30	6,616.93	12.48	25.45	25.45
Water Truck	219.56	102.46	1,902.81	3.59	7.32	7.32
Sweeper Truck	182.25	85.05	1,579.48	2.98	6.07	6.07
Lb/yr	1,468.43	685.27	12,726.40	23.99	48.95	48.95
TPY	0.73	0.34	6.36	0.01	0.02	0.02

Table 2-10: Offroad Equipment Exhaust GHG Emissions

Equipment	Fuel (Gal/Yr)	CO_2 (MT/Yr)	CH_4 (MT/Yr)	N_2O (MT/Yr)	CO_2e (MT/Yr)
Fuel Truck	4,240	43	2	0	43
Tractors	9,437	96	4	1	97
Excavator	9,741	99	4	1	100
Loader	58,984	602	24	5	604
Water Truck	16,962	173	7	1	174
Sweeper Truck	14,080	144	6	1	144
Total	113,444	1,158	47	9	1,162

3.0 DUST/PARTICULATE EMISSIONS

Operations that involve the movement of material or that expose or disturb erodible surfaces may generate fugitive dust. During composting and bioenergy facility operations, fugitive dust is generated by a variety of activities, such as the transport of material on paved and unpaved roads, material handling, and wind erosion.

Fugitive dust emissions were calculated using EPA-recommended equations that generate "predictive emission factors" that are specific to the given activity. The calculations generally take into account the silt and moisture content of the material. The methodologies and detailed emission calculations are presented in the following sections.

3.1 Fugitive Dust from Travel on Paved Roads

3.1.1 Methodology

Particulate emissions may occur whenever a vehicle travels on a paved roadway surface due to the resuspension of silt that accumulates on the roadway surface. Emissions from travel on paved roads are calculated using Equation 3-1, which is reproduced from EPA AP-42, Chapter 13.2.1, Paved Roads (EPA 2011).

$$EF = k \times (sL)^{0.91} \times W^{1.02} \times Cf \qquad \text{(Eq. 3-1)}$$

Where:

EF = Emission factor (grams/VMT)

k = Particle size multiplier (dimensionless)

sL = Roadway silt loading (g/m^2)

W = Average roadway fleet weight (tons)

Cf = Rain correction factor (Cf = 1-P/4N, where P is the number of days with at least 0.01 inch rain and N is the number of days in the period, i.e., 365)

Table 3-1: Paved Road Emission Factor Data

Variable	Value
k (PM_{10})	1.00 g/VMT
k ($PM_{2.5}$)	0.25 g/VMT
Rain Days[1]	51 days/year

Notes:
1. CAPCOA 2021, Table 1.1.

Because daily emissions are relevant to the analysis and it does not rain daily, the rain correction factor is excluded from the calculations. This approach ensures that daily emissions are not underestimated and that the annual emissions are conservative (i.e., are likely overestimated).

It is important to note that Equation 3-1 calls for the average weight of all vehicles traveling the road. For example, if 99% of traffic on the road consists of 2-ton cars/trucks while the remaining 1% consists of 20-ton trucks, then the mean weight "W" is 2.2 tons. More specifically, Equation 3-1 is not intended to be used to calculate a separate emission factor for each vehicle weight class. Instead, only one emission factor should be calculated to represent the "fleet" average weight of all vehicles traveling the road (EPA 2011). According to CARB, the average fleet weight in California is 2.4 tons.

Emissions from paved roads depend on the roadway silt loading, which in turn depends on the volume of traffic experienced by a given type of roadway. The roadway silt content used in the calculations was obtained from the area source methodology used by the San Joaquin Valley Air Pollution Control District (SJVAPCD) for calculating fugitive dust emissions from paved roads. The SJVAPCD-recommended silt loading factors by road type are listed in Table 3-2. The calculated respirable particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$) emission factors for each road type are shown in Table 3-3.

Table 3-2: Paved Road Silt Loading[1]

Freeway (g/m^2)	Major (g/m^2)	Collector (g/m^2)	Local (g/m^2)	Rural[2] (g/m^2)	On-Site[3] (g/m^2)
0.020	0.035	0.035	0.320	1.60	1.60

Notes:

1. SJVAPCD 2005.
2. The rural roadway type is a roadway type specific to the SJVAPCD methodology. It is intended to capture roadways that have higher than normal silt loading to the nature of the vehicular traffic (i.e., agricultural, industrial, oilfield).
3. On-site surfaces are assumed to be paved with asphalt or concrete. Silt loading is assumed to be similar to rural roads.

Table 3-3: Paved Road Particulate Emission Factors

Pollutant	Freeway (lb/VMT)	Major (lb/VMT)	Collector (lb/VMT)	Local (lb/VMT)	Rural (lb/VMT)	On-Site (lb/VMT)
PM_{10}	1.48E-04	2.46E-04	2.46E-04	1.84E-03	7.96E-03	7.96E-03
$PM_{2.5}$	3.69E-05	6.14E-05	6.14E-05	4.60E-04	1.99E-03	1.99E-03

3.1.2 Paved Road VMT

The VMT on a given type of roadway segment was determined by multiplying the total VMT for the activity by the "segment fraction of total travel" on the types of paved roadways in California; the distribution is summarized in Table 3-4. The travel distances broken down by vehicle type and road type are summarized in Table 3-5.

Table 3-4: Distribution of VMT by Roadway Type[1]

Freeway	Major	Collector	Local	Rural	On-Site
33.25%	38.97%	27.59%	0.19%	Note 2	Calculated[3]

Notes:

1. SJVAPCD 2005.
2. Rural is assumed to be 0.25 miles, one way.
3. On-site distances are calculated based on the distance from the access gate to the furthest point of the processing areas for all vehicles and feedstock delivery trucks, and from the access gate to the finished processing area for the product shipping trucks.

Table 3-5: Summary of Onroad VMT by Vehicle and Road Type

Activity	Unit of Measure	Freeway	Major	Collector	Local	Rural	On-Site
Supervisor	VMT/day	19.95	23.38	16.55	0.12	1.00	3.4
	VMT/yr	6,224	7,295	5,165	37.44	312.00	1,061
Technical Staff	VMT/day	19.95	23.38	16.55	0.12	1.00	3.4
	VMT/yr	6,224	7,295	5,165	37.44	312.00	1,061
Mechanic	VMT/day	20	23	17	0.12	1.00	3.4
	VMT/yr	6,224	7,295	5,165	37.44	312.00	1,061
Equipment Operators	VMT/day	140	164	116	0.84	7.00	23.8
	VMT/yr	43,571	51,066	36,154	262.08	2184.00	7,426
Personnel for Facility	VMT/day	30	35	25	0.18	1.50	5.1
	VMT/yr	9,337	10,943	7,747	56.16	468.00	1,591
Miscellaneous Business	VMT/day	20	23	17	0.12	1.00	3.4
	VMT/yr	2,075	2,432	1,722	12.48	104.00	354
Laboratory Services	VMT/day	20	23	17	0.12	1.00	3.4
	VMT/yr	2,075	2,432	1,722	12.48	104.00	354
Delivery of Office Supplies	VMT/day	20	23	17	0.12	1.00	3.4
	VMT/yr	2,075	2,432	1,722	12.48	104.00	354
Ship Feedstock to Facility[1]	VMT/day	0	0	0	0.00	0.00	0
	VMT/Yr	0	0	0	0.00	0.00	0
Ship Product from Facility	VMT/day	1,264	1,481	1,048	7.60	25.00	85
	VMT/yr	394,212	462,028	327,107	2,371	7,800	26,520

Notes:

1. There is no change expected in the emissions associated with hauling feedstock to the facility; the feedstock would be generated at the same locations and delivered to the Visalia Landfill. Under business-as-usual operations, the feedstock would be landfilled. Under the proposed project scenario, the feedstock would be diverted to the compost facility. Feedstock transportation emissions would be approximately the same and are not estimated.

3.1.3 Paved Roads Particulate Emissions

The fugitive dust emissions from motor vehicle travel on paved public roads were calculated from the VMT on a given type of roadway segment (Table 3-5) and the emission factor corresponding to the roadway segment type (Table 3-3). The predicted emissions are summarized in Table 3-6. Paved road particulate emission calculations are provided in Table 4 in Attachment C-1.

Table 3-6: Paved Road Particulate Emissions

Pollutant	Freeway	Major	Collector	Local	Rural	On-Site	Total
PM_{10} (lb/day)	0.23	0.45	0.32	0.02	0.31	1.07	2.39
$PM_{2.5}$ (lb/day)	0.06	0.11	0.08	0.00	0.08	0.27	0.60
PM_{10} (lb/yr)	69.70	135.93	96.24	5.23	93.17	316.76	717.02
$PM_{2.5}$ (lb/yr)	17.42	33.98	24.06	1.31	23.29	79.19	179.25

3.2 Fugitive Dust from Travel on Unpaved Areas

The proposed compost facility will be paved with concrete (the compost pads and storage areas) or asphalt (access roads); therefore, the onroad vehicles are not anticipated to have any travel on unpaved surfaces. However, the active composting areas are expected to have compost residuals on working surfaces, despite regular sweeping and watering for dust suppression. Entrained dust from equipment travel on these paved surfaces is approximated using the methodology for equipment travel on unpaved surfaces. However, the water trucks and sweeper truck travel are assumed to cause no entrained dust due to watering and sweeping.

3.2.1 Methodology

Emissions from unpaved roads were estimated using predictive emission factors derived from EPA-recommended equations. The predictive emission factors are a function of the vehicle weight and the silt content of the roadway surface. The total emissions attributed to travel on unpaved roads were calculated from total VMT and the predictive emission factors. The EPA equation used for determining the appropriate factor was obtained from EPA AP-42 Fifth Edition, Chapter 13, Section 13.2.2, Equation 1a (EPA 2006a), and is reproduced as Equation 3-2.

$$EF = k \times \left(\frac{s}{12}\right)^a \times \left(\frac{W}{3}\right)^b \times Cf \qquad \text{(Eq. 3-2)}$$

Where:

EF = Emission Factor (lb/VMT)

k = Particle size multiplier

sL = Material silt content (%)

W = Mean vehicle fleet weight (tons)

a, b = Empirical constants

Cf = Rain correction factor (1-N/365)

Table 3-7: Unpaved Road Emission Factor Data

Constant	$PM_{2.5}$	PM_{10}
k	0.15	1.5
a	0.9	0.9
b	0.45	0.45
Rain Days[1]	51 days/yr	

Notes:

1. CAPCOA 2021, Table 1.1.

Because daily emissions are relevant to the analysis and it does not rain daily, the rain correction factor is excluded from the calculations. This approach ensures that daily emissions are not underestimated and that the annual emissions are conservative (i.e., are likely overestimated).

An uncontrolled emission factor was determined for each type of vehicle or equipment traveling on the facility's unpaved roads. The factors were calculated using the average weight (loaded, unloaded) of the vehicle and the roadway silt content. The vehicle weight was determined from the literature or manufacturer specification sheets. The roadway silt loading was obtained from EPA AP-42, Table 13.2.2-1, disposal routes at landfills (EPA 2011). Emission factors are summarized in Table 3-8.

Table 3-8: Unpaved Road Particulate Uncontrolled Emission Factors

Vehicle/Equipment Description	Emission Factor (lb/VMT)	
	PM_{10}	$PM_{2.5}$
Fuel Truck	2.0667	0.2067
Tractors	1.3171	0.1317
Excavator	2.3481	0.2348
Loader	2.1106	0.2111
Water Truck	0.0000	0.0000
Sweeper Truck	0.0000	0.0000

3.2.2 Emission Controls

The operator will use three types of emission controls to reduce emissions from equipment travel: 1) watering, with an expected control efficiency of 55% (SCAQMD 2007), 2) regulating vehicle speed to not more than 25 miles per hour, with an expected control efficiency of 44% (SCAQMD 2007), and 3) operation of a sweeper, with an expected control efficiency of 45% (Chow 2012). These controls are cumulative; the overall control efficiency is 86%.

3.2.3 Vehicle and Equipment Process Information

The use of the compost processing equipment (fuel truck, tractors, excavator, loader, water truck, sweeper truck) will result in fugitive dust from travel on unpaved roads and other unpaved areas. The on-site unpaved road mileage for equipment required for composting was calculated from the number of operating hours per day and typical speed of the offroad equipment. Mileage estimates are summarized in Table 3-9.

Table 3-9: Offroad Equipment Unpaved Road Mileage

Equipment Description and Use	Average Vehicle Wt. (tons)	Operating Hours (hr/day)	Average Speed (MPH)[1]	Total Travel (VMT/day)	Total Travel (VMT/yr)
Fuel Truck	21.5	2.0	2.0	4.0	1,248
Tractors	7.9	8.0	0.3	2.4	749
Excavator	28.6	8.0	0.3	2.4	749
Loader	22.5	8.0	0.3	12.0	3,744
Water Truck	21.5	8.0	3.0	24.0	7,488
Sweeper Truck	16.5	8.0	3.0	24.0	7,488

Notes:

1. Engineering estimate.

3.2.4 Unpaved Road Particulate Emissions

Emissions were calculated using the unpaved road dust emission factors from Table 3-8, along with the operational data presented in Table 3-9. The results are shown in Table 3-10. Emission calculations are provided in Table 7 in Attachment C-1.

Table 3-10: Offroad Equipment Unpaved Road Particulate Emissions

Description	Controlled Emissions (lb/yr)		Controlled Emissions (lb/day)	
	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
Fuel Truck	357	36	1.15	0.11
Tractors	137	14	0.44	0.04
Excavator	244	24	0.78	0.08
Loader	1095	110	3.51	0.35
Water Truck	0	0	0.00	0.00
Sweeper Truck	0	0	0.00	0.00
Total (lb/yr)	1833	183	5.88	0.59
Total (TPY)	0.9	0.1	---	---

4.0 SUMMARY OF CRITERIA POLLUTANT AND GHG EMISSIONS

The predicted emissions from the proposed compost and bioenergy facilities are summarized in Tables 4-1, 4-2, and 4-3.

Table 4-1: Summary of Daily Mobile Source Operating Emissions

Activity	NO_x (lb/day)	VOOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Onroad Vehicle Exhaust	17.48	0.32	3.15	0.10	1.16	0.57
Onroad Vehicle Paved Road Dust	---	---	---	---	2.39	0.60
Onroad Vehicle Unpaved Road Dust	---	---	---	---	0.00	0.00
Offroad Equipment Exhaust	4.71	2.20	40.79	0.08	0.16	0.16
Offroad Equipment Unpaved Dust	---	---	---	---	5.88	0.59
Total	22.19	2.52	43.94	0.17	9.59	1.91

Table 4-2: Summary of Annual Mobile Source Operating Emissions

Activity	NO_x (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)	$PM_{2.5}$ (lb/yr)
Onroad Vehicle Exhaust	5453.92	99.72	983.81	29.71	363.02	178.20
Onroad Vehicle Paved Road Dust	---	---	---	---	717.02	179.25
Onroad Vehicle Unpaved Road Dust	---	---	---	---	0.00	0.00
Offroad Equipment Exhaust	1468.43	685.27	12726.40	23.99	48.95	48.95
Offroad Equipment Unpaved Dust	---	---	---	---	1833.10	183.31
Total (lb/yr)	6922.35	784.99	13710.20	53.70	2962.08	589.72
Total (TPY)	3.46	0.39	6.86	0.03	1.48	0.29

Table 4-3: Summary of Mobile Source Operating GHG Emissions

Activity	CO_2 (MT/yr)	CH_4 (MT/yr)	N_2O (MT/yr)	CO_2e (MT/yr)
Onroad Vehicle Exhaust	1424.76	0.00	0.22	1489.00
Onroad Vehicle Paved Road Dust	---	---	---	---
Onroad Vehicle Unpaved Road Dust	---	---	---	---
Offroad Equipment Exhaust	1158.27	46.51	9.08	1162.13
Offroad Equipment Unpaved Dust	---	---	---	---
Total	2583.03	46.51	9.29	2651.13

5.0 TOXIC AIR CONTAMINANTS EMISSIONS

The emissions of toxic air contaminants (TACs) were calculated either using process information for a given activity and an appropriate emission factor, or by "speciating" the PM_{10} and volatile organic compounds (VOC) emissions using a profile that identifies the weight fraction of the TAC constituent in the parent compound.

5.1 Vehicle and Equipment Exhaust TAC Emissions

5.1.1 Diesel Exhaust Emissions

TAC emissions from diesel combustion are based on PM_{10} emissions, assuming that 100% of the PM_{10} emissions are diesel particulate matter (DPM). The DPM emissions are summarized in Table 5-1 for the onsite and near-site travel. Per SJVAPCD guidance, one-quarter mile of near-site travel is included in the TAC inventory for health risk assessment purposes. PM_{10} emissions from diesel combustion are provided in Tables 3 and 6 in Attachment C-1, and DPM emissions are summarized in Table 14 in Attachment C-1.

Table 5-1: Emissions of DPM from Diesel-Fueled Vehicles

Vehicle	PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/yr)	
	On-Site Exhaust	Near-Site Exhaust[1,2]	On-Site Exhaust	Near-Site Exhaust[1,2]
LHD2	0.000	0.000	0.019	0.005
T7 Tractor	0.027	0.008	1.659	0.488
Fuel Truck	0.001	0.000	1.830	0
Tractors	0.001	0.000	4.072	0
Excavator	0.001	0.000	4.203	0
Loader	0.009	0.000	25.450	0
Water Truck	0.003	0.000	7.319	0
Sweeper Truck	0.002	0.000	6.075	0
Total PM_{10} = DPM	0.045	0.008	50.626	0.494

1. Near-site encompasses 1/4 mile off-site, per SJVAPCD guidance. On-site mileage is 0.85 miles per one-way trip; therefore, near-site mileage is calculated to be On-site Mileage*(0.25/0.85).
2. Offroad equipment operates on-site only.

5.1.2 Gasoline Exhaust Emissions

Gasoline combustion TAC emission factors are sourced from the SJVAPCD's AB 2588 program (SJVAPCD 2017). Fuel consumption is based on an average fuel economy for gasoline-fueled light trucks of 16.2 miles per gallon (Wikipedia 2021). This is a 2002 estimate and is expected to be conservative for a 2030 emissions estimate. Travel distance for the gasoline-powered vehicles includes 0.85 miles per trip (one-way distance) on-site and 0.25 miles per trip off-site (one-way distance). VMT and fuel consumption are summarized in Table 6-2. Gasoline exhaust TAC emissions are summarized in Table 5-3. Gasoline exhaust TAC emission calculations are provided in Table 9 in Attachment C-1.

Table 5-2: Gasoline Vehicle Mileage and Fuel Consumption

Parameter	Onsite	Near-site[1]
VMT/day	41	12
Fuel Consumption (gal/day)	2.55	0.75

1. Near-site encompasses 1/4 mile off-site, per SJVAPCD guidance.

Table 5-3: Gasoline Vehicle Exhaust TAC Emissions

TAC	CAS No.	Emission Factor (lb/1,000 gal)	Hourly Emissions (lb/hr)	Annual Emissions (lb/yr)
1,2,4-Trimethylbenzene	95636	5.89E-01	2.16E-04	6.07E-01
1,3-Butadiene	106990	3.24E-01	1.19E-04	3.34E-01
Acetaldehyde	75070	1.47E-01	5.40E-05	1.52E-01
Acrolein	107028	8.25E-02	3.03E-05	8.51E-02
Benzene	71432	1.57E+00	5.76E-04	1.62E+00
Chlorine	7782505	4.55E-01	1.67E-04	4.69E-01
Copper	7440508	3.30E-03	1.21E-06	3.40E-03
Ethyl benzene	100414	6.42E-01	2.36E-04	6.62E-01
Formaldehyde	50000	1.01E+00	3.71E-04	1.04E+00
Hexane	110543	9.42E-01	3.46E-04	9.71E-01
Manganese	7439965	3.30E-03	1.21E-06	3.40E-03
Methanol	67561	2.42E-01	8.89E-05	2.50E-01
Methyl ethyl ketone	78933	1.18E-02	4.33E-06	1.22E-02
Methyl tert-butyl ether	1634044	1.15E+00	4.22E-04	1.19E+00
m-Xylene	108383	2.17E+00	7.97E-04	2.24E+00
Naphthalene	91203	2.95E-02	1.08E-05	3.04E-02
Nickel	7440020	3.30E-03	1.21E-06	3.40E-03
o-Xylene	95476	7.54E-01	2.77E-04	7.77E-01
Styrene	100425	7.07E-02	2.60E-05	7.29E-02
Toluene	108883	3.50E+00	1.29E-03	3.61E+00

5.2 Dust and Particulate TAC Emissions

Paved and unpaved road dust may contain heavy metals, which are regulated TACs. To estimate TAC emissions from road dust, the PM_{10} emissions are speciated according to a speciation profile that is specific to the road surface.

5.2.1 Paved Road Dust TAC Emissions

TAC emissions from paved road particulate are estimated by speciating the PM_{10} emissions according to the speciation profile provided by CARB per Particulate Speciation Profile #471 (CARB 2021). On-site and near-site paved road PM_{10} emissions are based on total paved road emissions of 0.15 pounds per hour and 409.93 pounds per year. The paved road dust TAC emissions are summarized in Table 5-4. Paved road dust TAC emission calculations are provided in Table 10 in Attachment C-1.

Table 5-4: Paved Road Dust TAC Emissions

TAC	CAS No.	Wt. Fraction	Emissions	
			lb/hr	lb/yr
Arsenic	7440-38-2	0.000013	2.00E-06	5.33E-03
Cadmium	7440-43-9	0.000003	4.61E-07	1.23E-03
Chromium-VI[1]	18540-29-9	0.00000085	1.31E-07	3.48E-04
Cobalt	7440-48-4	0.000023	3.54E-06	9.43E-03
Copper	7440-50-8	0.000148	2.28E-05	6.07E-02
Lead	7439-92-1	0.000124	1.91E-05	5.08E-02
Manganese	7439-96-5	0.0008	1.23E-04	3.28E-01
Nickel	7440-02-0	0.000012	1.85E-06	4.92E-03
Mercury	7439-97-6	0.000009	1.38E-06	3.69E-03
Selenium	7782-49-2	0.000002	3.08E-07	8.20E-04
Vanadium	7440-62-2	0.000071	1.09E-05	2.91E-02

1. Hexavalent chromium is assumed to be 5% of total chromium per SJVAPCD guidance.

5.2.2 Unpaved Road Dust TAC Emissions

TAC emissions from unpaved road dust are calculated by speciating the PM_{10} emissions according to the speciation profile provided by CARB per Particulate Speciation Profile #470 (CARB 2021). On-site unpaved road PM_{10} emissions are based on PM_{10} emissions of 0.65 pounds per hour and 1833.1 pounds per year. The unpaved road dust TAC emissions are summarized in Table 5-5. Unpaved road dust TAC emission calculations are provided in Table 11 in Attachment C-1.

Table 5-5: Unpaved Road Dust TAC Emissions

TAC	CAS No.	Wt. Fraction	Emissions	
			lb/hr	lb/yr
Arsenic	7440-38-2	0.000015	4.05E-06	1.14E-02
Cadmium	7440-43-9	0.000013	1.31E-06	3.67E-03
Chromium-VI[1]	18540-29-9	0.00000085	1.60E-06	4.49E-03
Cobalt	7440-48-4	0.000005	5.74E-06	1.61E-02
Copper	7440-50-8	0.000158	4.50E-05	1.26E-01
Lead	7439-92-1	0.00013	1.31E-04	3.67E-01
Manganese	7439-96-5	0.000915	2.87E-04	8.07E-01
Nickel	7440-02-0	0.000037	6.20E-05	1.74E-01
Mercury	7439-97-6	0.000014	6.53E-07	1.83E-03
Selenium	7782-49-2	0.000003	6.53E-07	1.83E-03
Vanadium	7440-62-2	0.000077	4.05E-06	1.14E-02

1. Hexavalent chromium is assumed to be 5% of total chromium per SJVAPCD guidance.

6.0 REFERENCES

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ATTACHMENT C-1 – EMISSION CALCULATION WORKSHEETS

Visalia Landfill Compost and Bioenergy Facilities
Mobile Source
Emission Calculations

Yorke ENGINEERING, LLC
www.YorkeEngr.com

Table 1: Process Throughput

Table 1a: Process Throughput Compost Facility

Processing Step	Loss based on Initial Charge	Loss based on Previous Step	Proposed Project (TPY)	Proposed Project (TPD)
Initial Charge	---	---	200,000	641
Loss Upon Composting	20.0%	20%	160,000	513
Initial Charge to Secondary	---	---	160,000	513
Loss Upon Curing	10.0%	13%	140,000	449
Loss Upon Screening	10.0%	14%	120,000	385
Finished Product	---	---	120,000	385

Table 1b: Process Throughput - Bioenergy Facility

Processing Step	Proposed Project (TPY)	Proposed Project (TPD)	Proposed Project (Bone Dry Ton/Yr)	Proposed Project (Bone Dry Ton/day)
Feedstock	25,000	68	18,000	49
Biochar	1,620	4	---	---

Data and Parameters

	Compost Facility	
Daily Operating Hours	9	hours/day
Raw Material quantity per truck	12	tons/truck
Raw Material truck count	16667	Truck/year
Raw Material Receive Days	312	Day/year
Raw Material truck count	54	Truck/day
Compost quantity per truck	8	tons/truck
Compost delivery truck count	15000	Truck/year
Compost shipment days	312	Day/year
Compost delivery truck count	49	Truck/day

	Bioenergy Facility	
Daily Operating Hours	24	hours/day
Raw Material quantity per truck (wet)	12	tons/truck
Raw Material truck count	2084	Truck/year
Raw Material Receive Days	365	Day/year
Raw Material truck count	6	Truck/day
Biochar Output	9%	
Biochar quantity per truck	12	tons/truck
Biochar delivery truck count	135	Truck/year
Biochar shipment days	312	Day/year
Biochar delivery truck count	1	Truck/day

Table 2: Onroad Mobile Sources - Vehicle Information

Table 2a: Vehicle Information and Mileage Calculation

Vehicle Type	Vehicle Use	Vehicle Weight (lb)			Days	Veh/day	One-way Trips per Vehicle per Day	One-way Trips per Year	One-way Onsite Trip Mileage[1]	One-way Offsite Trip Mileage[2,4]	Total One-way Trip Mileage	Onsite Total VMT/yr	Offsite Total VMT/yr	Total VMT/yr
		Gross	Empty	Average										
LDT1	Supervisor	6,250	6,250	6,250	312	2	2	1,248	0.85	15	15.85	1,061	18,720	19,781
LDT1	Technical Staff	6,250	6,250	6,250	312	2	2	1,248	0.85	15	15.85	1,061	18,720	19,781
LDT1	Mechanic	6,250	6,250	6,250	312	2	2	1,248	0.85	15	15.85	1,061	18,720	19,781
LDT1	Equipment Operators	6,250	6,250	6,250	312	14	2	8,736	0.85	15	15.85	7,426	131,040	138,466
LDT1	Personnel for facility	6,250	6,250	6,250	312	3	2	1,872	0.85	15	15.85	1,591	28,080	29,671
LDT1	Miscellaneous Business	6,250	6,250	6,250	104	2	2	416	0.85	15	15.85	354	6,240	6,594
LDT1	Laboratory Services	6,250	6,250	6,250	104	2	2	416	0.85	15	15.85	354	6,240	6,594
LHD2	Delivery of Office Supplies	15,006	8,200	11,603	104	2	2	416	0.85	15	15.85	354	6,240	6,594
T7 Tractor	Ship Raw Material to Facility[3]	47,000	23,000	35,000	312	0	0	0	0.00	0	0.00	0	0	0
T7 Tractor	Ship Product from Facility	39,000	23,000	31,000	312	50	2	31,200	0.85	38	38.85	26,520	1,185,600	1,212,120

Table 2b: Onsite/Offsite Vehicle Usage Information

Vehicle Type	Fuel	# Veh	Trips per Year	Onsite Total VMT/yr	Offsite Total VMT/yr	Total VMT/yr
LDT1	gasoline	27	15,184	12,906	227,760	240,666
LHD2	diesel	2	416	354	6,240	6,594
T7 Tractor	diesel	50	31,200	26,520	1,185,600	1,212,120

Notes:

1. Onsite mileage is the distance from the front gate of the facility to the furthest point of the compost facility for compost delivery and to the furtherest point of the compost storage area for compost shipment.

2. Mileage for employees based on the distance from Visalia to the project site.

3. Because the raw material is already shipped to the Visalia Landfill, there are no additional truck trips associated with compost facility operation.

4. Mileage for compost shipment is the distance from the project site to the county line to the south.

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Table 3: Onroad Mobile Sources Exhaust Emissions

Table 3a: Onroad Mobile Sources - Criteria Pollutant Exhaust Emissions

Pollutant	Vehicle Type	Running Exhaust EF (g/mile)	Idle EF (g/trip)	Start EF (g/trip)	Total Running Exhaust (lb/yr)	Total Idle (lb/yr)	Total Start (lb/yr)	Total Emissions (lb/yr)	Onsite Emissions (lb/yr)	Offsite Emissions (lb/yr)	Total Emissions (lb/day)	Onsite Emissions (lb/day)
NOx	LDT1	0.042	0.00000	0.171	22.37	0.00	5.72	28.09	1.51	26.59	0.09	4.83E-03
	LHD2	1.040	0.14293	0.000	15.10	0.13	0.00	15.23	0.82	14.42	0.05	2.62E-03
	T7 Tractor	1.933	1.74894	1.866	5,162.14	120.19	128.26	5,410.59	118.38	5,292.22	17.34	3.79E-01
VOC	LDT1	0.009	0.00000	0.189	4.71	0.00	6.33	11.03	0.59	10.44	0.04	1.90E-03
	LHD2	0.148	0.00873	0.000	2.15	0.01	0.00	2.16	0.12	2.04	0.01	3.70E-04
	T7 Tractor	0.019	0.14800	0.000	49.91	10.17	0.00	60.08	1.31	58.77	0.19	4.21E-03
CO	LDT1	0.620	0.00000	1.864	328.92	0.00	62.34	391.26	20.98	370.28	1.25	6.73E-02
	LHD2	0.711	0.07232	0.000	10.32	0.07	0.00	10.39	0.56	9.83	0.03	1.79E-03
	T7 Tractor	0.162	2.18687	0.000	431.87	150.29	0.00	582.16	12.74	569.42	1.87	4.08E-02
SOx	LDT1	0.003	0.00000	0.001	1.37	0.00	0.02	1.39	0.07	1.31	0.00	2.38E-04
	LHD2	0.005	0.00015	0.000	0.08	0.00	0.00	0.08	0.00	0.07	0.00	1.35E-05
	T7 Tractor	0.010	0.00319	0.000	28.03	0.22	0.00	28.25	0.62	27.63	0.09	1.98E-03
PM10	LDT1	0.001	0.00000	0.002	0.63	0.00	0.05	0.68	0.04	0.64	0.00	1.17E-04
	LHD2	0.024	0.00221	0.000	0.34	0.00	0.00	0.35	0.02	0.33	0.00	5.94E-05
	T7 Tractor	0.028	0.00063	0.000	75.80	0.04	0.00	75.85	1.66	74.19	0.24	5.32E-03
PM2.5	LDT1	0.001	0.00000	0.002	0.57	0.00	0.05	0.63	0.03	0.59	0.00	1.07E-04
	LHD2	0.023	0.00212	0.000	0.33	0.00	0.00	0.33	0.02	0.31	0.00	5.69E-05
	T7 Tractor	0.027	0.00060	0.000	72.53	0.04	0.00	72.57	1.59	70.98	0.23	5.09E-03

Table 3b: Onroad Mobile Sources - Fugitive ROG Emissions

Pollutant	Vehicle Type	Hot Soak (g/trip)	Running Loss (g/trip)	Resting Loss (g/trip)	Diurnal (g/trip)	Total Hot Soak (lb/yr)	Total Running Loss (lb/yr)	Total Resting Loss (lb/yr)	Total Diurnal (lb/yr)	Total Emissions (lb/yr)	Onsite Emissions (lb/yr)	Offsite Emissions (lb/yr)	Total Emissions (lb/day)
VOC	LDT1	0.14	0.49	0.07	0.10	4.5	16.3	2.3	3.3	26.45	1.42	25.03	0.08
	LHD2	-	-	-	-	-	-	-	-	-	-	-	-
	T7 Tractor	-	-	-	-	-	-	-	-	-	-	-	-

Table 3c: Onroad Mobile Sources - Fugitive PM Emissions

Pollutant	Vehicle Type	Tire Wear (g/mile)	Break Wear (g/mile)	Total Tire Wear (lb/yr)	Total Break Wear (lb/yr)	Total Emissions (lb/yr)	Onsite Emissions (lb/yr)	Offsite Emissions (lb/yr)	Total Emissions (lb/day)
PM10	LDT1	0.0080	0.0368	4.24	19.48	23.72	1.27	22.45	0.076
	LHD2	0.0120	0.0892	0.17	1.30	1.47	0.08	1.39	0.005
	T7 Tractor	0.0360	0.0617	96.12	164.84	260.95	5.71	255.24	0.836
PM2.5	LDT1	0.0020	0.0158	1.06	8.35	9.41	0.50	8.90	0.030
	LHD2	0.0030	0.0382	0.04	0.56	0.60	0.03	0.57	0.002
	T7 Tractor	0.0090	0.0265	24.03	70.64	94.67	2.07	92.60	0.303

Table 3d: Summary of Criteria Pollutant Emissions from Onroad Operations Vehicles

Type	NO_x (lb/yr)	ROG (lb/yr)	CO (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)	$PM_{2.5}$ (lb/yr)
Exhaust	5453.92	73.27	983.81	29.71	76.87	73.52
Fugitive	---	26.45	---	---	286.14	104.68
Total (Lb/Yr)	5453.92	99.72	983.81	29.71	363.02	178.20
Total (TPY)	2.73	0.05	0.49	0.01	0.18	0.09

Table 3e: Onroad Mobile Sources - Greenhouse Gas Exhaust Emissions

Pollutant	Vehicle Type	Running Exhaust EF (g/mile)	Idle EF (g/trip)	Start EF (g/trip)	Total Running Exhaust (MT/yr)	Total Idle (MT/yr)	Total Start (MT/yr)	Total Emissions (MT/yr)
CO2	LDT1	260.914	0.000	53.828	62.8	0.000	0.8	64
	LHD2	571.282	16.233	0.000	3.8	0.007	0.0	4
	T7 Tractor	1111.146	337.602	0.000	1,346.8	10.533	0.0	1,357
CH4	LDT1	0.002	0.000	0.041	0.0	0.000	0.00	0.00
	LHD2	0.007	0.000	0.000	0.0	0.000	0.00	0.00
	T7 Tractor	0.001	0.007	0.000	0.0	0.000	0.00	0.00
N2O	LDT1	0.004	0.000	0.023	0.00	0.000	0.00	0.00
	LHD2	0.090	0.003	0.000	0.00	0.000	0.00	0.00
	T7 Tractor	0.175	0.053	0.000	0.21	0.002	0.00	0.21
CO2e	LDT1							64
	LHD2							4
	T7 Tractor							1,421
	Total							**1,489**

Table 3f: GHG Emissions from Onroad Mobile Source Activity

CO_2 (MT/Yr)	CH_4 (Kg/Yr)	N_2O (Kg/Yr)	Total CO_2e (MT/Yr)
1,425	2.47	215.36	1,489

Table 3g: Global Warming Potential

Pollutant	GWP
CO2	1
CH4	25
N2O	298

Notes:
1. EMFAC Idle EF is reported as g/vehicle/day. It is converted to g/trip by dividing by the EMFAC value by trip/vehicle/day.
2. EMFAC Resting Loss and Diurnal EFs are reported as g/vehicle/day. They are converted to g/trip by dividing by the EMFAC value by trip/vehicle/day.

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Table 4: Onroad Mobile Source Paved Road Dust

Table 4a: Paved Road PM_{10} Emission Factors[1]

Vehicle	Average Vehicle Weight (ton)	Pollutant	Freeway (lb/VMT)	Major (lb/VMT)	Collector (lb/VMT)	Local (lb/VMT)	Rural/Onsite (lb/VMT)
		sL $(g/m^2)^2$ -->	0.020	0.035	0.035	0.320	1.600
Fleet Average	2.40	PM10	1.48E-04	2.46E-04	2.46E-04	1.84E-03	7.96E-03
		PM2.5	3.69E-05	6.14E-05	6.14E-05	4.60E-04	1.99E-03

$$E = k\,(sL)^{0.91} \times (W)^{1.02} * C_f$$

Variable	Value	UOM
k (PM10)	1.00	g/VMT
k(PM2.5)	0.25	g/VMT
Rain Days[3]	51	day/yr
C_f	0.965	

Table 4b: Fraction of VMT by Functional Type of Roadway[2]

Freeway	Major	Collector	Local	Rural
33.25%	38.97%	27.59%	0.20%	note 4

Table 4c: Summary of Onroad VMT by Phase and Road Type

EMFAC Vehicle Type	Activity	Unit of Measure	Freeway	Major	Collector	Local	Rural	Total Offsite	Onsite	Total VMT
LDT1	Supervisor	VMT/day	19.95	23.38	16.55	0.12	1.00	61	3.4	64
		VMT/Yr	6,224	7,295	5,165	37.44	312.00	18,720	1,061	19,781
LDT1	Technical Staff	VMT/day	19.95	23.38	16.55	0.12	1.00	61	3.4	64
		VMT/Yr	6,224	7,295	5,165	37.44	312.00	18,720	1,061	19,781
LDT1	Mechanic	VMT/day	20	23	17	0.12	1.00	61	3.4	64
		VMT/Yr	6,224	7,295	5,165	37.44	312.00	18,720	1,061	19,781
LDT1	Equipment Operators	VMT/day	140	164	116	0.84	7.00	427	23.8	451
		VMT/Yr	43,571	51,066	36,154	262.08	2184.00	131,040	7,426	138,466
LDT1	Personnel for facility	VMT/day	30	35	25	0.18	1.50	92	5.1	97
		VMT/Yr	9,337	10,943	7,747	56.16	468.00	28,080	1,591	29,671
LDT1	Miscellaneous Business	VMT/day	20	23	17	0.12	1.00	61	3.4	64
		VMT/Yr	2,075	2,432	1,722	12.48	104.00	6,240	354	6,594
LDT1	Laboratory Services	VMT/day	20	23	17	0.12	1.00	61	3.4	64
		VMT/Yr	2,075	2,432	1,722	12.48	104.00	6,240	354	6,594
LHD2	Delivery of Office Supplies	VMT/day	20	23	17	0.12	1.00	61	3.4	64
		VMT/Yr	2,075	2,432	1,722	12.48	104.00	6,240	354	6,594
T7 Tractor	Ship Raw Material to Facility	VMT/day	0	0	0	0.00	0.00	0	0	0
		VMT/Yr	0	0	0	0.00	0.00	0	0	0
T7 Tractor	Ship from Compost Facility	VMT/day	1,264	1,481	1,048	7.60	25.00	3,825	85	3,910
		VMT/Yr	394,212	462,028	327,107	2,371	7,800	1,185,600	26,520	1,212,120

Table 4d: Entrained Road Dust Emissions from Travel on Paved Roads (lb/day)

EMFAC Vehicle Type	Activity	Pollutant	Freeway	Major	Collector	Local	Rural	Onsite	Total
LDT1	Supervisor	PM10	2.95E-03	5.75E-03	4.07E-03	2.21E-04	7.96E-03	2.71E-02	4.80E-02
		PM2.5	7.36E-04	1.44E-03	1.02E-03	5.52E-05	1.99E-03	6.77E-03	1.20E-02
LDT1	Technical Staff	PM10	2.95E-03	5.75E-03	4.07E-03	2.21E-04	7.96E-03	2.71E-02	4.80E-02
		PM2.5	7.36E-04	1.44E-03	1.02E-03	5.52E-05	1.99E-03	6.77E-03	1.20E-02
LDT1	Mechanic	PM10	2.95E-03	5.75E-03	4.07E-03	2.21E-04	7.96E-03	2.71E-02	4.80E-02
		PM2.5	7.36E-04	1.44E-03	1.02E-03	5.52E-05	1.99E-03	6.77E-03	1.20E-02
LDT1	Equipment Operators	PM10	2.06E-02	4.02E-02	2.85E-02	1.55E-03	5.57E-02	1.90E-01	3.36E-01
		PM2.5	5.16E-03	1.01E-02	7.12E-03	3.87E-04	1.39E-02	4.74E-02	8.40E-02
LDT1	Personnel for facility	PM10	4.42E-03	8.62E-03	6.10E-03	3.31E-04	1.19E-02	4.06E-02	7.20E-02
		PM2.5	1.10E-03	2.15E-03	1.53E-03	8.28E-05	2.99E-03	1.02E-02	1.80E-02
LDT1	Miscellaneous Business	PM10	2.95E-03	5.75E-03	4.07E-03	2.21E-04	7.96E-03	2.71E-02	4.80E-02
		PM2.5	7.36E-04	1.44E-03	1.02E-03	5.52E-05	1.99E-03	6.77E-03	1.20E-02
LDT1	Laboratory Services	PM10	2.95E-03	5.75E-03	4.07E-03	2.21E-04	7.96E-03	2.71E-02	4.80E-02
		PM2.5	7.36E-04	1.44E-03	1.02E-03	5.52E-05	1.99E-03	6.77E-03	1.20E-02
LHD2	Delivery of Office Supplies	PM10	2.95E-03	5.75E-03	4.07E-03	2.21E-04	7.96E-03	2.71E-02	4.80E-02
		PM2.5	7.36E-04	1.44E-03	1.02E-03	5.52E-05	1.99E-03	6.77E-03	1.20E-02
T7 Tractor	Ship Raw Material to Facility	PM10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		PM2.5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
T7 Tractor	Ship from Compost Facility	PM10	1.87E-01	3.64E-01	2.58E-01	1.40E-02	1.99E-01	6.77E-01	1.70E+00
		PM2.5	4.66E-02	9.10E-02	6.44E-02	3.50E-03	4.98E-02	1.69E-01	4.24E-01
Total	All	PM10	0.23	0.45	0.32	0.02	0.31	1.07	2.39
		PM2.5	0.06	0.11	0.08	0.00	0.08	0.27	0.60

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Emission Calculations

Table 4e: Entrained Road Dust Emissions from Travel on Paved Roads (lb/yr)

EMFAC Vehicle Type	Activity	Pollutant	Freeway	Major	Collector	Local	Rural	Onsite	Total
LDT1	Supervisor	PM10	0.92	1.79	1.27	0.07	2.48	8.45	14.98
		PM2.5	0.23	0.45	0.32	0.02	0.62	2.11	3.75
LDT1	Technical Staff	PM10	0.92	1.79	1.27	0.07	2.48	8.45	14.98
		PM2.5	0.23	0.45	0.32	0.02	0.62	2.11	3.75
LDT1	Mechanic	PM10	0.92	1.79	1.27	0.07	2.48	8.45	14.98
		PM2.5	0.23	0.45	0.32	0.02	0.62	2.11	3.75
LDT1	Equipment Operators	PM10	6.43	12.55	8.88	0.48	17.39	59.13	104.87
		PM2.5	1.61	3.14	2.22	0.12	4.35	14.78	26.22
LDT1	Personnel for facility	PM10	1.38	2.69	1.90	0.10	3.73	12.67	22.47
		PM2.5	0.34	0.67	0.48	0.03	0.93	3.17	5.62
LDT1	Miscellaneous Business	PM10	0.31	0.60	0.42	0.02	0.83	2.82	4.99
		PM2.5	0.08	0.15	0.11	0.01	0.21	0.70	1.25
LDT1	Laboratory Services	PM10	0.31	0.60	0.42	0.02	0.83	2.82	4.99
		PM2.5	0.08	0.15	0.11	0.01	0.21	0.70	1.25
LHD2	Delivery of Office Supplies	PM10	0.31	0.60	0.42	0.02	0.83	2.82	4.99
		PM2.5	0.08	0.15	0.11	0.01	0.21	0.70	1.25
T7 Tractor	Ship Raw Material to Facility	PM10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM2.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T7 Tractor	Ship from Compost Facility	PM10	58.21	113.52	80.37	4.36	62.11	211.17	529.75
		PM2.5	14.55	28.38	20.09	1.09	15.53	52.79	132.44
Total	All	PM10	69.70	135.93	96.24	5.23	93.17	316.76	717.02
		PM2.5	17.42	33.98	24.06	1.31	23.29	79.19	179.25

Notes:

1. Methodology per AP-42, 13.2.1 Paved Roads
2. SJVAPCD, Appendix A: Comments and Responses Rule 9510 and 3180 December 15, 2005
3. http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/appendix-d2020-4-0-full-merge.pdf?sfvrsn=6, Table 1.1 has 51 days with precipitation > 0.1 inches for tulare county.
4. Rural is assumed to be 0.25 miles.

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Table 5: Site (Access/Egress) Fugitive Dust From Travel on Unpaved Roads

Table 5a: Unpaved Road Emission Factors[1]

EMFAC Vehicle Type	Activity	PM Emission Factors[2,3] (lb/VMT)	
		PM10	PM2.5
LDT1	Supervisor	0.8677	0.0868
LDT1	Technical Staff	0.8677	0.0868
LDT1	Mechanic	0.8677	0.0868
LDT1	Equipment Operators	0.8677	0.0868
LDT1	Personnel for facility	0.8677	0.0868
LDT1	Miscellaneous Business	0.8677	0.0868
LDT1	Laboratory Services	0.8677	0.0868
LHD2	Delivery of Office Supplies	1.1462	0.1146
T7 Tractor	Ship Raw Material to Facility	1.8839	0.1884
T7 Tractor	Ship from Compost Facility	1.7838	0.1784

Variable	Value	UOM
Road Silt Content	6.4	%
Rain Days[4]	51.0	day/year

Table 5b: Vehicle Miles Travelled for Transport of Personnel, Supplies, Materials and Product

EMFAC Vehicle Type	Activity	Vehicle Weight (ton)			No. of days	Veh/day	Trips/Day	Trips/Year	Miles per Trip	Total VMT[5] (mi/day)	Total VMT[5] (mi/yr)
		Gross	Empty	Average							
LDT1	Supervisor	3.13	3.13	3.13	312	2	2	1,248	0.85	0	0
LDT1	Technical Staff	3.13	3.13	3.13	312	2	2	1,248	0.85	0	0
LDT1	Mechanic	3.13	3.13	3.13	312	2	2	1,248	0.85	0	0
LDT1	Equipment Operators	3.13	3.13	3.13	312	14	2	8,736	0.85	0	0
LDT1	Personnel for facility	3.13	3.13	3.13	312	3	2	1,872	0.85	0	0
LDT1	Miscellaneous Business	3.13	3.13	3.13	104	2	2	416	0.85	0	0
LDT1	Laboratory Services	3.13	3.13	3.13	104	2	2	416	0.85	0	0
LHD2	Delivery of Office Supplies	7.50	4.10	5.80	104	2	2	416	0.85	0	0
T7 Tractor	Ship Raw Material to Facility	23.50	11.50	17.50	312	0	0	0	0	0	0
T7 Tractor	Ship from Compost Facility	19.50	11.50	15.50	312	50	2	31,200	0.85	0	0

Table 5c: Entrained Road Dust from Unpaved Roads

EMFAC Vehicle Type	Activity	Uncontrolled (lb/day)		Controlled (lb/day)		Uncontrolled (lb/yr)		Controlled (lb/yr)	
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
LDT1	Supervisor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LDT1	Technical Staff	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LDT1	Mechanic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LDT1	Equipment Operators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LDT1	Personnel for facility	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LDT1	Miscellaneous Business	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LDT1	Laboratory Services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LHD2	Delivery of Office Supplies	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T7 Tractor	Ship Raw Material to Facility	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T7 Tractor	Ship from Compost Facility	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total (ton/yr)						0.0	0.0	0.0	0.0

Control Efficiency for Watering Roadways[6] 55%

Notes:

1. EPA AP-42 5th Edition, Chapter 13, Section 13.2.2, Equation 1a.
2. MISCELLANEOUS PROCESS METHODOLOGY 7.9 Entrained Road Travel, Paved Road Dust (Revised and updated, November 2016), https://ww3.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2016.pdf
3. Because daily emissions are being calculated, and it does not rain daily, the rain correction factor has been omitted from the calculation.
4. http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/appendix-d2020-4-0-full-merge.pdf?sfvrsn=6, Table 1.1 has 51 days with precipitation > 0.1 inches for tulare county.
5. The compost facility is assumed to be paved with either asphalt or concrete; therefore, there is no travel by onroad vehicles on unpaved surfaces for this project. (The project has a sweeper - a sweeper would only be used on paved surfaces.)
6. Assumes twice daily watering; http://www.aqmd.gov/docs/default-source/ceqa/handbook/mitigation-measures-and-control-efficiencies/fugitive-dust/fugitive-dust-table-xi-d.doc?sfvrsn=2

Table 6: Offroad Equipment - Criteria Pollutant and GHG Emissions

Table 6a: Emission Factors

Unit Count	Offroad Equipment	Typical Model (or Equivalent)	Engine Tier and Information				NOx (g/BHp-hr)	VOC (g/BHp-hr)	CO (g/BHp-hr)	SOx (g/BHp-hr)	PM10 (g/BHp-hr)	PM2.5 (g/BHp-hr)	CO2 (kg/gal)	CH4 (g/gal)	N2O (g/gal)
			Tier	BHp	BSFC (lb/hp-hr)	Op Load[1]									
1	Fuel Truck	Freightliner M2106	4f	350	0.3602	0.38	0.30	0.14	2.60	0.005	0.010	0.010	10.210	0.410	0.080
1	Tractors	Massey Fergusen, 7619	4f	200	0.3602	0.37	0.30	0.14	2.60	0.005	0.010	0.010	10.210	0.410	0.080
1	Excavator	Caterpillar 326	4f	201	0.3602	0.38	0.30	0.14	2.60	0.005	0.010	0.010	10.210	0.410	0.080
5	Loader	Caterpillar, 962K	4f	250	0.3602	0.37	0.30	0.14	2.60	0.005	0.010	0.010	10.210	0.410	0.080
1	Water Truck	International, 7400 6x4	4f	350	0.3602	0.38	0.30	0.14	2.60	0.005	0.010	0.010	10.210	0.410	0.080
1	Sweeper Truck	Freightliner M2	4f	240	0.3602	0.46	0.30	0.14	2.60	0.005	0.010	0.010	10.210	0.410	0.080

Table 6b: Total Criteria Pollutant Emissions from Offroad Equipment

Unit Count	Offroad Equipment	Typical Model (or Equivalent)	Engine Characteristics				Criteria Pollutant Exhaust Emissions (lb/day)					
			BHp	Op Load[1]	Hr/Day	Hr/Yr	NOx	VOC	CO	SOx	PM10	PM2.5
1	Fuel Truck	Freightliner M2106	350	0.38	2.00	624	0.18	0.08	1.52	0.00	0.01	0.01
1	Tractors	Massey Fergusen, 7619	200	0.37	8.00	2,496	0.39	0.18	3.39	0.01	0.01	0.01
1	Excavator	Caterpillar 326	201	0.38	8.00	2,496	0.40	0.19	3.50	0.01	0.01	0.01
5	Loader	Caterpillar, 962K	250	0.37	8.00	2,496	2.45	1.14	21.21	0.04	0.08	0.08
1	Water Truck	International, 7400 6x4	350	0.38	8.00	2,496	0.70	0.33	6.10	0.01	0.02	0.02
1	Sweeper Truck	Freightliner M2	240	0.46	8.00	2,496	0.58	0.27	5.06	0.01	0.02	0.02
Total Emissions from offroad equipment (lb/day)							4.71	2.20	40.79	0.08	0.16	0.16

Table 6c: Total Criteria Pollutant Emissions from Offroad Equipment

Unit Count	Offroad Equipment	Typical Model (or Equivalent)	Engine Characteristics				Criteria Pollutant Exhaust Emissions (lb/yr)					
			BHp	Op Load[1]	Hr/Day	Hr/Yr	NOx	VOC	CO	SOx	PM10	PM2.5
1	Fuel Truck	Freightliner M2106	350	0.38	2.00	624	54.89	25.61	475.70	0.90	1.83	1.83
1	Tractors	Massey Fergusen, 7619	200	0.37	8.00	2,496	122.16	57.01	1,058.71	2.00	4.07	4.07
1	Excavator	Caterpillar 326	201	0.38	8.00	2,496	126.09	58.84	1,092.76	2.06	4.20	4.20
5	Loader	Caterpillar, 962K	250	0.37	8.00	2,496	763.49	356.30	6,616.93	12.48	25.45	25.45
1	Water Truck	International, 7400 6x4	350	0.38	8.00	2,496	219.56	102.46	1,902.81	3.59	7.32	7.32
1	Sweeper Truck	Freightliner M2	240	0.46	8.00	2,496	182.25	85.05	1,579.48	2.98	6.07	6.07
Total Emissions from offroad equipment (lb/yr)							1,468.43	685.27	12,726.40	23.99	48.95	48.95
Total Emissions from offroad equipment (TPY)							0.73	0.34	6.36	0.01	0.02	0.02

Table 6d: Offroad Equipment - GHG Emissions[2]

Unit Count	Offroad Equipment	Typical Model (or Equivalent)	Engine Information				Fuel (gal/yr)	CO2 (MT/yr)	CH4 (kg/yr)	N2O (kg/yr)	CO2e (MT/Yr)
			Tier	BHp	BSFC (lb/hp-hr)	Op Load[1]					
1	Fuel Truck	Freightliner M2106	4f	350	0.3602	0.38	4,240	43	2	0	43
1	Tractors	Massey Fergusen, 7619	4f	200	0.3602	0.37	9,437	96	4	1	97
1	Excavator	Caterpillar 326	4f	201	0.3602	0.38	9,741	99	4	1	100
5	Loader	Caterpillar, 962K	4f	250	0.3602	0.37	58,984	602	24	5	604
1	Water Truck	International, 7400 6x4	4f	350	0.3602	0.38	16,962	173	7	1	174
1	Sweeper Truck	Freightliner M2	4f	240	0.3602	0.46	14,080	144	6	1	144
Total GHG Exhaust Emissions from Equipment			----	----	----	----	113,444	1,158	47	9	1,162

Table 6e: Brake Specific Fuel Consumption (BSFC) Conversion

Parameter	Value	Unit of Measure	Basis
BSFC	7000	btu/hp-hr	Per EPA AP-42 Table 3,3-1, Footnote a
Heat Content	137,000	btu/gal	SDS
Density	7.05	lb/gal	SDS
Heat Content	19432.62	Btu/lb	calculated
BSFC	0.3602	lb/hp-hr	calculated

Table 6f: Global Warming Potential

Pollutant	GWP
CO2	1
CH4	25
N2O	298

Data and Parameters

Operating Days	312	day/yr

Notes:

1. http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/appendix-d2020-4-0-full-merge.pdf?sfvrsn=6, Table 3.3.

2. Solid, gaseous, liquid and biomass fuels: Federal Register (2009) EPA; 40 CFR Parts 86, 87, 89 et al; Mandatory Reporting of Greenhouse Gases; Final Rule , 30Oct09, 261 pp. Tables C-1 and C-2 at FR pp. 56409-56410. Revised emission factors for selected fuels: Federal Register (2010) EPA; 40 CFR Part 98; Mandatory Reporting of Greenhouse Gases; Final Rule, 17Dec10, 81 pp. With Amendments from Memo: Table of Final 2013 Revisions to the Greenhouse Gas Reporting Rule (PDF) to 40 CFR part 98, subpart C: Table C–1 to Subpart C—Default CO2 Emission Factors and High Heat Values for Various Types of Fuel and Table C–2 to Subpart C—Default CH4 and N2O Emission Factors for Various Types of Fuel.

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Table 7: Fugitive Dust From Offroad Equipment Travel on Unpaved Areas and Haul Roads[1]

Table 7a: EPA Predictive Emission Factors for Offroad Equipment[2]

No. of Units	Equipment Description and Use		PM Emission Factors[3] (lb/VMT)	
			PM10	PM2.5
1	Fuel Truck	Freightliner M2106	2.0667	0.2067
1	Tractors	Massey Fergusen, 7619	1.3171	0.1317
1	Excavator	Caterpillar 326	2.3481	0.2348
5	Loader	Caterpillar, 962K	2.1106	0.2111
1	Water Truck[4]	International, 7400 6x4	0.0000	0.0000
1	Sweeper Truck[4]	Freightliner M2	0.0000	0.0000

Variable	Value	UOM
Road Silt Content	6.4	%
Rain Days[5]	51.0	day/year

Table 7b: Onsite Equipment Tonnage, Operating Hours, and VMT

No. of Units	Equipment Description and Use		GVW (tons)	Empty (tons)	Average (tons)	Operating Hours (hr/day)	Operating Hours (hr/yr)	Ave. Speed[4] (MPH)	Total Travel (VMT/day)	Total Travel (VMT/yr)
1	Fuel Truck	Freightliner M2106	31.5	11.5	21.5	2.0	624	2.0	4.0	1,248
1	Tractors	Massey Fergusen, 7619	7.9	7.9	7.9	8.0	2,496	0.3	2.4	749
1	Excavator	Caterpillar 326	28.6	28.6	28.6	8.0	2,496	0.3	2.4	749
5	Loader	Caterpillar, 962K	22.5	22.5	22.5	8.0	2,496	0.3	12.0	3,744
1	Water Truck	International, 7400 6x4	31.5	11.5	21.5	8.0	2,496	3.0	24.0	7,488
1	Sweeper Truck	Freightliner M2	16.5	16.5	16.5	8.0	2,496	3.0	24.0	7,488

Table 7c: Offroad Equipment Unpaved Road Dust Emissions

No. of Units	Equipment Description and Use		Uncontrolled (lb/day)		Controlled (lb/day)		Uncontrolled (lb/yr)		Controlled (lb/yr)	
			PM10	PM2.5	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
1	Fuel Truck	Freightliner M2106	8.27	0.83	1.15	0.11	2579	258	357	36
1	Tractors	Massey Fergusen, 7619	3.16	0.32	0.44	0.04	986	99	137	14
1	Excavator	Caterpillar 326	5.64	0.56	0.78	0.08	1758	176	244	24
5	Loader	Caterpillar, 962K	25.33	2.53	3.51	0.35	7902	790	1095	110
1	Water Truck	International, 7400 6x4	0.00	0.00	0.00	0.00	0	0	0	0
1	Sweeper Truck	Freightliner M2	0.00	0.00	0.00	0.00	0	0	0	0
Total Dust from Equip. On Unpaved Areas (Lb/Day or Lb/Year)			42.39	4.24	5.88	0.59	13226	1323	1833	183
Total Dust from Equip. On Unpaved Areas (Ton/Year)			---	---	---	---	6.6	0.7	0.9	0.1

Overall Control Efficiency[6]	86%	
Control for watering	55%	Ref 6
Control for vehicle speed	44%	Ref 6
Control for sweeping	45%	Ref 7

Notes:

1. Although compost surfaces are paved, because the compost processing areas are expected to have compost residuals covering the active surfaces, the unpaved road calculations are used to estimate emissions.
2. EPA AP-42 5th Edition, Chapter 13, Section 13.2.2, Equation 1a.
3. Because daily emissions are being calculated, and it does not rain daily, the rain correction factor has been omitted from the calculation.
4. Entrained road dust is assumed to be negligible for the water truck due to watering and the sweeper truck due to watering and sweeping.
5. http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/appendix-d2020-4-0-full-merge.pdf?sfvrsn=6, Table 1.1 has 51 days with precipitation > 0.1 inches for tulare county.
6. Assumes twice daily watering and limiting travel speed to 25 mph; http://www.aqmd.gov/docs/default-source/ceqa/handbook/mitigation-measures-and-control-efficiencies/fugitive-dust/fugitive-dust-table-xi-d.doc?sfvrsn=2.
7. Chow, Judith C., et. al., "Evaluation of Regenerative-air Vacuum Street Sweeping on Geological Contributions to PM10", Journal of the Air & Waste Management Association, published online 06 Mar 2012.

Table 8: Summary of Emissions

Table 8a: Summary of Daily Criteria Pollutant Emissions

Activity	NOx (lb/day)	VOC (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
3. Onroad Vehicle Exhaust	17.48	0.32	3.15	0.10	1.16	0.57
4. Onroad Vehicle Paved Road Dust	---	---	---	---	2.39	0.60
5. Onroad Vehicle Unpaved Road Dust	---	---	---	---	0.00	0.00
6. Offroad Equipment Exhaust	4.71	2.20	40.79	0.08	0.16	0.16
7. Offroad Equipment Unpaved Dust	---	---	---	---	5.88	0.59
Total	22.19	2.52	43.94	0.17	9.59	1.91

Table 8b: Summary of Annual Criteria Pollutant Emissions

Activity	NOx (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SOx (lb/yr)	PM10 (lb/yr)	PM2.5 (lb/yr)
3. Onroad Vehicle Exhaust	5453.92	99.72	983.81	29.71	363.02	178.20
4. Onroad Vehicle Paved Road Dust	---	---	---	---	717.02	179.25
5. Onroad Vehicle Unpaved Road Dust	---	---	---	---	0.00	0.00
6. Offroad Equipment Exhaust	1468.43	685.27	12726.40	23.99	48.95	48.95
7. Offroad Equipment Unpaved Dust	---	---	---	---	1833.10	183.31
Total	6922.35	784.99	13710.20	53.70	2962.08	589.72
Total (TPY)	3.46	0.39	6.86	0.03	1.48	0.29

Table 8c: Summary of Annual GHG Emissions

Activity	CO2 (MT/yr)	CH4 (MT/yr)	N2O (MT/yr)	CO2e (MT/Yr)
3. Onroad Vehicle Exhaust	1424.76	0.00	0.22	1489.00
4. Onroad Vehicle Paved Road Dust	---	---	---	---
5. Onroad Vehicle Unpaved Road Dust	---	---	---	---
6. Offroad Equipment Exhaust	1158.27	46.51	9.08	1162.13
7. Offroad Equipment Unpaved Dust	---	---	---	---
Total	**2583.03**	**46.51**	**9.29**	**2651.13**

Note:

1. CO2 emissions from composting are not included in the total because the CO2 is biogenic and, therefore, part of the natural carbon cycle.

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Table 9: Diesel and Gasoline Vehicle TAC Emissions

Table 9a: DPM Emissions

Vehicle	PM10 Emissions (lb/hr)		PM10 Emissions (lb/day)		PM10 Emissions (lb/yr)	
	Onsite Exhaust	Nearsite Exhaust[1,2]	Onsite Exhaust	Nearsite Exhaust[1]	Onsite Exhaust	Nearsite Exhaust1,[2]
LHD2	0.000	0.000	0.001	0.000	0.019	0.005
T7 Tractor	0.027	0.008	0.243	0.072	1.659	0.488
Fuel Truck	0.001	0.000	0.006	0.000	1.830	0
Tractors	0.001	0.000	0.013	0.000	4.072	0
Excavator	0.001	0.000	0.013	0.000	4.203	0
Loader	0.009	0.000	0.082	0.000	25.450	0
Water Truck	0.003	0.000	0.023	0.000	7.319	0
Sweeper Truck	0.002	0.000	0.019	0.000	6.075	0
Total PM10 = DPM	0.045	0.008	0.401	0.072	50.626	0.494

Table 9b: Gasoline Vehicle Mileage and Fuel Consumption

Parameter	Onsite	Near-site[1]
VMT/Day	41	12
Fuel Consumption (gal/day)	2.55	0.75

Average Fuel Economy Light Truck[3] 16.2 MPG

Table 9c: TAC Emissions from Onroad Gasoline Vehicles

TAC	CAS#	Emission Factor[4] (lb/1000-gal)	Onsite (lb/day)	Near-site (lb/day)	Onsite (lb/yr)	Near-site (lb/yr)	Total (lb/hr)	Total (lb/day)	Total lb/yr)
1,2,4-Trimethylbenzene	95636	5.89E-01	1.504E-03	4.424E-04	4.693E-01	1.380E-01	2.16E-04	1.95E-03	6.07E-01
1,3-Butadiene	106990	3.24E-01	8.273E-04	2.433E-04	2.581E-01	7.592E-02	1.19E-04	1.07E-03	3.34E-01
Acetaldehyde	75070	1.47E-01	3.754E-04	1.104E-04	1.171E-01	3.445E-02	5.40E-05	4.86E-04	1.52E-01
Acrolein	107028	8.25E-02	2.107E-04	6.196E-05	6.573E-02	1.933E-02	3.03E-05	2.73E-04	8.51E-02
Benzene	71432	1.57E+00	4.009E-03	1.179E-03	1.251E+00	3.679E-01	5.76E-04	5.19E-03	1.62E+00
Chlorine	7782505	4.55E-01	1.162E-03	3.417E-04	3.625E-01	1.066E-01	1.67E-04	1.50E-03	4.69E-01
Copper	7440508	3.30E-03	8.427E-06	2.478E-06	2.629E-03	7.733E-04	1.21E-06	1.09E-05	3.40E-03
Ethyl benzene	100414	6.42E-01	1.639E-03	4.822E-04	5.115E-01	1.504E-01	2.36E-04	2.12E-03	6.62E-01
Formaldehyde	50000	1.01E+00	2.579E-03	7.585E-04	8.047E-01	2.367E-01	3.71E-04	3.34E-03	1.04E+00
Hexane	110543	9.42E-01	2.405E-03	7.075E-04	7.505E-01	2.207E-01	3.46E-04	3.11E-03	9.71E-01
Manganese	7439965	3.30E-03	8.427E-06	2.478E-06	2.629E-03	7.733E-04	1.21E-06	1.09E-05	3.40E-03
Methanol	67561	2.42E-01	6.179E-04	1.817E-04	1.928E-01	5.671E-02	8.89E-05	8.00E-04	2.50E-01
Methyl ethyl ketone {2-Butanon	78933	1.18E-02	3.013E-05	8.862E-06	9.401E-03	2.765E-03	4.33E-06	3.90E-05	1.22E-02
Methyl tert-butyl ether	1634044	1.15E+00	2.937E-03	8.637E-04	9.162E-01	2.695E-01	4.22E-04	3.80E-03	1.19E+00
m-Xylene	108383	2.17E+00	5.541E-03	1.630E-03	1.729E+00	5.085E-01	7.97E-04	7.17E-03	2.24E+00
Naphthalene	91203	2.95E-02	7.533E-05	2.216E-05	2.350E-02	6.912E-03	1.08E-05	9.75E-05	3.04E-02
Nickel	7440020	3.30E-03	8.427E-06	2.478E-06	2.629E-03	7.733E-04	1.21E-06	1.09E-05	3.40E-03
o-Xylene	95476	7.54E-01	1.925E-03	5.663E-04	6.007E-01	1.767E-01	2.77E-04	2.49E-03	7.77E-01
Styrene	100425	7.07E-02	1.805E-04	5.310E-05	5.633E-02	1.657E-02	2.60E-05	2.34E-04	7.29E-02
Toluene	108883	3.50E+00	8.937E-03	2.629E-03	2.788E+00	8.201E-01	1.29E-03	1.16E-02	3.61E+00

Notes:

1. Near-site encompasses 1/4 mile offsite, per SJVAPCD guidance. Onsite mileage is 0.85 miles per one-way trip; therefore, nearsite mileage is calculated to be Onsite Mileage*(0.25/0.85).
2. Offroad equipment operates onsite only.
3. https://en.wikipedia.org/wiki/Fuel_efficiency
4. SJVAPCD, AB 2588 “Hot Spots” Air Toxics Profiles, March 27, 2017, District Toxic Profile ID 176, Gasoline-Fired Portable Catalyst ICE

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Table 10: TAC from Paved Road Dust

Table 10a: Criteria Pollutant Information

Pollutant	Onsite (lb/hr)	Near-site[1] (lb/hr)	Onsite (lb/day)	Near-site[1] (lb/day)	Onsite (lb/yr)	Near-site[1] (lb/yr)
PM10	0.1188	0.0349	1.07	0.31	316.76	93.17
		0.15377				409.93

Table 10b: TAC from Paved Road Dust

TAC	Wt. Fraction[2]	TAC Emissions	
		lb/hr	lb/yr
Arsenic	0.000013	2.00E-06	5.33E-03
Cadmium	0.000003	4.61E-07	1.23E-03
Chromium[3]	0.00000085	1.31E-07	3.48E-04
Cobalt	0.000023	3.54E-06	9.43E-03
Copper	0.000148	2.28E-05	6.07E-02
Lead	0.000124	1.91E-05	5.08E-02
Manganese	0.0008	1.23E-04	3.28E-01
Nickel	0.000012	1.85E-06	4.92E-03
Mercury	0.000009	1.38E-06	3.69E-03
Selenium	0.000002	3.08E-07	8.20E-04
Vanadium (Fume Or Dust)	0.000071	1.09E-05	2.91E-02

Notes:

1. Nearsite emissions include emissions up to 1/4 mile offsite. Nearsite PM10 emissions are calculated in Table 4 as "Rural" emissions.
2. CARB speciation profile for Paved Roads (#471), accessed: https://ww2.arb.ca.gov/speciation-profiles-used-carb-modeling
3. Hexavalent chromium is assumed to be 5% of total chromium per SJVAPCD guidance.

Table 11: TAC from Offroad Vehicles Operation on Unpaved Surfaces

Table 11a: Offroad Equipment Entrained Dust Emissions

Source	lb/hr	lb/day	lb/yr
Unpaved Road Dust from Site Access	0.00	0.00	0.00
Unpaved Road Dust Composting	0.65	5.88	1833.10
Total PM10	0.65	**5.88**	1833.10

Table 11b: TAC from Vehicle/Equipment Travel on Unpaved Surfaces

TAC	Concentration[1,2] (lb/lb Dust)	TAC Emissions (lb/hr)	TAC Emissions (lb/yr)
Arsenic	6.20E-06	4.05E-06	1.14E-02
Cadmium	2.00E-06	1.31E-06	3.67E-03
Chromium	2.45E-06	1.60E-06	4.49E-03
Cobalt	8.80E-06	5.74E-06	1.61E-02
Copper	6.90E-05	4.50E-05	1.26E-01
Lead	2.00E-04	1.31E-04	3.67E-01
Manganese	4.40E-04	2.87E-04	8.07E-01
Nickel	9.50E-05	6.20E-05	1.74E-01
Mercury	1.00E-06	6.53E-07	1.83E-03
Selenium	1.00E-06	6.53E-07	1.83E-03

Notes:

1. Although compost surfaces are paved, because the compost processing areas are expected to have compost residuals covering the active surfaces, the unpaved road calculations are used to estimate emissions, and compost dust speciation is used for TAC..

2. SJVAPCD Toxic Emission Factors for fugitive dust from "PM10 based Emissions from Operations generating Dust from Greenwaste Composting" (June 7, 2016), accessed: https://www.valleyair.org/busind/pto/emission_factors/emission_factors_idx.htm

APPENDIX D – COMPOST EMISSIONS

Appendix D:
Compost Facility Emissions

Air Quality and GHG
Technical Report

Prepared for:

Tulare County
Solid Waste Department
Compost and Bioenergy Facilities
Visalia Landfill
8614 Avenue 328
Visalia, CA 93291

November 2021

Table of Contents

List of Tables

Attachments

List of Acronyms and Abbreviations

BAAQMD	Bay Area Air Quality Management District
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAS No.	Chemical Abstract Service Number
C:N	Carbon to Nitrogen ratio
EF	Emission Factor
EPA	[United States] Environmental Protection Agency
hr	Hour
lb	Pound(s)
MDAQMD	Mojave Desert Air Quality Management District
NRWS	Napa recycling and Waste Services
$PM_{2.5}$	Fine Particulate Matter
PM_{10}	Respirable Particulate Matter
SDAPCD	San Diego County Air Pollution Control District
SJVAPCD	San Joaquin Valley Air Pollution Control District
TAC	Toxic Air Contaminant
TPD	Ton per Day
TPY	Tons per Year
TSP	Total Suspended Particulate
UC	University of California
VOC	Volatile organic compounds
yr	Year

Appendix D: Compost Facility Emissions

1.0 INTRODUCTION

1.1 Overview

Emissions estimates have been prepared for the composting facility proposed for operation at the Visalia Landfill in Tulare County. Emissions estimates have been prepared for the following source categories:

- Dust/Particulate Emissions:
  - Grinding and Screening;
  - Material Handling; and
  - Wind Erosion;
- Composting Operations.
- Toxic Air Contaminant (TAC) Emissions:
  - Dust and Particulate TAC Emissions; and
  - Composting TAC Emissions:
    - Screening, grinding, material handling, wind erosion;
    - Ammonia; and
    - Organic TACs.

For each category of emissions, the methodology is explained and the data and assumptions used in the calculations are provided. Emissions are summarized by category in each section. A comprehensive summary of composting operational criteria pollutant emissions is provided in Section 5.0. Emission calculation worksheets are provided in Attachment D-1.

1.2 Facility Throughput

Although the proposed project will be constructed in phases [100,000 tons per year (TPY) in Phase 1[1], 50,000 TPY in Phase 2, and 50,000 TPY in Phase 3], the operational emissions were estimated based on the full facility process rate of 200,000 TPY. There is mass loss during various phases of processing due to decomposition of the organic matter and screening to remove non-compostable materials. The process throughput used in this analysis is summarized in Table 1-1.

The loss upon composting, curing, and screening are used to estimate throughput at each stage of processing. Note, however, that the curing emission factors are based on initial compost charge, not on the quantity of compost actually entering the curing phase. Screening and storage emissions are based on the tonnage that actually enter those process steps.

[1] The compost facility will either be constructed in three phases, with Phase 1 at 100,000 TPY capacity and Phases 2 and 3 each at 50,000 TPY capacity each, or will be constructed in four phases, each Phase with 50,000 TPY capacity. For this analysis, we have assumed that Phase 1 will be 100,000 TPY, as that leads to the highest daily and annual construction emission estimates. This assumption, however, has no bearing on the maximum operational emissions at full build-out.

Table 1-1: Compost Facility Process Throughput

Processing Step	Proposed Project (TPY)	Proposed Project (TPD)
Initial Charge	200,000	641
Loss Upon Composting	160,000	513
Initial Charge to Curing	160,000	513
Loss Upon Curing	140,000	449
Loss Upon Screening	120,000	385
Finished Product	120,000	385

2.0 DUST/PARTICULATE EMISSIONS

Operations that involve the movement of material or that expose or disturb erodible surfaces may generate fugitive dust. During composting operations, fugitive dust is generated by a variety of activities, such as the transport of material on paved and unpaved roads, material handling, and wind erosion.

Fugitive dust emissions were calculated using Environmental Protection Agency (EPA)-recommended equations that generate "predictive emission factors" that are specific to the given activity. The calculations generally take into account the silt and moisture content of the material. The methodologies and detailed emission calculations are presented in the following sections.

2.1 Grinding and Screening

In preparation for the active composting phase, feedstock materials may be pre-processed by grinding. Grinding of the feedstock reduces the volume of material, increases the surface area to promote biological decomposition, and provides a relatively uniform mixture of material and particle size. Cured compost is screened to remove "overs," which typically consist of composted pieces of woody material or non-organic matter such as plastic or glass. Emissions from grinding and screening are presented in this section.

2.1.1 Methodology

The uncontrolled emission factor for grinding is based on guidance provided in the Bay Area Air Quality Management District (BAAQMD) permit manual for wood grinders (BAAQMD 2018) and is derived from the since de-listed EPA emission factor for "log debarking" (EPA 1985).[2] PM_{10} is assumed to be 60% of total suspended particulate (TSP). The $PM_{2.5}$ emissions are assumed to be 15% of the PM_{10}, consistent with the fine particulate matter ($PM_{2.5}$) to respirable particulate matter (PM_{10}) ratio from EPA AP-42, Chapter 13.2.4 (= 0.053 / 0.35) (EPA 2006b).

$$E_{TSP} = 0.024 \text{ lb TSP/ton processed}$$

$$E_{PM10} = 0.60 \times E_{TSP} = 0.60 \times 0.024 = 0.0144 \text{ lb } PM_{10}\text{/ton processed}$$

$$E_{PM2.5} = 0.0144 \times 0.15 = 0.002 \text{ lb } PM_{2.5}\text{/ton processed}$$

The uncontrolled particulate emission factor for screening is from AP-42 Chapter 10.3, Plywood Veneer and Layout Operations (EPA 1985) for log debarking, assuming 60% of the TSP emissions are PM_{10}. The $PM_{2.5}$ emissions are assumed to be 15% of the PM_{10}, consistent with the $PM_{2.5}$ to PM_{10} ratio from AP-42, Chapter 13.2.4 (= 0.053 / 0.35) (EPA 2006b).

$$E_{PM10} = 0.024 \text{ lb-TSP/ton} \times 0.60 \text{ lb-}PM_{10}\text{/lb-TSP} = 0.0144 \text{ lb/ton}$$

$$E_{PM2.5} = 0.024 \text{ lb-TSP/ton} \times 0.60 \text{ lb-}PM_{10}\text{/lb-TSP} \times 0.15 \text{ lb-}PM_{10}\text{/lb-}PM_{2.5}$$
$$= 0.002 \text{ lb/ton}$$

[2] EPA Chapter 10.9 currently lists debarking as "non-detect"; however, emission factors from previous versions, such as cited in Section 3.1.1.2, are still available in EPA's archive.

2.1.2 Emission Controls

The screens and grinders will be fitted with water sprays to ensure the material is sufficiently wetted to minimize emissions. An emission control efficiency of 75% is applied to derive controlled emissions (MDAQMD 2000).

2.1.3 Process Rate Information

The process rate information for grinding and screening is presented in Table 2-1. It is conservatively assumed that all feedstock would be processed through the grinder, although in practice, a small fraction of the feedstock will require grinding.

Table 2-1: Grinding and Screening Process Throughput

Operation	Annual Throughput (TPY)	Peak Daily Throughput (TPD)
Grinding	200,000	641
Screening	120,000	385

2.1.4 Grinding and Screening Particulate Emissions

Annual grinding and screening emissions are summarized in Table 2-2. Emission calculations, including daily and hourly emissions, are provided in Table 4 in Attachment D-1.

Table 2-2: Grinding and Screening Particulate Emissions

Operation	Annual Emissions (lb/yr)	
	PM_{10}	$PM_{2.5}$
Grinding	720.00	108.00
Screening	432.00	64.80
Total (lb/yr)	1152.00	172.80
Total (TPY)	0.58	0.09

2.2 Material Handling

2.2.1 Methodology

PM_{10} and $PM_{2.5}$ emissions were estimated using the equation for material transfer from Chapter 13.2.4 of AP-42, Aggregate Handling and Storage Piles (EPA 2006b). $PM_{2.5}$ is assumed to be 15% of PM_{10}, per the particle size multipliers in the equation. The emission factor is calculated according to Equation 2-1.

$$EF\ (lb/ton) = k(0.0032) \times (U/5)^{1.3} / (M/2)^{1.4} \qquad \text{(Eq. 2-1)}$$

Where:

EF = Emission Factor (lb/ton)

k = particle size multiplier (k = 0.35 for PM_{10}, and k = 0.053 for $PM_{2.5}$)

U = mean windspeed (miles per hour)

M = material moisture content

For these emission factor calculations, a windspeed of 4.92 miles per hour is used (CAPCOA 2020, Table 1.1). A moisture content of 4.8% is assumed.[3] Emission factors are summarized in Table 2-3.

Table 2-3: Material Handling PM_{10}/$PM_{2.5}$ Emission Factors

Emission Mechanism	PM_{10} Emission Factor (lb/ton/transfer point)	$PM_{2.5}$ Emission Factor (lb/ton/transfer point)
Material Transfer	3.22E-04	4.88E-05

2.2.2 Compost Processing Activity Data

The raw material, work in process, and finished compost material handling quantities and the number of transfer points associated with each process step are summarized in Table 2-4. There is a loss of mass associated with composting and curing, and the material quantities listed in Table 2-4 reflect those process losses.

Table 2-4: Material Handling Process Information

Process Step	Annual Throughput (TPY)	Peak Daily Throughput (TPD)	No. of Transfer Points
Feedstock	200,000	641	1
Grinding	200,000	641	2
Composting	200,000	641	1
Curing	160,000	513	1
Screening	140,000	449	2
Finished Compost Storage	120,000	385	1
Truck Loadout	120,000	385	1

2.2.3 Material Handling Particulate Emissions

The amount of material processed (Table 2-4) was combined with the appropriate emission factors (Table 2-3) to calculate the fugitive dust emissions from material handling. Although not accounted for in the calculations, fugitive dust from material handling will be reduced via wet suppression by at least 50%. Annual operational fugitive dust emissions from material handling are summarized in Table 2-5. Detailed emission calculations, including daily and hourly emissions, are provided in Table 5 in Attachment D-1.

[3] The range of moisture content for which this equation is valid is 0.25% to 4.8%. Because that portion of MSW that will be directed to composting typically has moisture content greater than 50%, the use of 4.8% in the emission calculations is expected to be extremely conservative (i.e., will overestimate emissions).

Table 2-5: Material Handling Particulate Emissions

Process Step	Controlled Emissions (lb/yr)	
	PM_{10}	$PM_{2.5}$
Feedstock	64.39	9.75
Grinding	128.79	19.50
Composting	64.39	9.75
Curing	51.52	7.80
Screening	90.15	13.65
Finished Compost Storage	38.64	5.85
Truck Loadout	38.64	5.85
Total (lb/yr)	476.52	72.16
Total (TPY)	0.24	0.04

2.3 Wind Erosion

2.3.1 Methodology

The uncontrolled wind erosion PM_{10} emission factor is calculated based on Equation 2-2 (MDAQMD 2000).

$$E_f = J \ x \ 1.7 \ x \ \frac{sL}{1.5} \ x \ \frac{(365-P)}{235} \ x \ \frac{I}{1.5} \qquad \text{(Eq. 2-2)}$$

Where:

Ef = Emission factor in tons per acre

J = Particulate aerodynamic factor (=0.5 for PM10 and 0.2 for PM2.5)

sL = Average silt loading of storage pile in percent (%) (assumed to be 0.5%)

P = Average number of days during the year with at least 0.01 inches of precipitation (=51 in Tulare County)

I = Percentage of time with unobstructed wind speed >12 mph in percent (%) (= 5.41% in the project area)

Each pile/area is assumed to be watered regularly to reduce emissions; the control efficiency of watering is assumed to be 75% (MDAQMD 2000).

Table 2-6: Wind Erosion PM_{10}/$PM_{2.5}$ Emission Factors

Emission Mechanism	Uncontrolled PM_{10} Emission Factor (lb/acre-day)	Uncontrolled $PM_{2.5}$ Emission Factor (lb/acre-day)
Wind Erosion	1.37E-01	5.46E-02

2.3.2 Emission Control

The compost and curing piles will be fitted with water sprays to ensure the material is sufficiently wetted to minimize emissions. Storage piles would be wetted using a water truck as necessary to minimize emissions. An emission control efficiency of 75% is applied to derive controlled emissions (MDAQMD 2000).

2.3.3 Wind Erosion – Process Information

Wind erosion varies according to the acreage involved; acreage was determined using the project drawings and design specifications. Process areas for each operational activity are summarized in Table 2-7.

Table 2-7: Wind Erosion Process Information

Area	Acres
Feedstock Storage	3
Composting	4
Curing	2
Finished Compost Storage	1

2.3.4 Wind Erosion Particulate Emissions

Annual wind erosion particulate emissions are summarized in Table 2-8. Detailed emission calculations, including daily and hourly emissions, are provided in Table 6 in Attachment D-1.

Table 2-8: Wind Erosion Particulate Emissions

Area	Annual Emissions (lb/yr)	
	PM_{10}	$PM_{2.5}$
Feedstock Storage	37.38	14.95
Composting	49.84	19.94
Curing	24.92	9.97
Finished Compost Storage	12.46	4.98
Total	124.59	49.84
Total (TPY)	0.06	0.02

3.0 COMPOSTING OPERATIONS

The proposed composting operations will emit volatile organic compounds (VOC) due to the decomposition of the organic materials during the composting and curing operations. VOC is the only criteria pollutant that would be emitted directly from the decomposition of organic matter in the composting process.

3.1 Methodology

Emissions of VOC were estimated using emission factors recommended by the San Joaquin Valley Air Pollution Control District (SJVAPCD), BAAQMD, or California Air Resources Board (CARB), derived from reports published by these agencies or from source test data from similar facilities elsewhere in California.

The VOC emission factor for composting was derived based on recent source testing conducted at another BAAQMD-permitted composting facility, which yielded an VOC emission factor of 0.22 pounds per wet ton. The source test was performed on a positively aerated static pile with a cured compost biolayer for VOC emissions control.

The curing process is thought to emit approximately 10% of the emissions that the compost process emits (SJVAPCD 2010). Using this assumption, the curing step would emit 0.022 pounds per ton of material.

Cured compost storage VOC emissions were estimated using an emission factor of 0.02 pounds of VOC per ton of material stored based on a SJVAPCD report (SJVAPCD 2010). VOC emission factors are summarized in Table 3-1.

Table 3-1: Summary of Composting VOC Emission Factors

Source	Controlled Emission Factor	Reference
Feedstock Storage	0.101 lb/wet ton/day	CARB 2015
Composting	0.22 lb/ton	NRWS 2020
Curing	0.022 lb/ton	SJVAPCD 2010, Table 4
Storage	0.02 lb/ton	SJVAPCD 2010, Table 4.3

3.2 Process Throughput Information

Normally, feedstock would be delivered directly to the compost pile. Some feedstocks may require pre-processing [e.g., blending to reduce moisture content, blending to optimize the carbon to nitrogen (C:N) ratio, grinding]. The amount of material directed to the feedstock storage is assumed to be 20%. Feedstock storage is assumed to last no more than 2 days. As noted elsewhere, the curing emission factor is based on the initial compost charge, not the quantity of uncured compost actually charged to the curing process, so the throughput information for curing in Table 3-1 differs from the information provided in Table 2-4. VOC emissions were based on the throughput information provided in Table 3-2.

Table 3-2: Composting Throughput

Source	Annual Throughput (TPY)	Daily Throughput (TPD)
Feedstock Storage	40,000	128
Composting	200,000	641
Curing	200,000	641
Storage	120,000	385

3.3 Composting Process Emissions

VOC emissions from the raw material stockpile, composting, curing, and the finished compost stockpile are summarized in Table 3-3. Emission calculation worksheets for VOC emissions from composting operations are provided in Table 3 in Attachment D-1.

Table 3-3: Summary of Proposed Composting VOC Emissions

Source	Annual Emissions (lb/yr)	Daily Emissions (lb/day)	Hourly Emissions (lb/hr)
Feedstock Storage	8,080	12.95	0.54
Composting	44,000	141.03	5.88
Curing	4,400	14.10	0.59
Finished Compost Storage	2,400	7.69	0.32
Total	58,880	175.77	7.32
Total (TPY)	29.44	---	---

4.0 SUMMARY OF CRITERIA POLLUTANT AND GHG EMISSIONS

The predicted emissions from the proposed composting facility are summarized in Tables 4-1 and 4-2.

Table 4-1: Summary of Proposed Daily Composting Emissions

Activity	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Composting/Curing	---	175.77	---	---	---	---
Grind and Screen	---	---	---	---	3.69	0.55
Material Handling	---	---	---	---	1.53	0.23
Wind Erosion	---	---	---	---	0.34	0.14
Total	0.00	175.77	0.00	0.00	5.56	0.92

Table 4-2: Summary of Proposed Annual Composting Emissions

Activity	NO_x (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)	$PM_{2.5}$ (lb/yr)
Composting/Curing	---	58880.00	---	---	---	---
Grind and Screen	---	---	---	---	1152.00	172.80
Material Handling	---	---	---	---	476.52	72.16
Wind Erosion	---	---	---	---	124.59	49.84
Total (lb/yr)	0.00	58880.00	0.00	0.00	1753.11	294.80
Total (TPY)	0.00	29.44	0.00	0.00	0.88	0.15

5.0 TOXIC AIR CONTAMINANT EMISSIONS

The emissions of TACs were calculated either using process information for a given activity and an appropriate emission factor, or by "speciating" the PM_{10} and VOC emissions using a profile that identifies the weight fraction of the TAC constituent in the parent compound.

5.1 Dust and Particulate TAC Emissions

Material handling, screening, grinding, and wind erosion can each result in particulate emissions. The particulate emissions may contain TACs consisting primarily of heavy metals that are present in the biomass feedstock. Particulate emissions are speciated into TAC emissions using a co-composting speciation profile published by the SJVAPCD (SJVAPCD 2015). The total particulate emissions from material handling, screening, grinding, and wind erosion are 2.66 pounds per hour and 8,349 pounds per year. The speciation profile and resulting TAC emissions are provided as Table 5-1. Emission calculations are provided in Table 8 in Attachment D-1.

Table 5-1: Compost Operations Fugitive Dust TAC Emissions

TAC	Concentration (lb/lb dust)	TAC Emissions	
		(lb/hr)	(lb/yr)
Arsenic	3.80E-06	3.68E-06	1.09E-02
Cadmium	1.30E-06	1.19E-06	3.51E-03
Hexavalent Chrome	2.50E-06	1.46E-06	4.30E-03
Cobalt	5.40E-06	5.23E-06	1.54E-02
Copper	1.80E-04	4.10E-05	1.21E-01
Lead	3.10E-05	1.19E-04	3.51E-01
Manganese	6.90E-04	2.61E-04	7.71E-01
Mercury	2.10E-06	5.94E-07	1.75E-03
Nickel	3.00E-05	5.64E-05	1.67E-01
Selenium	2.70E-06	5.94E-07	1.75E-03

5.2 Ammonia

Ammonia may be emitted from organic waste processing operations due to decomposition of nitrogen-bearing compounds present in the feedstock. Ammonia can form if the carbon to nitrogen (C:N) ratio is low or there is insufficient oxygen.

The ammonia emission factor of 5.3×10^{-4} pounds per ton per day was published by the BAAQMD for a recent application (BAAQMD 2018). The proposed project would retain material in composting and curing for up to 24 days each; the ammonia emission factor is therefore 0.0127 pounds per wet ton (= 0.00053 x 24). The ammonia emission factor for the storage piles is based on an SJVAPCD report (SJVAPCD 2010). Ammonia emission factors are summarized in Table 5-2. Ammonia emissions were based on these emission factors and the process throughput and are summarized in Table 5-3. Ammonia emission calculations are provided in Table 9 in Attachment D-1.

Table 5-2: Ammonia Emission Factors

Source Description	Emission Factor (lb/ton)	Reference
Composting	0.0127	BAAQMD (undated)
Curing	0.0127	BAAQMD (undated)
Compost Storage	0.00038	SJVAPCD 2010

Table 5-3: Composting Ammonia Emissions

Process Unit	Annual Throughput (TPY)	Daily Throughput (TPD)	Annual Emissions (lb/yr)	Hourly Emissions (lb/hr)
Composting	200,000	641	2,544	0.34
Curing	200,000	641	2,544	0.34
Finished Compost Storage	120,000	385	46	0.01

5.3 Organic TACs

Organic TAC emissions for composting, curing, and finished compost storage were estimated by speciating the VOC emissions using the University of California (UC) Davis composting study results (Kumar 2011). The UC Davis study reports the constituents as a percentage of VOC emissions. The speciation profile is shown in Table 5-4. VOC emissions are summarized in Table 5-5. TAC emissions are summarized in Table 5-6. Organic TAC emission calculations are provided in Table 10 in Attachment D-1.

Table 5-4: TAC Speciation Profile

Pollutant	Speciation (% Wt.)
Isopropyl alcohol	42.31
Methyl alcohol	12.79
Naphthalene	0.50
Propene	0.22
Acetaldehyde	0.14

Table 5-5: Composting VOC Emissions

Feedstock Storage		Composting		Curing		Finished Compost Storage		Total	
lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
0.54	8080.00	5.88	44,000	0.59	4,400	0.32	2,400	7.32	58,880

Table 5-6: Composting TAC Emissions

TAC	Feedstock Storage		Composting		Curing		Finished Compost Storage		Total Project	
	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
Isopropyl alcohol	0.23	3418.65	2.49	18616.40	0.25	1861.64	0.14	1015.44	3.10	24912.13
Methanol	0.07	1033.43	0.75	5627.60	0.08	562.76	0.04	306.96	0.94	7530.75
Naphthalene	0.00	40.40	0.03	220.00	0.00	22.00	0.00	12.00	0.04	294.40
Propene	0.00	17.78	0.01	96.80	0.00	9.68	0.00	5.28	0.02	129.54
Acetaldehyde	0.00	11.31	0.01	61.60	0.00	6.16	0.00	3.36	0.01	82.43

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ATTACHMENT D-1 – EMISSION CALCULATION WORKSHEETS

Visalia Landfill
Compost Facility
Emission Calculations

Yorke ENGINEERING, LLC
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Table 1: Compost Process Throughput

Table 1a: Process Throughput Calculations - Phase 1

Processing Step	Loss based on Initial Charge	Loss based on Previous Step	Proposed Project (TPY)	Proposed Project (TPD)
Initial Charge	---	---	100,000	321
Loss Upon Composting	20.0%	20%	80,000	256
Initial Charge to Secondary	---	---	80,000	256
Loss Upon Curing	10.0%	13%	70,000	224
Loss Upon Screening	10.0%	14%	60,000	192
Finished Product	---	---	60,000	192

Table 1b: Process Throughput Calculations - Phase 2

Processing Step	Loss based on Initial Charge	Loss based on Previous Step	Proposed Project (TPY)	Proposed Project (TPD)
Initial Charge	---	---	50,000	160
Loss Upon Composting	20.0%	20%	40,000	128
Initial Charge to Secondary	---	---	40,000	128
Loss Upon Curing	10.0%	13%	35,000	112
Loss Upon Screening	10.0%	14%	30,000	96
Finished Product	---	---	30,000	96

Visalia Landfill
Compost Facility
Emission Calculations

Table 1c: Process Throughput Calculations - Phase 3

Processing Step	Loss based on Initial Charge	Loss based on Previous Step	Proposed Project (TPY)	Proposed Project (TPD)
Initial Charge	---	---	50,000	160
Loss Upon Composting	20.0%	20%	40,000	128
Initial Charge to Secondary	---	---	40,000	128
Loss Upon Curing	10.0%	13%	35,000	112
Loss Upon Screening	10.0%	14%	30,000	96
Finished Product	---	---	30,000	96

Table 1d: Process Throughput Calculations - Total Project

Processing Step	Loss based on Initial Charge	Loss based on Previous Step	Proposed Project (TPY)	Proposed Project (TPD)
Initial Charge	---	---	200,000	641
Loss Upon Composting	20.0%	20%	160,000	513
Initial Charge to Secondary	---	---	160,000	513
Loss Upon Curing	10.0%	13%	140,000	449
Loss Upon Screening	10.0%	14%	120,000	385
Finished Product	---	---	120,000	385

Data and Parameters			Notes
Daily Operating Hours	9	hours/day	
Raw Material quantity per truck	12	tons/truck	*Assumption*
Raw Material truck count	16667	Truck/year	
Raw Material Receive Days	312	Day/year	
Raw Material truck count	54	Truck/day	
Compost quantity per truck	8	tons/truck	*Assumption*
Compost delivery truck count	15000	Truck/year	
Compost shipment days	312	Day/year	*Assume shipment of compost product 6 days per week*
Compost delivery truck count	49	Truck/day	

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Table 2: Compost Process Emission Factors

Table 2a: Emission Factors

Pollutant	Phase	Emission Factor	Note
ROG	Feedstock Storage	0.101 lb/wet ton/day	1
ROG	Composting	0.22 lb/ton	2
ROG	Curing (=10% of compost factor)	0.022 lb/ton	3
ROG	Storage	0.02 lb/ton	4
NH_3	Composting	0.0127 lb/ton	5
NH_3	Curing	0.0127 lb/ton	5
NH_3	Storage	0.00038 lb/ton	6

Table 2b: Uncontrolled Grinding and Screening PM Emission Factors

Process Operation	Value		Note
	PM10 (lb/ton)	PM2.5 (lb/ton)	
Grinding	0.0144	0.00216	7
Screening	0.0144	0.00216	8

Table 2c: Material Handling PM Emission Factors

Variable	Value		Note
	PM10	PM2.5	
Particle Size Multiplier (dimensionless)	0.35	0.053	9
Mean Wind Speed (MPH)	4.92	4.92	10
Material Moisture Content (%)	4.80	4.80	9
Emission Factor (lb/ton/drop point)	0.00032	0.00005	calculated

Table 2d: Wind Erosion PM Emission Factors[11]

Variable	PM10	PM2.5	Note
Particulate aerodynamic factor	0.50	0.20	11
Average silt loading of storage pile in percent (%),	0.50	0.50	Assumed
Average number of days during the year with at least 0.01 inches of precipitation	51.00	51.00	12
Percentage of time with unobstructed wind speed >12 mph in percent (%)	5.41	5.41	13
Wind Erosion EF (lb/acre/day)	1.37E-01	5.46E-02	Calculated

Table 2e: TAC Speciation

TAC	Speciation (% wt)	Note
Isopropyl alcohol	42.31	14
Methanol	12.79	14
Naphthalene	0.50	14
Propene	0.22	14
Acetylaldehyde	0.14	14

Notes:

1. ARB Emissions Inventory Methodology for Composting Facilities, 3/2/2015, Appendix A, Table A-2
2. SOURCE TEST REPORT, 2020 QUARTERLY COMPOST EMISSIONS TESTING - 4TH QUARTER NAPA RECYCLING & WASTE SERVICES, INC. CASP COMPOSTING SYSTEM AMERICAN CANYON, CALIFORNIA
3. San Joaquin Valley Air Pollution Control District, Compost ROG Emission Factors, September 15, 2010, Table 4.
4. Storage EF from SJVAPCD Compost ROG Emission Factors, Sept 15, 2010, App C, Table 4.3 which is based on 15 days storage.
5. BAAQMD, Engineering Evaluation Report, Davis Street SMART, Plant #2773, 2615 Davis Street, San Leandro, CA, Application #29215, = 5.3E-04 lb/ton/day x 24 days in process
6. SJVAPCD Compost VOC Emission Factors, Sept 15, 2010, App C, Table 4.3 which is based on 15 days storage.
7. BAAQMD, Title V Permit Evaluation, Guadalupe Rubbish Disposal Co., Site A3294. BAAQMD references AP-42 for log debarking. Assume 15% fraction of PM2.5.
8. AP-42 section 10.3 Plywood Veneer and Layout Operations Table 10.3-1 (4th Edition) for log debarking, assuming 60% of emissions are PM10 with a 50% fraction of PM2.5.
9. AP-42, Chapter 13.2.4 Aggregate Handling and Storage Piles. Moisture content used is the maximum allowed by the method. Actual moisture content will be higher, thus these emission factors are conservative.
10. CalEEMod 2021. http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/appendix-d2020-4-0-full-merge.pdf?sfvrsn=6, Table 1.1
11. Mojave Desert Air Quality Management District, "Emissions Inventory Guidance, Mineral Handling and Processing Industries", Section G, Wind Erosion from Storage Piles, April 2000.
12. http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/appendix-d2020-4-0-full-merge.pdf?sfvrsn=6, Table 1.1 has 51 days with precipitation > 0.1 inches for tulare county.
13. Average per met data 2007 - 2010.
14. Organic TAC speciation is from: Kumar, Anuj, et. al., "Volatile organic compound emissions from green waste composting: Characterization and ozone formation", Atmospheric Environment, January 2011.

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Table 3: Composting ROG Emissions

Table 3a: Composting VOC Emissions - Total Project

Process Unit	Annual Throughput (ton/yr)	Peak Daily Throughput (ton/day)	Emission Factor	Annual Emissions (lb/yr)	Peak Daily Emissions (lb/day)	Peak Hourly Emissions (lb/hr)
Feedstock Storage	40,000	128	0.101 lb/wet ton/day	8,080	12.95	0.54
Composting	200,000	641	0.22 lb/ton	44,000	141.03	5.88
Curing	200,000	641	0.022 lb/ton	4,400	14.10	0.59
Finished Compost Storage	120,000	385	0.02 lb/ton	2,400	7.69	0.32
			Total (lb/yr)	58,880	175.77	7.32
			Total (TPY)	29.44		

Data and Parameters			Notes
Daily Hours of Emissions	24	hr/day	Constant
Feedstock Storage Duration	2	days	Project Description
Raw Material Processed in Receiving Storage	20%		Assumption

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Table 4: Grinding and Screening PM Emissions

Table 4a: Emission Factors

Process Operation	Value	
	PM10	PM2.5
Grinding	0.0144	0.00216
Screening	0.0144	0.00216

Table 4b: Grinding and Screening PM Emissions

Operation	Annual Throughput (ton/yr)	Peak Daily Throughput (ton/day)	Annual Emissions (lb/yr)		Peak Daily Emissions (lb/day)		Peak Hourly Emissions (lb/hr)	
			PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Grinding	200000	641	720.00	108.00	2.31	0.35	0.26	0.04
Screening	120000	385	432.00	64.80	1.38	0.21	0.15	0.02
		Total	1152.00	172.80	3.69	0.55	0.41	0.06
		Total (TPY)	0.58	0.09				

Data and Parameters

Operating Hours	9	hrs/day
Control Efficiency for Watering	75%	Ref: 1

References:

1. Mojave Desert Air Quality Management District, "Emissions Inventory Guidance, Mineral Handling and Processing Industries", Material Handling Table 5, April 2000.

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Table 5: Material Handling PM Emissions

Table 5a: Material Handling PM Emissions - Total Project

Process Step	Annual Throughput (ton/yr)	Peak Daily Throughput (ton/day)	No. of Drop Points	Annual Emissions (lb/yr)		Peak Daily Emissions (lb/day)		Peak Hourly Emissions (lb/hr)	
				PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Feedstock	200,000	641	1	64.39	9.75	0.21	0.03	0.023	0.003
Grinding	200,000	641	2	128.79	19.50	0.41	0.06	0.046	0.007
Composting	200,000	641	1	64.39	9.75	0.21	0.03	0.023	0.003
Curing	160,000	513	1	51.52	7.80	0.17	0.03	0.018	0.003
Screening	140,000	449	2	90.15	13.65	0.29	0.04	0.032	0.005
Finished Compost Storage	120,000	385	1	38.64	5.85	0.12	0.02	0.014	0.002
Truck Loadout	120,000	385	1	38.64	5.85	0.12	0.02	0.014	0.002
			Total (lb/yr)	476.52	72.16	1.53	0.23	0.17	0.03
			Total (TPY)	0.24	0.04				

Data and Parameters

Operating Schedule	9	hr/day
Days per year	312	day/yr
PM10 EF	3.22E-04	lb/ton/drop
PM2.5 EF	4.88E-05	lb/ton/drop

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Table 6: Wind Erosion PM Emissions

Table 6a: Wind Erosion Dimensions/Area

Area	Acres
Receiving/Greenwaste Storage	3
Composting	4
Curing	2
Finished Compost Storage	1

Table 6b: Wind Erosion PM Emission Factors

Variable	PM10 lb/acre/day	PM2.5 lb/acre/day
Inactive Day Wind Erosion EF	1.37E-01	5.46E-02

Table 6c: Wind Erosion PM Emissions

Area	Acres	Operating Days	Annual Emissions (lb/yr)		Peak Daily Emissions (lb/day)		Peak Hourly Emissions (lb/hr)	
			PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Feedstock Storage	3.00	365	37.38	14.95	0.10	0.04	0.00	0.00
Composting	4.00	365	49.84	19.94	0.14	0.05	0.01	0.00
Curing	2.00	365	24.92	9.97	0.07	0.03	0.00	0.00
Finished Compost Storage	1.00	365	12.46	4.98	0.03	0.01	0.00	0.00
		Total	124.59	49.84	0.34	0.14	0.01	0.01
		Total (TPY)	0.06	0.02				

Data and Parameters	Value	UOM	Notes:
1. Control by watering per MDAQMD Mineral Guidance	75%		All piles are watered for dust suppression or moisture control, or both.
	52	weeks/yr	Constant
Days per year	365	day/yr	Constant
Constant	24	hr/day	Constant
Conversion	43560	ft^2/acre	Constant

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Table 7: Summary of Emissions

Table 7a: Summary of Daily Criteria Pollutant Emissions

Activity	NOx (lb/day)	VOC (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
3. Composting/Curing	---	175.77	---	---	---	---
4. Grind and Screen	---	---	---	---	3.69	0.55
5. Material Handling	---	---	---	---	1.53	0.23
6. Wind Erosion	---	---	---	---	0.34	0.14
Total	0.00	175.77	0.00	0.00	5.56	0.92

Table 7b: Summary of Annual Criteria Pollutant Emissions

Activity	NOx (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SOx (lb/yr)	PM10 (lb/yr)	PM2.5 (lb/yr)
3. Composting/Curing	---	58880.00	---	---	---	---
4. Grind and Screen	---	---	---	---	1152.00	172.80
5. Material Handling	---	---	---	---	476.52	72.16
6. Wind Erosion	---	---	---	---	124.59	49.84
Total	0.00	58880.00	0.00	0.00	1753.11	294.80
Total (TPY)	0.00	29.44	0.00	0.00	0.88	0.15

Note:

1. CO2 emissions from composting are not included in the total because the CO2 is biogenic and, therefore, part of the natural carbon cycle.

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Table 8: TAC from Composting Dust

Table 8a: Material Handling and Wind Erosion Dust Emissions

Source	lb/hr	lb/yr
Grinding and Screening	0.41	1152.00
Material Handling	0.17	476.52
Wind Erosion	0.01	124.59
Total PM10	**0.59**	**1753.11**

Table 8b: TAC from Material Handling and Wind Erosion

TAC	Concentration (lb/lb Dust)	TAC Emissions (lb/hr)	TAC Emissions (lb/yr)
Arsenic	6.20E-06	3.68E-06	1.09E-02
Cadmium	2.00E-06	1.19E-06	3.51E-03
Hexavalent Chrome	2.45E-06	1.46E-06	4.30E-03
Cobalt	8.80E-06	5.23E-06	1.54E-02
Copper	6.90E-05	4.10E-05	1.21E-01
Lead	2.00E-04	1.19E-04	3.51E-01
Manganese	4.40E-04	2.61E-04	7.71E-01
Mercury	1.00E-06	5.94E-07	1.75E-03
Nickel	9.50E-05	5.64E-05	1.67E-01
Selenium	1.00E-06	5.94E-07	1.75E-03
			1.447

Notes:

1. SJVAPCD Toxic Emission Factors for fugitive dust from "PM10 based Emissions from Operations generating Dust from Greenwaste Composting" (June 7, 2016), accessed: https://www.valleyair.org/busind/pto/emission_factors/emission_factors_idx.htm
2. Hexavalent chromium is assumed to be 5% of total chromium per SJVAPCD guidance.

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Table 9: NH3 Emissions

Table 9a: NH3 Emissions - Total Project

Process Unit	Annual Throughput (ton/yr)	Daily Throughput (ton/day)	Emission Factor (lb/ton)	Annual Emissions (lb/yr)	Hourly Emissions (lb/hr)
Composting	200,000	641	0.0127	2,544	0.34
Curing	200,000	641	0.0127	2,544	0.34
Finished Compost Storage	120,000	385	0.00038	46	0.01

Data and Parameters

Daily Hours of Emissions	24	hr/day

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Table 10: Organic TAC Emissions

Table 10a: VOC Emissions

Feedstock Storage		Composting		Curing		Finished Compost Storage		Total	
(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)
0.54	8080.00	5.88	44,000	0.59	4,400	0.32	2,400	7.32	58,880

Table 10b: Organic TAC Emissions - Total Project

TAC	Speciation[1]	Feedstock Storage		Composting		Curing		Finished Compost Storage		Total Project	
	(% wt)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)
Isopropyl alcohol	42.31	0.23	3418.65	2.49	18616.40	0.25	1861.64	0.14	1015.44	3.10	24912.13
Methanol	12.79	0.07	1033.43	0.75	5627.60	0.08	562.76	0.04	306.96	0.94	7530.75
Naphthalene	0.50	0.00	40.40	0.03	220.00	0.00	22.00	0.00	12.00	0.04	294.40
Propene	0.22	0.00	17.78	0.01	96.80	0.00	9.68	0.00	5.28	0.02	129.54
Acetylaldehyde	0.14	0.00	11.31	0.01	61.60	0.00	6.16	0.00	3.36	0.01	82.43
			4521.57		24622.40		2462.24		1343.04		32949.25
			2.26		12.31		1.23		0.67		16.47

Notes:

1. Organic TAC speciation is from: Kumar, Anuj, et. al., "Volatile organic compound emissions from green waste composting: Characterization and ozone formation", Atmospheric Environment, January 2011.

APPENDIX E – BIOENERGY FACILITY EMISSIONS

Appendix E:
Bioenergy Facility Emissions

Air Quality and GHG
Technical Report

Prepared for:

Tulare County
Solid Waste Department
Compost and Bioenergy Facilities
Visalia Landfill
8614 Avenue 328
Visalia, CA 93291

July 2021

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Attachments

ATTACHMENT E-1 – EMISSION CALCULATION WORKSHEETS

List of Acronyms and Abbreviations

BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BDT	Bone-Dry Ton
BHp	Brake Horsepower
Btu	British Thermal Unit
CAPCOA	California Air Pollution Control Officers Association
CAS No.	Chemical Abstract Service Number
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
DF	Drift Factor
EF	Emission Factor
EPA	[United States] Environmental Protection Agency
g	Gram
gal	Gallon
GHG	Greenhouse Gas
H_2	Hydrogen
H_2S	Hydrogen Sulfide
HHV	Higher Heating Value
hr	Hour
IC	Internal Combustion
k	Particle Size Multiplier
lb	Pound
M	Material Moisture Content
MDAQMD	Mohave Desert Air Quality Management District
MM	Million
NH_3	Ammonia
No.	Number
NO_x	Nitrogen Oxides
PAH	Polyaromatic Hydrocarbon
$PM_{2.5}$	Fine Particulate Matter
PM_{10}	Respirable Particulate Matter
ppm	Parts per Million
scf	Standard Cubic Foot
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_x	Sulfur Oxides
TAC	Toxic Air Contaminant
TDS	Total Dissolved Solids
TPD	Tons per Day

TPY	Tons per Year
TSP	Total Suspended Particulate
VOC	Volatile Organic Compound
yr	Year

Appendix E: Bioenergy Facility Emissions

1.0 INTRODUCTION

1.1 Overview

Emissions estimates have been prepared for the bioenergy facility proposed for operation at the Visalia Landfill in Tulare County. Emissions estimates have been prepared for the following source categories:

- Grinding;
- Material Handling;
- Biomass Drying;
- Internal Combustion (IC) Engines; and
- Flare.

For each category of sources, the calculation methodology is explained and the data and assumptions used in the calculations are provided. Emissions are summarized by category in each section. A comprehensive summary of bioenergy facility stationary source operational emissions is provided in Section 4.0. Toxic air contaminant (TAC) emissions estimates are provided in Section 5.0. Emission calculation worksheets are provided in Attachment E-1.

1.2 Process Throughput

The process will consume woody biomass as the feedstock, with a maximum throughput of 18,000 bone-dry tons (BDT) per year. Woody biomass has a moisture content of up to 50% when received and must be dried to a moisture content of approximately 5 to 10% prior to introduction into the gasifier. Biochar is produced at a rate of 6 to 9% of the raw (bone-dry) material. The emissions estimates are based on the total project throughput of raw woody biomass, dried biomass, and/or the conversion residual, biochar, depending on the process step. Process throughput is summarized in Table 1-1.

Table 1-1: Bioenergy Facility Process Throughput

Material	Annual Throughput (TPY)	Daily Throughput (TPD)
Raw Feedstock	25,000	68
Bone Dry Feedstock	18,000	49
Biochar	1,620	4

2.0 DUST/PARTICULATE EMISSIONS

Operations that involve the movement or processing of feedstock may generate fugitive dust. During biomass conversion operations, fugitive dust is generated by grinding feedstock and material handling of feedstock and biochar.

Fugitive dust emissions were calculated using U.S. Environmental Protection Agency (EPA)-recommended equations that generate predictive emission factors that are specific to the given activity. The calculations generally take into account the silt and moisture content of the material. The methodologies and detailed emission calculations are presented in the following sections.

2.1 Grinding

In preparation for the biomass conversion, feedstock materials may be pre-processed by grinding. Grinding of the feedstock helps to provide a relatively uniform mixture of material and particle size. Emissions from grinding are presented in this section.

2.1.1 Methodology

The emission factor for grinding is based on guidance provided in the Bay Area Air Quality Management District (BAAQMD) permit manual for wood grinders (BAAQMD 2018), which is derived from the since de-listed EPA emission factor for "log debarking" (EPA 1985).[1] Respirable particulate matter (PM_{10}) is assumed to be 60% of Total Suspended Particulate (TSP). The fine particulate matter ($PM_{2.5}$) emissions are assumed to be 15% of the PM_{10}, consistent with the $PM_{2.5}$ to PM_{10} ratio from AP-42, Chapter 13.2.4 (= 0.053 / 0.35).

E_{TSP} = 0.024 lb TSP/ton processed

E_{PM10} = 0.60 x E_{TSP} = 0.60 x 0.024 = 0.0144 lb PM_{10}/ton processed

$E_{PM2.5}$ = 0.0144 x 0.15 = 0.002 lb $PM_{2.5}$/ton processed

2.1.2 Process Rate Information

The process rate information for grinding is presented in Table 2-1.

Table 2-1: Grinding Throughput

Operation	Annual Throughput (TPY)	Peak Daily Throughput (TPD)
Grinding	25,000	68

2.1.3 Grinding Particulate Emissions

Grinding emissions are summarized in Table 2-2. Emission calculations are provided in Table 2 in Attachment E-1.

[1] EPA Chapter 10.9 currently lists debarking as "non-detect;" however, emission factors from previous versions, such as cited in Section 3.1.1.2, are still available in EPA's archive.

Table 2-2: Grinding Particulate Emissions

Annual Emissions (lb/yr)		Daily Emissions (lb/day)		Hourly Emissions (lb/hr)	
PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
360	50	0.99	0.14	0.11	0.02

2.2 Material Handling

2.2.1 Methodology

PM_{10} and $PM_{2.5}$ emissions were estimated using the equation for material transfer from Chapter 13.2.4 of EPA AP-42, Aggregate Handling and Storage Piles (EPA 2006). $PM_{2.5}$ is assumed to be 15% of PM_{10} per the particle size multipliers in the equation. The emission factors were calculated according to Equation 2-1.

$$EF\ (lb/ton) = k(0.0032) \times (U/5)^{1.3} / (M/2)^{1.4} \qquad \text{(Eq. 2-1)}$$

Where:

EF = emission factor (lb/ton)

k = particle size multiplier (k = 0.35 for PM_{10}, and k = 0.053 for $PM_{2.5}$)

U = mean wind speed (miles per hour)

M = material moisture content

For these emission factor calculations, a windspeed of 4.92 miles per hour is used (CAPCOA 2021, Table 1-1). A moisture content of 4.8% is assumed.[2] Emission factors are summarized in Table 2-3.

Table 2-3: Material Handling PM_{10}/$PM_{2.5}$ Emission Factors

Emission Mechanism	PM_{10} Emission Factor (lb/ton/transfer point)	$PM_{2.5}$ Emission Factor (lb/ton/transfer point)
Material Transfer	3.22E-04	4.88E-05

2.2.2 Activity Data

The material handling quantities and the number of transfer points associated with each process step are summarized in Table 2-4.

[2] The range of moisture content for which this equation is valid is 0.25% to 4.8%. Because that portion of woody biomass that will be directed to bioenergy conversion typically has moisture content greater than 20%, the use of 4.8% in the emission calculations is expected to be extremely conservative (i.e., will overestimate emissions).

Table 2-4: Material Handling Process Information

Process Step	Annual Throughput (TPY)	Peak Daily Throughput (TPD)	No. of Transfer Points
Feedstock	25,000	68	2
Grinding	25,000	68	2
Load Dryer	25,000	68	2
Load Biomass Conversion Process	18,000	49	1
Biochar Storage	1,620	5	2
Truck Loadout	1,620	5	1

2.2.3 Material Handling Particulate Emissions

The amount of material processed (Table 2-4) was combined with the appropriate emission factors (Table 2-3) to calculate the fugitive dust emissions from material handling. Fugitive dust from material handling will be reduced via wet suppression by 50%, except for loading of the gasifier (MDAQMD 2000). However, to ensure emissions are not underestimated, the emissions are assumed to be uncontrolled. Operational fugitive dust emissions from material handling are summarized in Table 2-5. Detailed emission calculations are provided in Table 3 in Attachment E-1.

Table 2-5: Material Handling Particulate Emissions

Process Step	Controlled Emissions (lb/yr)	
	PM_{10}	$PM_{2.5}$
Feedstock	16.10	2.44
Grinding	16.10	2.44
Load Dryer	16.10	2.44
Load Biomass Conversion Process	5.80	0.88
Biochar Storage	1.04	0.16
Truck Loadout	0.52	0.08
Total (lb/yr)	55.66	8.43
Total (TPY)	0.03	0.00

3.0 BIOMASS CONVERSION

The biomass conversion process starts with drying the woody biomass to a specified moisture content. This step will be conducted in an un-fired, conveyorized (or rotary) dryer that uses waste heat from the IC engines as the heat source. The dried woody biomass then enters the gasifier. The gasifier has no emissions – it is heated by the partial combustion of the woody biomass. The exhaust from the gasifier is syngas,[3] which is processed to remove impurities and then combusted in either IC engines or a limited use flare. Emissions estimates for each of these sources are provided in this section.

The biomass feedstock is biogenic; therefore, conversion of the biomass to energy is part of the natural carbon cycle and does not contribute to climate change. Greenhouse gas (GHG) emissions are not estimated.

3.1 Drying

The woody biomass is dried in an indirect-fired dryer using waste heat from the IC engines. The drying process may result in the release of naturally occurring hydrocarbons from the wood, which are regulated as volatile organic compounds (VOCs). According to recent analyses by the San Joaquin Valley Air Pollution Control District (SJVAPCD)(SJVAPCD 2019), the woody biomass retains enough moisture throughout the drying process to render the particulate emissions negligible. In AP-42, the EPA lists the particulate emission factor for wood dryers as non-detect, supporting the SJVAPCD conclusion. Thus, particulate emissions are not estimated for the dryer.

3.1.1 Methodology

Drying VOC emissions were estimated using an AP-42 emission factor of 0.3 pounds per ton for wood drying during particle board manufacture (EPA 2002).[4]

3.1.2 Process Information

The drying operation process throughput is presented in Table 3-1.

Table 3-1: Wood Drying Process Throughput

Processing Step	Proposed Project (TPY)	Proposed Project (TPD)
Feedstock Drying	18,000	49

3.1.3 Drying Emissions

The drying operation VOC emissions are presented in Table 3-2. Emission calculations are provided in Table 4 in Attachment E-1.

[3] Typically, syngas is 30 to 60% carbon monoxide (CO), 25 to 30% hydrogen (H_2), 0 to 5% methane (CH_4), 5 to 15% carbon dioxide (CO_2), plus a lesser or greater amount of water vapor and smaller amounts of the sulfur compounds, depending on feedstock.

[4] The specific dryer described in the reference includes emission factors for nitrogen oxides (NO_x) and CO; however, that specific dryer has auxiliary heat from a natural gas burner. Because the dryer proposed for this project does not have auxiliary fuel, the appropriate NO_x and CO factors are assumed to be zero.

Table 3-2: Wood Drying VOC Emissions

Processing Step	Hourly Emissions (lb/hr)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)
Drying	0.61	14.7	5,400

3.2 IC Engines

3.2.1 Methodology

The engine emissions were estimated based on emission factors published by the SJVAPCD in a recent application for similar equipment with similar fuel (SJVAPCD 2019). The emission factors are summarized in Table 3-3.

Table 3-3: Syngas-Fired IC Engine Emission Factors – Normal Operations

Pollutant	Emission Factor (ppm)	Emission Factor (g/BHp-hr)	Emission Factor (lb/MMBtu)
NO_x	9	0.18	0.047
SO_x	5 (as H_2S)	0.025	0.0064
CO	100	1.20	0.316
VOC	25	0.17	0.045
PM_{10}	–	0.03	0.008
$PM_{2.5}$	–	0.03	0.008
NH_3	10	–	0.019

During the first year of operation, the engines will require commissioning, a period during which the engines will be tuned and tested without the add-on emissions controls. Following the tune and test period, the add-on emissions controls will be installed, tuned, and tested. Emissions during the commissioning period are expected to be higher than normal operations. The emission factors used to estimate emissions were taken from the same SJVAPCD document used to generate Table 3-3 and are summarized in Table 3-4.

Table 3-4: Syngas-Fired IC Engine Emission Factors – Commissioning

Pollutant	Emission Factor (ppm)	Emission Factor (g/BHp-hr)	Emission Factor (lb/MMBtu)
NO_x	51	1.00	0.264
SO_x	5	0.025	0.0064
CO	1211	14.50	3.829
VOC	63	0.43	0.114
PM_{10}	–	0.03	0.008
$PM_{2.5}$	–	0.03	0.008
NH_3	0	0	0.000

3.2.2 Process Information

Each engine will be permitted to operate 8,760 hours per year at full load; however, normal operation is expected to be less than full time to allow for downtime, maintenance, etc. The engines are expected to operate 80 to 90% of the available hours. Commissioning is expected to require up to 500 hours during the first year of engine operation. Process information is summarized in Table 3-5.

Table 3-5: IC Engine Process Parameters

Parameter	Value
Number of Engines	Two
Engine Output	1,572 BHp
Syngas Flow (one engine)	64,819 scf/hr
Syngas Flow (one engine)	9.33 MMBtu/hr
Syngas Flow (one engine)	224 MMBtu/day
Syngas Flow (one engine)	81,687 MMBtu/yr

3.2.3 Engine Emissions

Engine emissions are summarized in Tables 3-6 and 3-7 for the normal operating year and the commissioning year. The hourly and daily columns in Table 3-7 represent the maximum of commissioning and normal operation, while the annual column in Table 3-7 is the sum of commissioning and normal operation. Emission calculations are provided in Tables 5 and 6 in Attachment E-1.

Table 3-6: IC Engine Emissions – Normal Operations

Pollutant	Hourly Emissions (lb/hr)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)	Daily Emissions All Two Units (lb/day)	Annual Emissions All Two Units (lb/yr)
NO_x	0.44	10.46	3,819.6	20.9	7,639.3
SO_x	0.06	1.43	522.3	2.9	1,044.6
CO	2.95	70.78	25,833.2	141.6	51,666.5
VOC	0.42	10.11	3,690.5	20.2	7,380.9
PM_{10}	0.07	1.75	637.4	3.5	1,274.7
$PM_{2.5}$	0.07	1.75	637.4	3.5	1,274.7
NH_3	0.18	4.30	1,568.4	8.6	3,136.9

Table 3-7: IC Engine Emissions – Commissioning Year

Pollutant	Hourly Emissions (lb/hr)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)	Daily Emissions All Two Units (lb/day)	Annual Emissions All Two Units (lb/yr)
NO_x	2.46	59.10	4,832.8	118.2	9,665.6
SO_x	0.06	1.43	522.3	2.9	1,044.6
CO	35.70	856.90	42,210.9	1,713.8	84,421.8
VOC	1.06	25.41	4,009.2	50.8	8,018.5
PM_{10}	0.07	1.75	637.4	3.5	1,274.7
$PM_{2.5}$	0.07	1.75	637.4	3.5	1,274.7
NH_3	0.18	4.30	1,478.9	8.6	2,957.8

3.3 Flare

A flare is provided for syngas disposal during periods when the engines cannot use all of the gas produced, e.g., commissioning and periods of unplanned engine shutdown.

3.3.1 Methodology

The flare emissions were estimated based on emission factors published by the SJVAPCD in a recent application for similar equipment with similar fuel (SJVAPCD 2019). The emission factors are summarized in Table 3-8.

Table 3-8: Flare Emission Factors

Pollutant	Emission Factor (lb/MMBtu)
NO_x	0.068
SO_x	0.0064
CO	0.310
VOC	0.063
PM_{10}	0.008
$PM_{2.5}$	0.008

3.3.2 Process Information

The flare is sized for 100% of the syngas output of the gasifier, a maximum of 19 million British thermal units (MMBtu) per hour. Flare use will be limited to 250 hours per year.

3.3.3 Flare Emissions

Flare emissions are summarized in Table 3-9. Emission calculations are provided in Table 7 in Attachment E-1.

Table 3-9: Flare Emissions

Pollutant	Hourly Emissions (lb/hr)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)
NO_x	1.29	31.01	323.0
SO_x	0.12	2.92	30.4
CO	5.89	141.36	1,472.5
VOC	1.20	28.73	299.3
PM_{10}	0.15	3.56	37.1
$PM_{2.5}$	0.15	3.56	37.1

3.4 Cooling Tower

The cooling tower is expected to have PM_{10} emissions from the buildup of total dissolved solids (TDS) due to evaporative losses, and VOC due to the use of recovered process water being used to supplement the make-up water.

PM_{10} emissions were estimated based on Equation 3-1 (SCAQMD 2019):

$$PM_{10}\ (lb/yr) = \text{Circ rate} \times (TDS/10^6) \times (DF/100) \times D \times \text{min/hr} \times \text{Op Hr} \qquad \text{(Eq. 3-1)}$$

Where:

Circ Rate	=	Water circulation rate in the cooling tower (assumed to be 860 gal/min)
TDS	=	Total Dissolved Solids (assumed to be 2,200 parts per million (ppm) TDS, based on 5 cycles of concentration). This is expected to provide a conservative estimate of PM_{10} emissions as it is possible that once the water evaporates a portion of the particles may not be in the PM_{10} size range.
D	=	Density of water (= 8.34 lb/gal)
DF	=	Drift factor (= 0.0005%, per BACT requirements)
Op Hr	=	Operating hours per year (= 8,760 hr/yr)

VOC emissions are based on an emission factor provided by the equipment supplier of 0.39 pounds per hour. Cooling tower emissions are summarized in Table 3-10. Emission calculations are provided in Table 8 in Attachment E-1.

Table 3-10: Cooling Tower Emissions

Pollutant	Hourly Emissions (lb/hr)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)
PM_{10}	4.73E-03	0.11	41.47
VOC	0.39	9.36	3416.40

4.0 SUMMARY OF CRITERIA POLLUTANT AND GHG EMISSIONS

The predicted emissions from the proposed bioenergy facility are summarized in Tables 4-1, 4-2, and 4-3.

Table 4-1: Summary of Proposed Daily Bioenergy Facility Emissions

Activity	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Grind	---	---	---	---	0.99	0.14
Material Handling	---	---	---	---	0.15	0.02
Dryer	---	14.70	---	---	---	---
Engines (2) Normal Ops	20.93	20.22	141.55	2.86	3.49	3.49
Flare	31.01	28.73	141.36	2.92	3.56	3.56
Cooling Tower	---	9.36	---	---	0.11	0.11
Total	31.01	52.79	141.55	2.92	4.81	3.83

Table 4-2: Summary of Proposed Annual Bioenergy Facility Emissions – Normal Operations

Activity	NO_x (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)	$PM_{2.5}$ (lb/yr)
Grind	---	---	---	---	360.00	50.00
Material Handling	---	---	---	---	55.66	8.43
Dryer	---	5400	---	---	---	---
Engines (2) Normal Ops	7639.26	7380.93	51666.48	1044.61	1274.72	1274.72
Flare	323.00	299.25	1472.50	30.37	37.06	37.06
Cooling Tower	---	3416.40	---	---	41.47	41.47
Total (lb/yr)	7962.26	16496.58	53138.98	1074.98	1768.91	1411.68
Total (TPY)	3.98	8.25	26.57	0.54	0.88	0.71

Table 4-3: Summary of Proposed Annual Bioenergy Facility Emissions – Commissioning Year

Activity	NO_x (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)	$PM_{2.5}$ (lb/yr)
Grind	---	---	---	---	360.00	50.00
Material Handling	---	---	---	---	55.66	8.43
Dryer	---	5400.00	---	---	---	---
Engines (2) Commission	9665.59	8018.46	84421.76	1044.61	1274.72	1274.72
Flare	323.00	299.25	1472.50	30.37	37.06	37.06
Cooling Tower	---	3416.40	---	---	41.47	41.47
Total (lb/yr)	9988.59	17134.11	85894.26	1074.98	1768.91	1411.68
Total (TPY)	4.99	8.57	42.95	0.54	0.88	0.71

5.0 TOXIC AIR CONTAMINANT EMISSIONS

The TAC emissions were calculated either using process information for a given activity and an appropriate emission factor or by "speciating" the PM_{10} and VOC emissions using a profile that identifies the weight fraction of the TAC constituent in the parent compound.

5.1 Dust and Particulate TAC Emissions

Material handling and grinding erosion can each result in particulate emissions. The particulate emissions may contain TACs consisting primarily of heavy metals that are present in the biomass feedstock. Particulate emissions are speciated into TAC emissions using a co-composting speciation profile published by the SJVAPCD (SJVAPCD 2015). The total particulate emissions from material handling and grinding are 0.11 pounds per hour and 378.26 pounds per year. The speciation profile and resulting TAC emissions are provided as Table 5-1. Emission calculations are provided in Table 10 in Attachment E-1.

Table 5-1: Material Handling Fugitive Dust TAC Emissions

TAC	Concentration (lb/lb dust)	TAC Emissions	
		lb/hr	lb/yr
Arsenic	3.80E-06	4.65E-07	1.58E-03
Cadmium	1.30E-06	1.59E-07	5.40E-04
Hexavalent Chrome	2.50E-06	3.06E-07	1.04E-03
Cobalt	5.40E-06	6.61E-07	2.24E-03
Copper	1.80E-04	2.20E-05	7.48E-02
Lead	3.10E-05	3.80E-06	1.29E-02
Manganese	6.90E-04	8.45E-05	2.87E-01
Mercury	2.10E-06	2.57E-07	8.73E-04
Nickel	3.00E-05	3.67E-06	1.25E-02
Selenium	2.70E-06	3.31E-07	1.12E-03

5.2 Drying

TAC emissions from the drying process were estimated using AP-42 emission factors from particle board drying (EPA 2002), which are based on the dryer throughput (18,000 TPY, 49 TPD). TAC emission factors and emissions are shown in Table 5-2. Emission calculations are provided in Table 11 in Attachment E-1.

Table 5-2: Dryer TAC Emissions

TAC	Emission Factor (lb/ton)	TAC Emissions	
		lb/hr	lb/yr
Formaldehyde	0.047	0.10	846.00
Methanol	0.027	0.06	486.00

5.3 IC Engine TAC Emissions

With the exception of ammonia, TAC emissions from the IC engines are based on SJVAPCD AB 2588 emission factors for a four-stroke lean-burn engine combusting natural gas (SJVAPCD 2017a). Because TACs are typically byproducts of combustion, and natural gas has more heat content and lower inert gas content than syngas, the SJVAPCD TAC emission factors were adjusted by a ratio of the higher heating value (HHV) of the syngas [132 Btu/standard cubic foot (scf)] to the HHV of natural gas (1,000 Btu/scf).

Ammonia emissions are based on an ammonia slip rate of 10 ppm, consistent with the ammonia slip Best Available Control Technology (BACT) published by the SJVAPCD in a recent application for similar equipment with similar fuel (SJVAPCD 2019). Ammonia emissions were calculated with the criteria pollutant emissions and are presented in Table 3-6.

The TAC emission factors and emissions are presented in Table 5-3 for a single engine. The total TAC emissions from all engines are presented in Table 5-4. IC engine TAC emission calculations are provided in Table 12 in Attachment E-1.

Table 5-3: TAC Emissions – One Engine

Pollutant	CAS No.	Emission Factor (lb/MMBtu)	Hourly Emissions (lb/hr)	Annual Emissions (lb/yr)
1,1,2,2-Tetrachloroethane	79345	1.27E-06	1.18E-05	1.04E-01
1,1,2-Trichloroethane	79005	1.01E-06	9.39E-06	8.23E-02
1,1-Dichloroethane	75343	7.47E-07	6.97E-06	6.10E-02
1,2,4-Trimethylbenzene	95636	4.53E-07	4.22E-06	3.70E-02
1,3-Butadiene	106990	8.46E-06	7.89E-05	6.91E-01
2,2,4-Trimethylpentane	540841	7.92E-06	7.39E-05	6.47E-01
2-Methyl naphthalene	91576	1.05E-06	9.81E-06	8.59E-02
Acenaphthene	83329	3.96E-08	3.69E-07	3.23E-03
Acenaphthylene	208968	1.76E-07	1.64E-06	1.43E-02
Acetaldehyde	75070	2.65E-04	2.47E-03	2.17E+01
Acrolein	107028	1.62E-04	1.51E-03	1.33E+01
Benzene	71432	1.40E-05	1.30E-04	1.14E+00
Benzo[b]fluoranthene	205992	5.25E-09	4.90E-08	4.29E-04
Benzo[e]pyrene	192972	1.31E-08	1.23E-07	1.07E-03
Benzo[g,h,i]perylene	191242	1.31E-08	1.22E-07	1.07E-03
Biphenyl	92524	6.72E-06	6.27E-05	5.49E-01
Carbon tetrachloride	56235	1.16E-06	1.08E-05	9.50E-02
Chlorobenzene	108907	9.64E-07	8.99E-06	7.87E-02
Chloroform	67663	9.03E-07	8.42E-06	7.38E-02
Chrysene	218019	2.19E-08	2.04E-07	1.79E-03
Ethyl benzene	100414	1.26E-06	1.17E-05	1.03E-01
Ethylene dibromide	106934	1.40E-06	1.30E-05	1.14E-01
Ethylene dichloride	107062	7.47E-07	6.97E-06	6.10E-02
Fluoranthene	206440	3.51E-08	3.27E-07	2.87E-03
Fluorene	86737	1.80E-07	1.67E-06	1.47E-02
Formaldehyde	50000	1.68E-03	1.56E-02	1.37E+02
Hexane	110543	3.51E-05	3.27E-04	2.87E+00
Methanol	67561	7.92E-05	7.39E-04	6.47E+00
Methylene chloride	75092	6.34E-07	5.91E-06	5.18E-02

Pollutant	CAS No.	Emission Factor (lb/MMBtu)	Hourly Emissions (lb/hr)	Annual Emissions (lb/yr)
Naphthalene	91203	2.36E-06	2.20E-05	1.93E-01
PAHs, total, w/o individual components reported	1151	2.46E-07	2.29E-06	2.01E-02
Phenanthrene	85018	3.30E-07	3.08E-06	2.70E-02
Phenol	108952	7.60E-07	7.09E-06	6.21E-02
Pyrene	129000	4.30E-08	4.01E-07	3.52E-03
Styrene	100425	7.47E-07	6.97E-06	6.10E-02
Toluene	108883	1.29E-05	1.21E-04	1.06E+00
Vinyl chloride	75014	4.73E-07	4.41E-06	3.86E-02
Xylenes (mixed)	1330207	5.83E-06	5.44E-05	4.77E-01

Table 5-4: TAC Emissions – All Engines

Pollutant	CAS No.	Hourly Emissions (lb/hr)	Annual Emissions (lb/yr)
1,1,2,2-Tetrachloroethane	79345	2.36E-05	2.07E-01
1,1,2-Trichloroethane	79005	1.88E-05	1.65E-01
1,1-Dichloroethane	75343	1.39E-05	1.22E-01
1,2,4-Trimethylbenzene	95636	8.44E-06	7.40E-02
1,3-Butadiene	106990	1.58E-04	1.38E+00
2,2,4-Trimethylpentane	540841	1.48E-04	1.29E+00
2-Methyl naphthalene	91576	1.96E-05	1.72E-01
Acenaphthene	83329	7.39E-07	6.47E-03
Acenaphthylene	208968	3.27E-06	2.87E-02
Acetaldehyde	75070	4.95E-03	4.33E+01
Acrolein	107028	3.03E-03	2.65E+01
Benzene	71432	2.61E-04	2.29E+00
Benzo[b]fluoranthene	205992	9.80E-08	8.58E-04
Benzo[e]pyrene	192972	2.45E-07	2.15E-03
Benzo[g,h,i]perylene	191242	2.45E-07	2.14E-03
Biphenyl	92524	1.25E-04	1.10E+00
Carbon tetrachloride	56235	2.17E-05	1.90E-01
Chlorobenzene	108907	1.80E-05	1.57E-01
Chloroform	67663	1.68E-05	1.48E-01
Chrysene	218019	4.09E-07	3.58E-03
Ethyl benzene	100414	2.35E-05	2.06E-01
Ethylene dibromide	106934	2.61E-05	2.29E-01
Ethylene dichloride	107062	1.39E-05	1.22E-01
Fluoranthene	206440	6.55E-07	5.74E-03
Fluorene	86737	3.35E-06	2.93E-02
Formaldehyde	50000	3.13E-02	2.74E+02

Pollutant	CAS No.	Hourly Emissions (lb/hr)	Annual Emissions (lb/yr)
Hexane	110543	6.55E-04	5.74E+00
Methanol	67561	1.48E-03	1.29E+01
Methylene chloride	75092	1.18E-05	1.04E-01
Naphthalene	91203	4.41E-05	3.86E-01
PAHs, total, w/o individual components reported	1151	4.58E-06	4.01E-02
Phenanthrene	85018	6.15E-06	5.39E-02
Phenol	108952	1.42E-05	1.24E-01
Pyrene	129000	8.03E-07	7.03E-03
Styrene	100425	1.39E-05	1.22E-01
Toluene	108883	2.41E-04	2.11E+00
Vinyl chloride	75014	8.81E-06	7.72E-02
Xylenes (mixed)	1330207	1.09E-04	9.53E-01

5.4 Flare TAC Emissions

TAC emissions from the flare were based on SJVAPCD AB 2588 emission factors for digester gas combustion in a flare (SJVAPCD 2017b). Because TACs are typically byproducts of combustion, and digester gas has more heat content and lower inert gas content than syngas, the SJVAPCD TAC emission factors were adjusted by a ratio of the HHV of the syngas (132 Btu/scf) to the HHV of typical digester gas (600 Btu/scf).

The TAC emission factors and emissions for the flare are presented in Table 5-5. Flare TAC emissions are provided in Table 13 in Attachment E-1.

Table 5-5: Flare TAC Emissions

Pollutant	CAS No.	Emission Factor (lb/MMBtu)	Hourly Emissions (lb/hr)	Annual Emissions (lb/yr)
Ammonia	7664417	1.36E-06	2.59E-05	6.48E-03
Benzene	71432	4.88E-07	9.27E-06	2.32E-03
Chlorobenzene	108907	1.13E-07	2.15E-06	5.36E-04
Ethyl Benzene	100414	9.57E-06	1.82E-04	4.55E-02
Formaldehyde	50000	5.35E-04	1.02E-02	2.54E+00
Hydrogen Sulfide	7783064	4.29E-04	8.15E-03	2.04E+00
Methyl Chloroform	71556	1.54E-06	2.92E-05	7.30E-03
Methylene Chloride	75092	3.18E-05	6.04E-04	1.51E-01
Perchloroethylene	127184	8.91E-07	1.69E-05	4.23E-03
Toluene	108883	3.52E-06	6.68E-05	1.67E-02
Vinyl Chloride	75014	4.84E-07	9.20E-06	2.30E-03
Vinylidene Chloride	75354	1.13E-07	2.15E-06	5.36E-04
Xylenes	1330207	2.04E-05	3.88E-04	9.70E-02

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ATTACHMENT E-1 – EMISSION CALCULATION WORKSHEETS

Visalia Landfill
Bioenergy Facility
Emission Calculations

YORKE ENGINEERING, LLC
www.YorkeEngr.com

Table 1: Biomass Conversion Process Throughput

Table 1a: Process Throughput

Processing Step	Proposed Project (TPY)	Proposed Project (TPD)	Proposed Project (Bone Dry Ton/Yr)	Proposed Project (Bone Dry Ton/day)
Feedstock	25,000	68	18,000	49
Biochar	1,620	5	---	---

Data and Parameters			Notes
Daily Operating Hours	24	hours/day	
Raw Material quantity per truck (wet)	12	tons/truck	
Raw Material truck count	2084	Truck/year	
Raw Material Receive Days	365	Day/year	
Raw Material truck count	6	Truck/day	
Biochar Output	9%		
Biochar quantity per truck	12	tons/truck	
Biochar delivery truck count	135	Truck/year	
Biochar shipment days	312	Day/year	*Assume shipment of biochar 6 days per week*
Biochar delivery truck count	1	Truck/day	

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Table 2: Grinding PM Emissions

Table 2a: Emission Factors

Process Operation	Value	
	PM10	PM2.5
Grinding	0.0144	0.002

Table 2b: Grinding and Screening PM Emissions

Operation	Annual Throughput (ton/yr)	Peak Daily Throughput (ton/day)	Annual Emissions (lb/yr)		Daily Emissions (lb/day)		Hourly Emissions (lb/hr)	
			PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Grinding	25000	68	360	50	0.99	0.14	0.11	0.02
		Total (TPY)	0.1800	0.0250				

Data and Parameters

Operating Hours	9	hrs/day

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Table 3: Material Handling PM Emissions

Table 3a: Material Handling PM Emission Factors

Variable	Value		Note
	PM10	PM2.5	
Particle Size Multiplier (dimensionless)	0.35	0.053	1
Mean Wind Speed (MPH)	4.92	4.92	2
Material Moisture Content (%)	4.80	4.80	1
Emission Factor (lb/ton/drop point)	0.000322	0.0000488	calculated

Table 3b: Material Handling PM Emissions

Process Step	Annual Throughput (ton/yr)	Peak Daily Throughput (ton/day)	No. of Drop Points	Control Efficiency[3]	Annual Emissions (lb/yr)		Daily Emissions (lb/day)		Hourly Emissions (lb/hr)	
					PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Feedstock	25,000	68	2	0%	16.10	2.44	4.41E-02	6.68E-03	4.90E-03	7.42E-04
Grinding	25,000	68	2	0%	16.10	2.44	4.41E-02	6.68E-03	4.90E-03	7.42E-04
Load Dryer	25,000	68	2	0%	16.10	2.44	4.41E-02	6.68E-03	1.84E-03	2.78E-04
Load Biomass Conversion Process	18,000	49	1	0%	5.80	0.88	1.59E-02	2.40E-03	6.62E-04	1.00E-04
Biochar Storage	1,620	5	2	0%	1.04	0.16	3.34E-03	5.06E-04	3.72E-04	5.63E-05
Truck Loadout	1,620	5	1	0%	0.52	0.08	1.67E-03	2.53E-04	1.86E-04	2.81E-05
			Total		55.66	8.43	0.153	0.023	0.013	0.002
			Total (TPY)		0.03	0.00				

Data and Parameters

Operating Schedule: Dryer, Conversion	24	hr/day
Operating schedule: Feedstock, Biochar, Loadout	9	

Notes:

1. AP-42, Chapter 13.2.4 Aggregate Handling and Storage Piles. Moisture content used is the maximum allowed by the method. Actual moisture content will be higher, thus these emission factors are conservative.
2. CalEEMod 2021. http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/appendix-d2020-4-0-full-merge.pdf?sfvrsn=6, Table 1.1
3. MDAQMD 2000. Mojave Desert Air Quality Management District, Emissions Inventory Guidance, Mineral Handling and Processing Industries, Material Handling Table 5, April.

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Table 4: Drying ROG Emissions

Table 4a: Emission Factors

Process Operation	Value (lb/ton)	
	PM10[1]	ROG[2]
Drying	ND	0.3

Table 4b: Drying Emissions

Operation	Annual Throughput (ton/yr)	Peak Daily Throughput (ton/day)	Annual Emissions (lb/yr)		Peak Daily Emissions (lb/day)		Peak Hourly Emissions (lb/hr)	
			PM10	ROG	PM10	ROG	PM10	ROG
Drying	18000	49	ND	5400	ND	14.70	ND	0.61
		Total (TPY)	ND	2.7000				

Data and Parameters

Operating Hours	24	hr/day

Notes:

1. AP-42, Section 10.6.2, Particle Board Manufacturing, Table 10.6.2-1, Rotary Dryer, direct fired
2. AP-42, Section 10.6.2, Particle Board Manufacturing, Table 10.6.2-3, Rotary Dryer, indirect heated

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Table 5: Engine Criteria Pollutant Emission Calculations

Table 5a: IC Engine Criteria Pollutant Emission Calculations - Normal Operations

Pollutant	Emission Factor[1] (ppm)	Emission Factor (g/BHp-hr)	Emission Factor (lb/MMBtu)	Hourly Emissions (lb/hr)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)	Daily Emissions All 2 Units (lb/day)	Annual Emissions All 2 Units (lb/yr)
NOx	9	0.18	0.047	0.44	10.46	3,819.6	20.9	7,639.3
SOx	5	0.025	0.0064	0.06	1.43	522.3	2.9	1,044.6
CO	100	1.20	0.316	2.95	70.78	25,833.2	141.6	51,666.5
ROG	25	0.17	0.045	0.42	10.11	3,690.5	20.2	7,380.9
PM_{10}	-	0.03	0.008	0.07	1.75	637.4	3.5	1,274.7
$PM_{2.5}$	-	0.03	0.008	0.07	1.75	637.4	3.5	1,274.7
NH_3	10	---	0.019	0.18	4.30	1,568.4	8.6	3,136.9

Table 5b: Calculated Stack Parameters

Parameter	Value	Unit of Measure
Stack Temperature	932	F
Stack Flow, hot	3188	acf/min
Stack Flow, hot	90.27	acm/min
Stack Diameter, ft	1.67	ft
Stack Height, ft	13.9	ft
Stack Diameter, m	0.51	m
Stack Height, m	4.2	m
Stack Area, m^2	0.20	m^2
Exit Velocity, m/sec	7.4	m/sec
Exit Temperature, K	773	K

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Data and Parameters			Basis
Number engines	2	each	Project Specification
Engine Output	1572	Hp	Project Specification
Process Flow - Syngas	64,819	scf/hr	Project Specification
Process Flow - Syngas	9.33	MMBtu/hr	Calculated
Process Flow - Syngas	224	MMBtu/day	Calculated
Process Flow - Syngas	81,687	MMBtu/yr	Calculated
Syngas F-factor	12,100	dscf/MMBtu	Project Specification
Molar Volume	379.5	scf/lbmol	Constant, EPA Method 19
Syngas Heating Value	132	Btu/scf	Project Specification
Constant	393.236	Hp-hr/MMBtu	SJVAPCD Default
Engine Efficiency	30%		Assumption
Conversion	453.59	g/lb	Constant
MW NOx	46	lb/lbmol	Constant
MW S	32.06	lb/lbmol	Constant
MW SO2	64.06	lb/lbmol	Constant
MW CO	28	lb/lbmol	Constant
MW VOC	16	lb/lbmol	Constant
MW NH3	17	lb/lbmol	Constant
Stack Oxygen	15.0	%	Rule Specification

Notes

1. Emission factors per SJVAPCD permit C-8980-1/2-0
2. All CO2e emissions from engine operation are biogenic and are not calculated.

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Table 6: Engine Criteria Pollutant Emission Calculations

Table 6a: IC Engine Criteria Pollutant Emission Calculations - Commissioning Period

Pollutant	Emission Factor[1] (ppm)	Emission Factor (g/BHp-hr)	Emission Factor (lb/MMBtu)	Hourly Emissions (lb/hr)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)	Daily Emissions All 2 Units (lb/day)	Annual Emissions All 2 Units (lb/yr)
NOx	51	1.00	0.264	2.46	59.10	1,231.2	118.2	2,462.4
SOx	5	0.025	0.0064	0.06	1.43	29.8	2.9	59.6
CO	1211	14.50	3.829	35.70	856.90	17,852.1	1,713.8	35,704.3
ROG	63	0.43	0.114	1.06	25.41	529.4	50.8	1,058.8
PM_{10}		0.03	0.008	0.07	1.75	36.4	3.5	72.8
$PM_{2.5}$		0.03	0.008	0.07	1.75	36.4	3.5	72.8
NH3	0	0	0.000	0.00	0.00	0.0	---	---

Table 6b: IC Engine Criteria Pollutant Emission Calculations - Balance of Year

Pollutant	Emission Factor[1] (ppm)	Emission Factor (g/BHp-hr)	Emission Factor (lb/MMBtu)	Hourly Emissions (lb/hr)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)	Daily Emissions All 2 Units (lb/day)	Annual Emissions All 2 Units (lb/yr)
NOx	9	0.18	0.047	0.44	10.46	3,601.6	20.9	7,203.2
SOx	5	0.025	0.0064	0.06	1.43	492.5	2.9	985.0
CO	100	1.20	0.316	2.95	70.78	24,358.7	141.6	48,717.5
ROG	25	0.17	0.045	0.42	10.11	3,479.8	20.2	6,959.6
PM_{10}	-	0.03	0.008	0.07	1.75	601.0	3.5	1,202.0
$PM_{2.5}$	-	0.03	0.008	0.07	1.75	601.0	3.5	1,202.0
NH_3	10	---	0.019	0.18	4.30	1,478.9	8.6	2,957.8

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Table 6c: IC Engine Criteria Pollutant Emission Calculations - Total Emissions - First Year

Pollutant	Hourly Emissions (lb/hr)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)	Maximum Daily Emissions All 2 Units (lb/day)	Maximum Annual Emissions All 2 Units (lb/yr)
NOx	2.46	59.10	4,832.8	118.2	9,665.6
SOx	0.06	1.43	522.3	2.9	1,044.6
CO	35.70	856.90	42,210.9	1,713.8	84,421.8
ROG	1.06	25.41	4,009.2	50.8	8,018.5
PM_{10}	0.07	1.75	637.4	3.5	1,274.7
$PM_{2.5}$	0.07	1.75	637.4	3.5	1,274.7
NH_3	0.18	4.30	1,478.9	8.6	2,957.8

Data and Parameters			Basis
Number of engines	2	each	Project Specification
Engine Output	1572	Hp	Project Specification
Process Flow - Syngas	64,819	scf/hr	Project Specification
Process Flow - Syngas	9.33	MMBtu/hr	Calculated
Process Flow - Syngas	224	MMBtu/day	Calculated
Process Flow - Syngas	81,687	MMBtu/yr	Calculated
Syngas F-factor	12,100	dscf/MMBtu	Project Specification
Molar Volume	379.5	scf/lbmol	Constant, EPA Method 19
Syngas Heating Value	132	Btu/scf	Project Specification
Constant	393.236	Hp-hr/MMBtu	SJVAPCD Default
Engine Efficiency	30%		Assumption
Conversion	453.59	g/lb	Constant
MW NOx	46	lb/lbmol	Constant
MW S	32.06	lb/lbmol	Constant
MW SOX	64.06	lb/lbmol	Constant
MW CO	28	lb/lbmol	Constant
MW VOC	16	lb/lbmol	Constant
MW NH3	17	lb/lbmol	Constant
Stack Oxygen	15.0	%	Rule Specification
Commissioning Hours	500	hr/yr	Anticipated condition
Total Annual hours	8760	hr/yr	Constant
Hours in normal operation	8260	hr/yr	Calculated

Notes

1. Emission factors per SJVAPCD permit C-8980-1/2-0
2. All CO2e emissions from engine operation are biogenic and are not calculated.

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Table 7: Flare Criteria Pollutant Emission Calculations

Table 7a: Flare Criteria Pollutant Emissions

Pollutant	Emission Factor[1] (lb/MMBtu)	Hourly Emissions (lb/hr)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)
NOx	0.068	1.29	31.01	323.0
SOx	0.0064	0.12	2.92	30.4
CO	0.310	5.89	141.36	1,472.5
ROG	0.063	1.20	28.73	299.3
PM_{10}	0.008	0.15	3.56	37.1
$PM_{2.5}$	0.008	0.15	3.56	37.1

Table 7b: Stack Parameters

Parameter	Value	Unit of Measure
Stack Oxygen	15	%
Minimum Stack Temperature	1400	F
Stack Temperature	1860	R
Standard Temperature	520	R
Stack Moisture	10.0	%
Stack Flow, dry	13573.2	dscf/min @ % O2
Stack Flow, wet	14930.5	wscf/min @ % O2
Stack Flow, hot	53405.3	wacf/min @ % O2 @ T
Stack Flow, hot	1512.3	wacm/min @ % O2 @ T
Stack Diameter, ft	3.00	ft
Stack Height, ft	15.0	ft
Stack Diameter, m	0.91	m
Stack Height, m	4.6	m
Stack Area, m^2	0.66	m^2
Exit Velocity, m/sec	38.4	m/sec
Exit Temperature, K	1033	K

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Data and Parameters			Notes
Process Flows - Syngas	19.00	MMBtu/hr	Project Specification
	456.0	MMBtu/day	Calculated
	4,750	MMBtu/yr	Calculated
Operating Schedule	24	hr/day	Project Specification
	250	hr/yr	Project Specification
Syngas F-factor	12100	dscf/MMBtu	Project Specification
Syngas Heating Value	132	Btu/scf	Project Specificaiton
Syngas Exit Temp	1400	F	BACT
Standard Temp	60	F	Constant
Constant	460	R	Constant

Notes

1. Emission factors per SJVAPCD permit C-8980-3-0
2. All CO2e emissions from engine operation are biogenic and are not calculated.

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Table 8: Cooling Tower Criteria Pollutant Emission Calculations

Table 8a. Cooling Tower PM10 Emissions

Parameter	Value
Circulation Rate Average (GPM)	860
Drift Factor (%)	0.0005
TDS @ 5 cycles of concentration (ppmw)	2200
Circulation (Mmgal/day)	1.2384
PM10 Emissions (lbs/yr)	41.468

PM10 Emissions = Circ rate x (TDS/10^6) x (DF/100) x density x min/hr x Op Hours

Table 8b. Cooling Tower ROG Emissions

Parameter	Value
Emission Factor (lb/hr	0.39
ROG Emissions (lbs/yr)	3416.4

Table 8c. Cooling Tower ROG Emissions

Pollutant	lb/hr	lb/day	lb/yr
PM10	4.73E-03	0.11	41.47
ROG	0.39	9.36	3416.40

Data and Parameters

Density of Water	8.34	lb/gal
Constant	60	min/hr
Operating Hours	8760	hr/yr
Operating Days	365	day/yr

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Table 9: Summary of Emissions

Table 9a: Summary of Daily Criteria Pollutant Emissions

Activity	NOx (lb/day)	ROG (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
2. Grind	0	0	0	0	0.99	0.14
3. Material Handling	0	0	0	0	0.15	0.02
4. Dryer	0	14.70	0	0	0	0
5. Engine Normal	20.93	20.22	141.55	2.86	3.49	3.49
7. Flare	31.01	28.73	141.36	2.92	3.56	3.56
8. Cooling Tower	0	9.36	0	0	0.11	0.11
Total[1]	31.01	52.79	141.55	2.92	4.81	3.83

Note: The hourly total reflects the sum of emissions from Grind, Material Handling, Dryer, and Cooling Tower, and the higher of either Engine or Flare, since the engines and flare would not operate concurrently.

Table 9b: Summary of Annual Criteria Pollutant Emissions - Normal Operations

Activity	NOx (lb/yr)	ROG (lb/yr)	CO (lb/yr)	SOx (lb/yr)	PM10 (lb/yr)	PM2.5 (lb/yr)
2. Grind	---	---	---	---	360.00	50.00
3. Material Handling	---	---	---	---	55.66	8.43
4. Dryer	---	5400	---	---	---	---
5. Engine Normal	7639.26	7380.93	51666.48	1044.61	1274.72	1274.72
7. Flare	323.00	299.25	1472.50	30.37	37.06	37.06
8. Cooling Tower	---	3416.40	---	---	41.47	41.47
Total	7962.26	16496.58	53138.98	1074.98	1768.91	1411.68
Total (TPY)	3.98	8.25	26.57	0.54	0.88	0.71

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Table 9c: Summary of Annual Criteria Pollutant Emissions - Commissioning Year

Activity	NOx (lb/yr)	ROG (lb/yr)	CO (lb/yr)	SOx (lb/yr)	PM10 (lb/yr)	PM2.5 (lb/yr)
2. Grind	---	---	---	---	360.00	50.00
3. Material Handling	---	---	---	---	55.66	8.43
4. Dryer	---	5400.00	---	---	---	---
6. Engine Commission	9665.59	8018.46	84421.76	1044.61	1274.72	1274.72
7. Flare	323.00	299.25	1472.50	30.37	37.06	37.06
8. Cooling Tower	---	3416.40	---	---	41.47	41.47
Total	9988.59	17134.11	85894.26	1074.98	1768.91	1411.68
Total (TPY)	4.99	8.57	42.95	0.54	0.88	0.71

Table 9d: Summary of Annual GHG Emissions

Activity	CO_2 (MT/yr)	CH_4 (MT/yr)	N_2O (MT/yr)	CO2e (MT/Yr)
2. Grind	---	---	---	---
3. Material Handling	---	---	---	---
4. Dryer	---	---	---	---
5. Engine Normal[2]	---	---	---	---
7. Flare2	---	---	---	---
8. Cooling Tower	---	---	---	---
Total	**0.00**	**0.00**	**0.00**	**0.00**

Notes:

1. The hourly total reflects the sum of emissions from Grind, Material Handling, Dryer, and Cooling Tower, and the higher of either Engine or Flare, since the engines and flare would not operate concurrently.
2. All CO2e emissions from engine and flare operation are biogenic and are not included in the emission inventory for the project.

Table 10: TAC from Material Handling Dust

Table 10a: Material Handling and Wind Erosion Dust Emissions

Source	lb/hr	lb/yr
Grinding	0.11	360.00
Material Handling	0.01	55.66
Total PM10	**0.12**	**415.66**

Table 10b: TAC from Material Handling and Wind Erosion

TAC	Concentration (lb/lb Dust)	TAC Emissions (lb/hr)	TAC Emissions (lb/yr)
Arsenic	6.20E-06	7.59E-07	2.58E-03
Cadmium	2.00E-06	2.45E-07	8.31E-04
Hexavalent Chrome	2.45E-06	3.00E-07	1.02E-03
Cobalt	8.80E-06	1.08E-06	3.66E-03
Copper	6.90E-05	8.45E-06	2.87E-02
Lead	2.00E-04	2.45E-05	8.31E-02
Manganese	4.40E-04	5.39E-05	1.83E-01
Mercury	1.00E-06	1.22E-07	4.16E-04
Nickel	9.50E-05	1.16E-05	3.95E-02
Selenium	1.00E-06	1.22E-07	4.16E-04

Notes:

1. SJVAPCD Toxic Emission Factors for fugitive dust from Co-composting operations (September 15, 2015), accessed: https://www.valleyair.org/busind/pto/emission_factors/emission_factors_idx.htm
2. Hexavalent chromium is assumed to be 5% of total chromium per SJVAPCD guidance.

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Table 11: TAC from Dryer Operation

Table 11a: Dryer Throughput Information

TPH	TPY
49.00	18,000

Table 11b: Dryer TAC Emissions

TAC	Emission Factor[1] (lb/ton)	TAC Emissions	
		lb/hr	lb/yr
Formaldehyde	0.047	2.30	846.00
Methanol	0.027	1.32	486.00

Notes:

1. AP-42, Section 10.6.2, Particle Board Manufacturing, Table 10.6.2-3, Rotary Dryer, indirect heated

Table 12: IC Engine TAC Emission Calculations

Table 12a: Syngas TAC Emissions per Unit

Pollutant	CAS No.	Natural Gas Emission Factor[1] (lb/MMscf)	Natural Gas Emission Factor (lb/MMBtu)	Syn Gas Emission Factor[2] (lb/MMBtu)	Hourly Emissions (lb/hr)	Annual Emissions (lb/yr)
1,1,2,2-Tetrachloroethane	79345	9.60E-03	9.60E-06	1.27E-06	1.18E-05	1.04E-01
1,1,2-Trichloroethane	79005	7.63E-03	7.63E-06	1.01E-06	9.39E-06	8.23E-02
1,1-Dichloroethane	75343	5.66E-03	5.66E-06	7.47E-07	6.97E-06	6.10E-02
1,2,4-Trimethylbenzene	95636	3.43E-03	3.43E-06	4.53E-07	4.22E-06	3.70E-02
1,3-Butadiene	106990	6.41E-02	6.41E-05	8.46E-06	7.89E-05	6.91E-01
2,2,4-Trimethylpentane	540841	6.00E-02	6.00E-05	7.92E-06	7.39E-05	6.47E-01
2-Methyl naphthalene	91576	7.97E-03	7.97E-06	1.05E-06	9.81E-06	8.59E-02
Acenaphthene	83329	3.00E-04	3.00E-07	3.96E-08	3.69E-07	3.23E-03
Acenaphthylene	208968	1.33E-03	1.33E-06	1.76E-07	1.64E-06	1.43E-02
Acetaldehyde	75070	2.01E+00	2.01E-03	2.65E-04	2.47E-03	2.17E+01
Acrolein	107028	1.23E+00	1.23E-03	1.62E-04	1.51E-03	1.33E+01
Benzene	71432	1.06E-01	1.06E-04	1.40E-05	1.30E-04	1.14E+00
Benzo[b]fluoranthene	205992	3.98E-05	3.98E-08	5.25E-09	4.90E-08	4.29E-04
Benzo[e]pyrene	192972	9.96E-05	9.96E-08	1.31E-08	1.23E-07	1.07E-03
Benzo[g,h,i]perylene	191242	9.94E-05	9.94E-08	1.31E-08	1.22E-07	1.07E-03
Biphenyl	92524	5.09E-02	5.09E-05	6.72E-06	6.27E-05	5.49E-01
Carbon tetrachloride	56235	8.81E-03	8.81E-06	1.16E-06	1.08E-05	9.50E-02
Chlorobenzene	108907	7.30E-03	7.30E-06	9.64E-07	8.99E-06	7.87E-02
Chloroform	67663	6.84E-03	6.84E-06	9.03E-07	8.42E-06	7.38E-02
Chrysene	218019	1.66E-04	1.66E-07	2.19E-08	2.04E-07	1.79E-03
Ethyl benzene	100414	9.53E-03	9.53E-06	1.26E-06	1.17E-05	1.03E-01
Ethylene dibromide {EDB}	106934	1.06E-02	1.06E-05	1.40E-06	1.30E-05	1.14E-01
Ethylene dichloride {EDC}	107062	5.66E-03	5.66E-06	7.47E-07	6.97E-06	6.10E-02
Fluoranthene	206440	2.66E-04	2.66E-07	3.51E-08	3.27E-07	2.87E-03
Fluorene	86737	1.36E-03	1.36E-06	1.80E-07	1.67E-06	1.47E-02
Formaldehyde	50000	1.27E+01	1.27E-02	1.68E-03	1.56E-02	1.37E+02
Hexane	110543	2.66E-01	2.66E-04	3.51E-05	3.27E-04	2.87E+00
Methanol	67561	6.00E-01	6.00E-04	7.92E-05	7.39E-04	6.47E+00
Methylene chloride {Dichlorometh	75092	4.80E-03	4.80E-06	6.34E-07	5.91E-06	5.18E-02
Naphthalene	91203	1.79E-02	1.79E-05	2.36E-06	2.20E-05	1.93E-01
PAHs, total, w/o individ. compone	1151	1.86E-03	1.86E-06	2.46E-07	2.29E-06	2.01E-02
Phenanthrene	85018	2.50E-03	2.50E-06	3.30E-07	3.08E-06	2.70E-02
Phenol	108952	5.76E-03	5.76E-06	7.60E-07	7.09E-06	6.21E-02
Pyrene	129000	3.26E-04	3.26E-07	4.30E-08	4.01E-07	3.52E-03
Styrene	100425	5.66E-03	5.66E-06	7.47E-07	6.97E-06	6.10E-02
Toluene	108883	9.79E-02	9.79E-05	1.29E-05	1.21E-04	1.06E+00
Vinyl chloride	75014	3.58E-03	3.58E-06	4.73E-07	4.41E-06	3.86E-02
Xylenes (mixed)	1330207	4.42E-02	4.42E-05	5.83E-06	5.44E-05	4.77E-01

Visalia Landfill
Bioenergy Facility
Emission Calculations

Table 12b: Engine TAC Emissions All Units

Pollutant	CAS No.	Hourly Emissions (lb/hr)	Annual Emissions (lb/yr)
1,1,2,2-Tetrachloroethane	79345	2.36E-05	2.07E-01
1,1,2-Trichloroethane	79005	1.88E-05	1.65E-01
1,1-Dichloroethane	75343	1.39E-05	1.22E-01
1,2,4-Trimethylbenzene	95636	8.44E-06	7.40E-02
1,3-Butadiene	106990	1.58E-04	1.38E+00
2,2,4-Trimethylpentane	540841	1.48E-04	1.29E+00
2-Methyl naphthalene	91576	1.96E-05	1.72E-01
Acenaphthene	83329	7.39E-07	6.47E-03
Acenaphthylene	208968	3.27E-06	2.87E-02
Acetaldehyde	75070	4.95E-03	4.33E+01
Acrolein	107028	3.03E-03	2.65E+01
Benzene	71432	2.61E-04	2.29E+00
Benzo[b]fluoranthene	205992	9.80E-08	8.58E-04
Benzo[e]pyrene	192972	2.45E-07	2.15E-03
Benzo[g,h,i]perylene	191242	2.45E-07	2.14E-03
Biphenyl	92524	1.25E-04	1.10E+00
Carbon tetrachloride	56235	2.17E-05	1.90E-01
Chlorobenzene	108907	1.80E-05	1.57E-01
Chloroform	67663	1.68E-05	1.48E-01
Chrysene	218019	4.09E-07	3.58E-03
Ethyl benzene	100414	2.35E-05	2.06E-01
Ethylene dibromide {EDB}	106934	2.61E-05	2.29E-01
Ethylene dichloride {EDC}	107062	1.39E-05	1.22E-01
Fluoranthene	206440	6.55E-07	5.74E-03
Fluorene	86737	3.35E-06	2.93E-02
Formaldehyde	50000	3.13E-02	2.74E+02
Hexane	110543	6.55E-04	5.74E+00
Methanol	67561	1.48E-03	1.29E+01
Methylene chloride {Dichlorometh	75092	1.18E-05	1.04E-01
Naphthalene	91203	4.41E-05	3.86E-01
PAHs, total, w/o individ. compone	1151	4.58E-06	4.01E-02
Phenanthrene	85018	6.15E-06	5.39E-02
Phenol	108952	1.42E-05	1.24E-01
Pyrene	129000	8.03E-07	7.03E-03
Styrene	100425	1.39E-05	1.22E-01
Toluene	108883	2.41E-04	2.11E+00
Vinyl chloride	75014	8.81E-06	7.72E-02
Xylenes (mixed)	1330207	1.09E-04	9.53E-01

Data and Parameters

Process Flows - Syngas	9.33	MMBtu/hr	Project specification, per engine
	223.80	MMBtu/day	Project specification
	81687.00	MMBtu/yr	Project specification
Syngas F-factor	12100	dscf/MMBtu	Syngas Analysis, EPA Method 19
Molar Volume	379.5	scf/lbmol	Constant, EPA Method 19
Syngas Heating Value	132	Btu/scf	
HHV of Natural Gas	1000	Btu/scf	Used to convert EFs from lb/scf to lb/MMBtu

Notes

1. SJVAPCD AB 2588 "Hot Spots" Air Toxics Profiles, March 27, 2017, District Profile 239 for NG Internal Combustion 4SLB Engine CAT RED, which notes: The emission factors derived from Table 3.2-2 (pg. 11), "Uncontrolled Emission Factors For 4-Stroke Lean-Burn Engines" in July 2000 AP 42, Fifth Edition, Volume I, Chapter 3: Stationary Internal Combustion Sources, Section 2: Natural Gas-Fired Reciprocating Engine. Assumes 1,000 Btu per scf natural gas 76% TAC reduction applied by use of catalyst

2. Published emission factors are for natural gas. Natural gas EF are adjusted for syngas by taking a ratio of the HHV of syn gas to the HHV of natural gas.

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Table 13: Flare TAC Emission Calculations

Table 13a: Syngas TAC Emissions per Unit

Pollutant	CAS No.	Digester Gas Emission Factor[1] (lb/MMscf)	Digester Gas Emission Factor (lb/MMBtu)	Syn Gas Emission Factor[2] (lb/MMBtu)	Hourly Emissions (lb/hr)	Annual Emissions (lb/yr)
Ammonia	7664417	3.72E-03	6.20E-06	1.36E-06	2.59E-05	6.48E-03
Benzene	71432	1.33E-03	2.22E-06	4.88E-07	9.27E-06	2.32E-03
Chlorobenzene	108907	3.08E-04	5.13E-07	1.13E-07	2.15E-06	5.36E-04
Ethyl Benzene	100414	2.61E-02	4.35E-05	9.57E-06	1.82E-04	4.55E-02
Formaldehyde	50000	1.46E+00	2.43E-03	5.35E-04	1.02E-02	2.54E+00
Hydrogen Sulfide	7783064	1.17E+00	1.95E-03	4.29E-04	8.15E-03	2.04E+00
Methyl Chloroform	71556	4.19E-03	6.98E-06	1.54E-06	2.92E-05	7.30E-03
Methylene Chloride	75092	8.67E-02	1.45E-04	3.18E-05	6.04E-04	1.51E-01
Perchloroethylene	127184	2.43E-03	4.05E-06	8.91E-07	1.69E-05	4.23E-03
Toluene	108883	9.59E-03	1.60E-05	3.52E-06	6.68E-05	1.67E-02
Vinyl Chloride	75014	1.32E-03	2.20E-06	4.84E-07	9.20E-06	2.30E-03
Vinylidene Chloride	75354	3.08E-04	5.13E-07	1.13E-07	2.15E-06	5.36E-04
Xylenes	1330207	5.57E-02	9.28E-05	2.04E-05	3.88E-04	9.70E-02

Data and Parameters

Process Flows - Syngas	19.00	MMBtu/hr	Project specification
	456.00	MMBtu/day	Project specification
	4750.00	MMBtu/yr	Project specification
Syngas F-factor	12100	dscf/MMBtu	Syngas Analysis, EPA Method 19
Molar Volume	379.5	scf/lbmol	Constant, EPA Method 19
Syngas Heating Value	132	Btu/scf	
HHV of Digester Gas[2]	600	Btu/scf	Used to convert Efs from lb/scf to lb/MMBtu

Notes

1. SJVAPCD AB 2588 “Hot Spots” Air Toxics Profiles, March 27, 2017, District Profile 230, which notes: "Digester Gas External and Internal Combustion Factors as developed by San Diego Country Air Pollution Control District" in the November 1993 memo from SDAPCD.
2. Published emission factors are for digester gas. Digester gas EF are adjusted for syngas by taking a ratio of the HHV of syn gas to the HHV of digester gas.

APPENDIX F – AIR QUALITY MODELING AND HEALTH RISK PRIORITIZATION SCORE

Appendix F

Air Quality Impact Analysis and Health Risk Assessment Report

Prepared for:

Tulare County
Solid Waste Department
Compost and Bioenergy Facilities
Visalia Landfill
8614 Avenue 328
Visalia, CA 93291

November 2021

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Attachments

List of Acronyms, Abbreviations, and Symbols

AAQA	Ambient Air Quality Analysis
AAQS	Ambient Air Quality Standards
BPIPPRM	Building Profile Input Program for PRIME
CAAQS	California Ambient Air Quality Standards
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAS	Chemical Abstracts Service
CASP	Covered Aerated Static Pile
CEQA	California Environmental Quality Act
CO	Carbon Monoxide
DPM	Diesel Particulate Matter
EPA	[United States] Environmental Protection Agency
GAMAQI	[SJVAPCD] Guidance for Assessing and Mitigating Air Quality Impacts
GLC	Ground-Level Concentration
hr	Hour
HRA	Health Risk Assessment
m	Meter
km	kilometer
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NAD	North American Datum
NED	National Elevation Dataset
NH_3	Ammonia
NO	Nitric Oxide
NO_x	Oxides of Nitrogen
NO_2	Nitrogen Dioxide
NWS	National Weather Service
O_3	Ozone
OEHHA	[California] Office of Environmental Health Hazard Assessment
PM	Particulate Matter
$PM_{2.5}$	Fine Particulate Matter (Less Than 2.5 Microns in Size)
PM_{10}	Respirable Particulate Matter (Less Than 10 Microns in Size)
SB	Senate Bill
SIL	Significant Impact Level
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_2	Sulfur Dioxide
SO_x	Oxides of Sulfur
TAC	Toxic Air Contaminant

TPY	Tons per Year
TS	Total Score
U.S.	United States
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compound
yr	Year
$\mu g/m^3$	Micrograms per Cubic Meter
%	Percent

Air Quality Impact Analysis and Health Risk Assessment Report

1.0 INTRODUCTION

Tulare County Solid Waste Department intends to develop a compost facility featuring covered aerated static pile (CASP) technology to comply with the upcoming Senate Bill (SB) 1383 regulations. The County intends to enter into a public/private partnership to operate the facility. The compost facility will be located on the County's Visalia Landfill property that encompasses approximately 634 acres, of which the compost facility will occupy 36 acres. The compost facility will be designed to accept up to 200,000 tons per year (TPY) of organic material that would have otherwise been landfilled. The compost facility would install and operate processing and composting equipment, a 50,000-square-foot processing building, paved compost pads, and a lined storm water/contact water retention pond.

The Solid Waste Department is also proposing to develop a 2.0-megawatt (MW) bioenergy facility at the Visalia Landfill. The County intends to enter into a public/private partnership to operate the facility. The facility will use waste wood as the feedstock to produce electricity, heat, and biochar. The wood waste would be diverted from the landfill. The facility will utilize approximately 18,000 bone-dry tons of wood chips per year or 25,000 TPY of wet recovered wood waste and produce 2.0 MW (net) of electrical energy. In addition, the facility will also produce approximately 20 to 30 million British thermal units of waste heat and approximately 300 to 600 pounds of biochar per hour. Facility equipment will include grinding equipment, a non-fired wood dryer, a gasifier, two syngas-fueled engine-generators (gensets), a cooling tower, and a limited-use flare.

2.0 EMISSIONS

This section provides a summary of the projected criteria pollutant and toxic air contaminant (TAC) emissions associated with construction and operations of the proposed Project. The criteria pollutant emissions are compared to the significance thresholds to determine if ambient air quality modeling is required.

2.1 Construction Criteria Pollutant Emissions

Construction emissions are compared to the daily and annual California Environmental Quality Act (CEQA) significance thresholds in Table 2-1 and 2-2. As shown in Table 2-1, the anticipated daily construction volatile organic compound (VOC) emissions will exceed the daily threshold of 100 pounds per day. However, modeling is not required for VOC emissions because there are no ambient air quality standards for VOCs; therefore, modeling for construction activities is not required.

Table 2-1: Construction Emissions Compared to Daily CEQA Emissions Thresholds

Category	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Project Construction Emissions	54.99	225.83	50.73	0.12	3.34	4.06
CEQA Permitted Source Threshold	100	100	100	100	100	100
Exceed Threshold?	**No**	***Yes***	**No**	**No**	**No**	**No**

Table 2-2: Construction Emissions Compared to Annual CEQA Emissions Thresholds

Category	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_x (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Project Construction Emissions	3.35	2.08	3.03	0.0071	0.28	0.18
CEQA Construction Threshold	10	10	100	27	15	15
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

2.2 Operational Criteria Pollutant Emissions

Project permitted and non-permitted source emissions are compared to the daily and annual CEQA significance thresholds in Tables 2-3 and 2-4. Since the engines and flare of the bioenergy facility will not operate concurrently, the emissions reflect the higher of either the engines or the flare.

The daily operating emissions from non-permitted sources and the annual operating emissions for non-permitted and permitted sources are below the CEQA threshold. However, the daily operating emissions for permitted sources exceed the 100 pounds per day threshold for VOC and carbon monoxide (CO). Modeling is not required for VOC emissions because there are no ambient air quality standards for VOC. However, because CO exceeds the 100 pounds per day threshold, ambient air quality modeling is required for operations.

Table 2-3: Project Emissions Compared to Daily CEQA Emissions Thresholds

Category	Source	NO_x	VOC	CO	SO_x	PM_{10}	$PM_{2.5}$
		lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Permitted Sources							
Bioenergy Facility	Grinding	–	–	–	–	0.99	0.14
	Material Handling	–	–	–	–	0.15	0.02
	Drying	–	14.70	–	–	–	–
	IC Engines	20.93	20.22	141.55	2.86	3.49	3.49
	Flare	31.01	28.73	141.36	2.92	3.56	3.56
	Cooling Tower	–	9.36	–	–	0.11	0.11
Composting	Composting/Curing	–	175.77	–	–	–	–
	Grind and Screen	–	–	–	–	3.69	0.55
	Material Handling	–	–	–	–	1.53	0.23
	Wind Erosion	–	–	–	–	0.34	0.14
Total Permitted Activities Emissions		31.01	248.78	141.55	2.92	10.37	4.75
SJVAPCD CEQA Threshold		***100***	***100***	***100***	***100***	***100***	***100***
Above Threshold?		***No***	***Yes***	***Yes***	***No***	***No***	***No***
Non-Permitted Sources							
Mobile Sources	Vehicle Exhaust – On-Road	17.48	0.32	3.15	0.10	1.16	0.57
	Paved Road Dust – On-Road	–	–	–	–	2.39	0.60
	Equipment Exhaust – Off-Road	4.71	2.20	40.79	0.08	0.16	0.16
	Unpaved Road Dust – Off-Road	–	–	–	–	5.88	0.59
Total Non-Permitted Activities Emissions		22.19	2.52	43.94	0.17	9.59	1.91
SJVAPCD CEQA Threshold		***100***	***100***	***100***	***100***	***100***	***100***
Above Threshold?		***No***	***No***	***No***	***No***	***No***	***No***

Notes:

1. Mobile source emissions in Table 2-3 include both on-site and off-site (near-site and highway).
2. Per SJVAPCD Policy APR-2030, AQIA modeling included on-site and near-site mobile sources (¼ mile of property boundary).

Table 2-4: Project Emissions Compared to Annual CEQA Emissions Thresholds

Category	Source	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_x (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Permitted Sources							
Bioenergy Facility	Grinding	–	–	–	–	0.18	0.03
	Material Handling	–	–	–	–	0.03	0.004
	Drying	–	2.70	–	–	–	–
	IC Engines	3.82	3.69	25.83	0.52	0.64	0.64
	Flare	0.16	0.15	0.74	0.02	0.02	0.02
	Cooling Tower	–	1.71	–	–	0.02	0.02
Composting	Composting/Curing	–	29.44	–	–	–	–
	Grind and Screen	–	–37.69	–	–	0.58	0.09
	Material Handling	–	–	–	–	0.24	0.04
	Wind Erosion	–	–	–	–	0.06	0.02
Total Permitted Activities Emissions		3.98	10[3]	26.57	0.54	1.76	0.85
SJVAPCD CEQA Threshold		***10***	***10***	***100***	***27***	***15***	***15***
Above Threshold?		***No***	***No***	***No***	***No***	***No***	***No***
Non-Permitted Sources							
Mobile Sources	Vehicle Exhaust – On-Road	2.73	0.05	0.49	0.01	0.18	0.09
	Paved Road Dust – On-Road	–	–	–	–	0.36	0.09
	Equipment Exhaust – Off-Road	0.73	0.34	6.36	0.01	0.02	0.02
	Unpaved Road Dust – Off-Road	–	–	–	–	0.92	0.09
Total Non-Permitted Activities Emissions		3.46	0.39	6.86	0.03	1.48	0.29
SJVAPCD CEQA Threshold		***10***	***10***	***100***	***27***	***15***	***15***
Above Threshold?		***No***	***No***	***No***	***No***	***No***	***No***

Notes:

1. Mobile source emissions in Table 2-4 include both on-site and off-site (near-site and highway).
2. Per SJVAPCD Policy APR-2030, AQIA modeling included on-site and near-site mobile sources (¼ mile of property boundary).
3. With the purchase of 27.69 TPY VOC Emission Reduction Credits (ERCs) to comply with Rule 2202, VOCs are below the significance threshold.

2.3 Construction Toxic Air Contaminant Emissions

Diesel-powered construction equipment emits diesel particulate matter (DPM), a composite of TACs. It was conservatively assumed that 100% of the respirable particulate matter (PM_{10}) engine exhaust emissions are DPM. The construction-related DPM emissions for the entire construction period from the construction equipment, on-site diesel truck, and near-site (emissions that occur offsite within ¼ mile of the facility) truck travel are presented in Table 2-5.

Table 2-5: DPM Emissions – Entire Construction Period

Source	Compost Facility Phase 1 (lb)	Compost Facility Phase 2 (lb)	Compost Facility Phase 3 (lb)	Bioenergy Facility (lb)	Total Construction Emissions (lb)	Average Annual Construction Emissions (lb/yr)
Construction Equipment	195.80	46.60	46.60	92.00	381.00	127.00

2.4 Operational Toxic Air Contaminant Emissions

TACs are air pollutants that may be present in ambient air in relatively low concentrations but have characteristics such as toxicity or persistence that may make them a hazard to human health. These TACs include volatile and semi-volatile organic compounds, heavy metals, and others.

The emissions of TACs may be calculated using process information for a given activity and an appropriate emission factor, or the emissions may be calculated by "speciating" the PM_{10} and/or VOC emissions using a profile that identifies the weight fraction of the TAC constituent in the parent compound.

TAC emissions are limited to on-site emissions and near-site emissions (i.e., emissions that occur offsite within ¼ mile of the facility). The proposed Project TAC emissions are summarized in Table 2-6.

Detailed emission calculations are provided in the appendices of the CEQA technical report (Appendix C for the mobile sources and Appendices D and E for the stationary sources).

Table 2-6: Operational TAC Emissions

Pollutant	CAS	Composting		Bioenergy Facility			Mobile Sources				Total Emissions
		NH_3/ Organics	Dust/PM	Drying	Engines	Flare	Diesel	Gasoline	Paved Road Dust	Unpaved Off-Road Dust	
		Annual Emissions (lb/yr)									
1,1,2,2-Tetrachloroethane	79345	–	–	–	2.07E-01	–	–	–	–	–	**2.07E-01**
1,1,2-Trichloroethane	79005	–	–	–	1.65E-01	–	–	–	–	–	**1.65E-01**
1,1-Dichloroethane	75343	–	–	–	1.22E-01	–	–	–	–	–	**1.22E-01**
1,2,4-Trimethylbenzene	95636	–	–	–	7.40E-02	–	–	6.07E-01	–	–	**6.81E-01**
1,3-Butadiene	106990	–	–	–	1.38E+00	–	–	3.34E-01	–	–	**1.72E+00**
2,2,4-Trimethylpentane	540841	–	–	–	1.29E+00	–	–	–	–	–	**1.29E+00**
2-Methyl naphthalene	91576	–	–	–	1.72E-01	–	–	–	–	–	**1.72E-01**
Acenaphthene	83329	–	–	–	6.47E-03	–	–	–	–	–	**6.47E-03**
Acenaphthylene	208968	–	–	–	2.87E-02	–	–	–	–	–	**2.87E-02**
Acetaldehyde	75070	8.24E+01	–	–	4.33E+01	–	–	1.52E-01	–	–	**1.25E+02**
Acrolein	107028	–	–	–	2.65E+01	–	–	8.51E-02	–	–	**2.66E+01**
Ammonia	7664417	5.13E+03	–	–	–	6.48E-03	–	–	–	–	**4.62E+03**
Arsenic	7440382	–	1.09E-02	–	–	–	–	–	5.33E-03	1.14E-02	**2.76E-02**
Benzene	71432	–	–	–	2.29E+00	2.32E-03	–	1.62E+00	–	–	**3.91E+00**
Benzo[b]fluoranthene	205992	–	–	–	8.58E-04	–	–	–	–	–	**8.58E-04**
Benzo[e]pyrene	192972	–	–	–	2.15E-03	–	–	–	–	–	**2.15E-03**
Benzo[g,h,i]perylene	191242	–	–	–	2.14E-03	–	–	–	–	–	**2.14E-03**
Biphenyl	92524	–	–	–	1.10E+00	–	–	–	–	–	**1.10E+00**
Cadmium	7440439	–	3.51E-03	–	–	–	–	–	1.23E-03	3.67E-03	**8.40E-03**
Carbon tetrachloride	56235	–	–	–	1.90E-01	–	–	–	–	–	**1.90E-01**

Pollutant	CAS	Composting		Bioenergy Facility			Mobile Sources				Total Emissions
		NH_3/ Organics	Dust/PM	Drying	Engines	Flare	Diesel	Gasoline	Paved Road Dust	Unpaved Off-Road Dust	
		Annual Emissions (lb/yr)									
Chlorine	7782505	–	–	–	–	–	–	4.69E-01	–	–	**4.69E-01**
Chlorobenzene	108907	–	–	–	1.57E-01	5.36E-04	–	–	–	–	**1.58E-01**
Chloroform	67663	–	–	–	1.48E-01	–	–	–	–	–	**1.48E-01**
Chromium, hexavalent	18540299	–	4.30E-03	–	–	–	–	–	3.48E-04	4.49E-03	**9.13E-03**
Chrysene	218019	–	–	–	3.58E-03	–	–	–	–	–	**3.58E-03**
Cobalt	7440484	–	1.54E-02	–	–	–	–	–	9.43E-03	1.61E-02	**4.10E-02**
Copper	7440508	–	1.21E-01	–	–	–	–	3.40E-03	6.07E-02	1.26E-01	**3.12E-01**
DPM	9901	–	–	–	–	–	5.11E+01	–	–	–	**5.11E+01**
Ethyl benzene	100414	–	–	–	2.06E-01	4.55E-02	–	6.62E-01	–	–	**9.13E-01**
Ethylene dibromide {EDB}	106934	–	–	–	2.29E-01	–	–	–	–	–	**2.29E-01**
Ethylene dichloride {EDC}	107062	–	–	–	1.22E-01	–	–	–	–	–	**1.22E-01**
Fluoranthene	206440	–	–	–	5.74E-03	–	–	–	–	–	**5.74E-03**
Fluorene	86737	–	–	–	2.93E-02	–	–	–	–	–	**2.93E-02**
Formaldehyde	50000	–	–	8.46E+02	2.74E+02	2.54E+00	–	1.04E+00	–	–	**1.12E+03**
Hexane	110543	–	–	–	5.74E+00	–	–	9.71E-01	–	–	**6.71E+00**
Hydrogen Sulfide	7783064	–	–	–	–	2.04E+00	–	–	–	–	**2.04E+00**
Lead	7439921	–	3.51E-01	–	–	–	–	–	5.08E-02	3.67E-01	**7.68E-01**
Manganese	7439965	–	7.71E-01	–	–	–	–	3.40E-03	3.28E-01	8.07E-01	**1.91E+00**
Mercury	7439976	–	1.75E-03	–	–	–	–	–	4.92E-03	1.74E-01	**1.81E-01**
Methanol	67561	7.53E+03	–	4.86E+02	1.29E+01	–	–	2.50E-01	–	–	**7.92E+03**
Methyl Chloroform	71556	–	–	–	–	7.30E-03	–	–	–	–	**7.30E-03**

Pollutant	CAS	Composting		Bioenergy Facility			Mobile Sources				Total Emissions
		NH_3/ Organics	Dust/PM	Drying	Engines	Flare	Diesel	Gasoline	Paved Road Dust	Unpaved Off-Road Dust	
		Annual Emissions (lb/yr)									
Methyl ethyl ketone {2-Butanone}	78933	–	–	–	–	–	–	1.22E-02	–	–	**1.22E-02**
Methyl tert-butyl ether	1634044	–	–	–	–	–	–	1.19E+00	–	–	**1.19E+00**
Methylene Chloride	75092	–	–	–	1.04E-01	1.51E-01	–	–	–	–	**2.55E-01**
m-Xylene	108383	–	–	–	–	–	–	2.24E+00	–	–	**2.24E+00**
Naphthalene	91203	2.94E+02	–	–	3.86E-01	–	–	3.04E-02	–	–	**2.90E+02**
Nickel	7440020	–	1.67E-01	–	–	–	–	3.40E-03	3.69E-03	1.83E-03	**1.75E-01**
o-Xylene	95476	–	–	–	–	–	–	7.77E-01	–	–	**7.77E-01**
Perchloroethylene	127184	–	–	–	–	4.23E-03	–	–	–	–	**4.23E-03**
Phenanthrene	85018	–	–	–	5.39E-02	–	–	–	–	–	**5.39E-02**
Phenol	108952	–	–	–	1.24E-01	–	–	–	–	–	**1.24E-01**
Propene	115071	1.30E+02	–	–	–	–	–	–	–	–	**1.28E+02**
Pyrene	129000	–	–	–	7.03E-03	–	–	–	–	–	**7.03E-03**
Selenium	7782492	–	1.75E-03	–	–	–	–	–	8.20E-04	1.83E-03	**4.41E-03**
Styrene	100425	–	–	–	1.22E-01	–	–	7.29E-02	–	–	**1.95E-01**
Toluene	108883	–	–	–	2.11E+00	1.67E-02	–	3.61E+00	–	–	**5.74E+00**
Vanadium (fume or dust)	7440622	–	–	–	–	–	–	–	2.91E-02	–	**2.91E-02**
Vinyl Chloride	75014	–	–	–	7.72E-02	2.30E-03	–	–	–	–	**7.95E-02**
Vinylidene Chloride	75354	–	–	–	–	5.36E-04	–	–	–	–	**5.36E-04**
Xylenes	1330207	–	–	–	9.53E-01	9.70E-02	–	–	–	–	**1.05E+00**
Total TACs (lb/yr)											**1.50E+04**

3.0 AIR QUALITY IMPACT ANALYSIS

CEQA requires that the environmental impacts of a proposed project be identified and assessed. If these impacts are found to be significant, the impacts must be mitigated to the extent feasible. The San Joaquin Valley Air Pollution Control District (SJVAPCD) has developed CEQA thresholds for determination of significance. Based on these significance thresholds, various air quality modeling analyses were conducted to evaluate the significance of project-related impacts. The air quality impact analyses discussed in this section include criteria pollutant modeling with respect to the national ambient air quality standards (NAAQS) and California ambient air quality standards (CAAQS) and a health risk evaluation.

3.1 Ambient Air Quality Analysis

If project criteria pollutant emissions exceed the mass emission significance thresholds in the SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) and policy APR-2030, then modeling is required to demonstrate compliance with the NAAQS and CAAQS for five primary criteria pollutants, i.e., nitrogen dioxide (NO_2), CO, sulfur dioxide (SO_2), PM_{10}, and fine particulate matter ($PM_{2.5}$). Ozone (O_3) and VOC modeling are not required for individual projects.

As shown in Table 2-3, Project-related CO emissions from permitted activities for operations exceed the daily SJVAPCD CEQA significance threshold of 100 pounds per day. Since the emissions exceed this threshold, an ambient air quality analysis (AAQA) is required for the proposed Project operations for all five criteria pollutants.

The purpose of the AAQA is to evaluate whether or not criteria pollutant emissions resulting from the proposed Project will cause or contribute significantly to a violation of the CAAQS or NAAQS. AERMOD was used to simulate the atmospheric transport and dispersion of airborne pollutants and to quantify the maximum expected ground-level concentrations (GLCs) from Project emissions. The air quality modeling methodology described in this section is based on SJVAPCD policies APR-1925 (SJVAPCD 2019), APR-2030 (SJVAPCD 2018a), and Guidance for Air Dispersion Modeling (SJVAPCD 2006).

The AAQA follows the SJVAPCD APR-1925 Level 2 approach for all pollutants, where each pollutant is modeled separately using maximum emission rates for the appropriate averaging time. Step 1 combines the modeled concentration with a conservative background concentration for comparison to the AAQS. If the Project plus background concentration is less than the AAQS, then Project emissions have a less than significant impact. This Step 1 technique was used to assess the impacts of the proposed Project's NO_2, CO, and SO_2 emissions. NO_2 modeling for the 1-hour and annual NAAQS followed the United States Environmental Protection Agency (U.S. EPA) Tier 1 technique outlined in the EPA NO_2 clarification memo (EPA 2014), which conservatively assumes full conversion of nitric oxide (NO) to NO_2.

Per SJVAPCD guidance, for pollutants where the background concentration is already greater than the standard, Step 2 compares the maximum modeled concentration to the corresponding Significant Impact Level (SIL). If the Project concentration is less than the SIL, then Project emissions do not contribute significantly to a violation of the CAAQS or NAAQS. SIL modeling was conducted for PM_{10} and $PM_{2.5}$ since the background concentrations of these pollutants are greater than the AAQS, as described in Section 3.1.1.

3.1.1 Background Air Quality

Dispersion modeling to evaluate compliance with an AAQS requires the use of measured air pollutant concentrations to account for the contributions of regional emissions, i.e., emissions sources not explicitly included in the model simulations.

Table 3-1 presents the maximum observed ambient background data for each pollutant and averaging time at the nearest representative monitoring station for 2017-2019, the most recent data available. The tabulated values were used to represent background levels for the indicated pollutants and averaging times in the AAQA to evaluate compliance with the CAAQS or NAAQS. The monitoring data indicate that the air quality in the Project area complies with all federal NAAQS and state CAAQS for NO_2, CO, and SO_2. $PM_{2.5}$ and PM_{10} exceed both the CAAQS and NAAQS.

3.1.2 Air Dispersion Model

Air dispersion models calculate the atmospheric transport and fate of pollutants from the emissions source. The models calculate the concentrations of selected pollutants at specific downwind ground-level points, such as residential or off-site workplace receptors. The transformation (fate) of an airborne pollutant, its movement with the prevailing winds (transport), its crosswind and vertical movement due to atmospheric turbulence (dispersion), and its removal due to dry and wet deposition are influenced by the pollutant's physical and chemical properties and meteorological and environmental conditions. Factors such as distance from the source to the receptor, meteorological conditions, intervening land use and terrain, pollutant release characteristics, and background pollutant concentrations affect the predicted air concentration of an air pollutant. Air dispersion models take all of these factors into consideration when calculating downwind ground-level pollutant concentrations.

The air dispersion model used was AERMOD version 21112, with the Lakes Environmental Software implementation/user interface, AERMOD View™ Version 10.0.1. For the AAQA, actual emissions for each criteria pollutant and source are used in AERMOD.

3.1.3 Modeling Options

Regulatory defaults, the "Rural" modeling option, and "Elevated" terrain were used for the analyses. Rural dispersion parameters are conservative because the atmosphere is less turbulent in rural areas, which results in less mixing and generally higher ambient concentrations downwind from a source.

3.1.4 Meteorological Data

AERMOD-ready pre-processed meteorological data files were downloaded directly from the SJVAPCD website for the Visalia Municipal Airport station. This station is the nearest National Weather Service (NWS) meteorological station and most representative of the conditions at the facility. Figure 3-1 presents the wind rose showing the meteorological data for the years 2007-2010. Each petal of the rose represents the frequency and relative strength with which a wind blows from that direction.

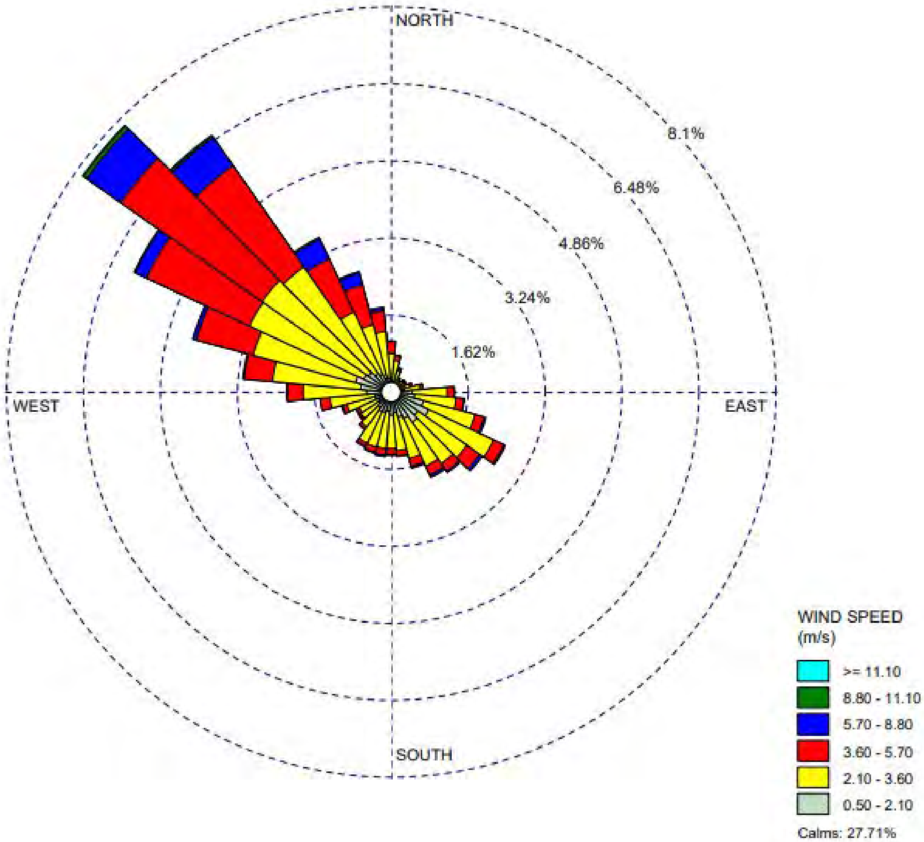
Table 3-1: Background Concentrations

Pollutant	Averaging Time	Standard	Monitoring Station	Ambient Background Data (µg/m³) 2017	2018	2019	Highest Value	AAQS	Exceeds Standard?	Background Concentration Notes
NO_2	1-Hour	Federal	Visalia-N Church Street	106.4	101.2	105.2	104.3	188	No	The design value (=3-year average of 98th percentile of 1-hour daily max).
		California	Visalia-N Church Street	111.0	132.0	133.9	133.9	339	No	Highest of most recent 3 years.
	Annual	Federal	Visalia-N Church Street	21.0	21.0	19.1	21.0	100	No	Highest of most recent 3 years.
		California	Visalia-N Church Street	19.1	19.1	19.1	19.1	57	No	Highest of most recent 3 years.
CO	1-Hour	Federal	Fresno – Garland	2,725.5	2,555.4	2,315.5	2,725.5	40,000	No	Highest of most recent 3 years.
		California	Fresno – Garland	2,725.5	2,555.4	2,315.5	2,725.5	23,000	No	Highest of most recent 3 years.
	8-Hour	Federal	Fresno – Garland	2,213.0	2,329.5	1,747.1	2,329.5	10,000	No	Highest of most recent 3 years.
		California	Fresno – Garland	2,213.0	2,329.5	1,747.1	2,329.5	10,000	No	Highest of most recent 3 years.
SO_2	1-Hour	Federal	Fresno – Garland	13.0	14.6	14.6	14.1	196	No	The design value (=3-year average of 99th percentile of 1-hour daily max).
		California	Fresno – Garland	20.5	19.2	23.7	23.7	655	No	Highest of most recent 3 years.
	3-Hour	Federal secondary	Fresno – Garland	12.0	13.6	12.8	13.6	1,300	No	Highest of most recent 3 years.
		California	Fresno – Garland	–	–	–	–	No Standard	NA	No standard exists.

Pollutant	Averaging Time	Standard	Monitoring Station	Ambient Background Data (µg/m^3)				AAQS	Exceeds Standard?	Background Concentration Notes
				2017	2018	2019	Highest Value			
	24-Hour	Federal	Fresno – Garland	–	–	–	–	No Standard	NA	Rescinded.
		California	Fresno – Garland	12.0	13.6	12.8	13.6	105	No	Highest of most recent 3 years. Uses 3-hour since no 24-hour data.
PM_{10}	24-Hour	Federal	Visalia-N Church Street	144.8	153.4	411.1	411.1	150	Yes	Highest of most recent 3 years.
		California	Visalia-N Church Street	145.7	159.6	418.5	418.5	50	Yes	Highest of most recent 3 years.
	Annual	Federal	–	–	–	–	–	–	–	No standard exists.
		California	Visalia-N Church Street	46.9	52.0	46.3	52.0	20	Yes	Highest of most recent 3 years.
$PM_{2.5}$	24-Hour	Federal	Visalia-N Church Street	86.1	86.8	47.2	86.8	35	Yes	Highest of most recent 3 years.
		California	–	–	–	–	–	–	–	No standard exists.
	Annual	Federal	Visalia-N Church Street	16.2	17.3	12.9	17.3	12	Yes	Highest of most recent 3 years.
		California	Visalia-N Church Street	16.8	17.4	12.3	17.4	12	Yes	Highest of most recent 3 years.

Note: NO_2 and PM_{10} data from CARB iADAM Air Quality Data Statistics (CARB 2021). CO and SO_2 data from EPA AirData (EPA 2021).

Figure 3-1: Visalia Municipal Airport Wind Rose 2007-2010



3.1.5 Elevation Data

Digital elevation data were imported into AERMOD, and elevations were assigned to receptors, buildings, and emissions sources as necessary. Digital elevation data were obtained through the AERMOD View™ WebGIS import feature in the United States Geological Survey's (USGS) National Elevation Dataset (NED) and had a spatial resolution of approximately 30 meters (1 arcsecond). All geographical coordinates referenced in this section and the appendices are in the Universal Transverse Mercator (UTM) coordinate system with the North American Datum (NAD83), Zone 11.

3.1.6 Receptors

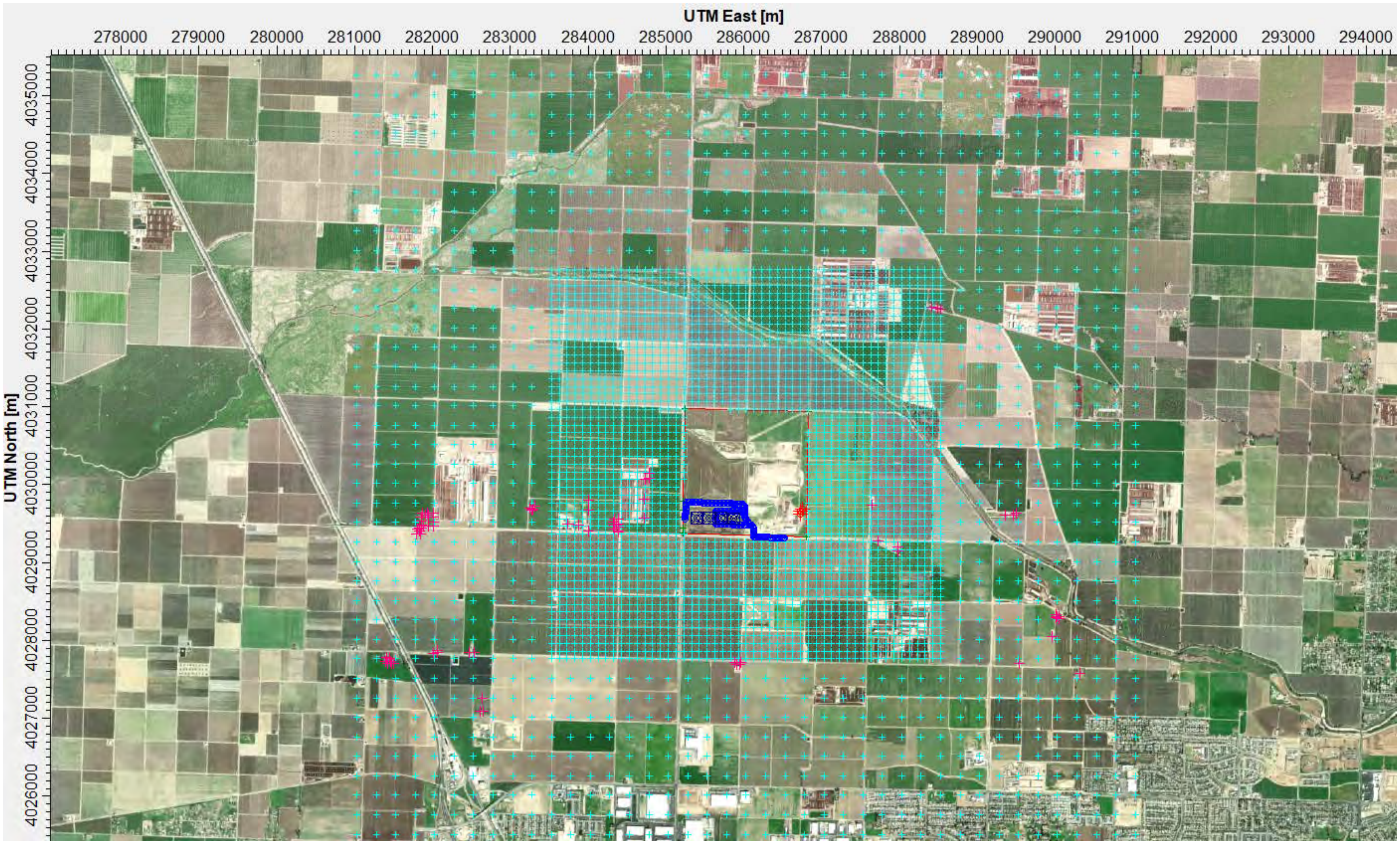
Modeling results were obtained at various locations around the facility. These receptor locations were identified as the facility boundary ("fenceline"), a grid network of receptors to establish the potential impact area, and discrete receptors that were positioned at specific locations of interest.

The facility boundary encompasses the existing Visalia Landfill property, including the proposed Project bioenergy and compost areas. Per SJVAPCD guidance, a cascading grid of receptors was used to evaluate impacts at offsite locations. These gridded receptors were located as follows:

- Fenceline receptors were placed every 10 meters;
- 100-meter spacing from the fenceline out to 2,500 meters; and
- 250-meter spacing from 2,500 to 5,000 meters.

Additional discrete Cartesian receptors were used to evaluate the locations of the closest residential receptor, sensitive receptor, and off-site workplace. The nearest resident is a farmhouse located approximately 0.5 miles west of the Project. The nearest schools are located to the south in Visalia. The closest workplace where workers regularly stay is located in the Rob Van Grouw Dairy Farm, approximately 0.3 miles to the west. Figure 3-2 shows the receptor grid in light blue and discrete receptors in pink. The property line is identified in red.

Figure 3-2: Fenceline and Receptor Locations



Green Cross: Fenceline Receptor

Blue Cross: Uniform Receptor Grid

Pink Cross: Discrete Receptor (Residence, Sensitive, Worker)

3.1.7 On-Site Buildings

There will not be any significant structures on-site close to the emissions sources. Hence, no on-site buildings were included in the modeling for incorporation with the Building Profile Input Program for PRIME (BPIPPRM).

3.1.8 Analysis Scenario and Emission Rates

The maximum buildout scenario was evaluated for air quality impacts; this approach ensures that the maximum air quality impacts have been identified. Emissions are outlined in Section 2 and contained in the electronic modeling files.

The NO_2, CO, and SO_2 modeling was conducted using the highest 1-hour emission rate for all averaging times. This approach is conservative for longer averaging times, especially the annual average. The PM_{10} and $PM_{2.5}$ modeling used the highest 24-hour emission rate for all averaging times.

3.1.9 Emissions Sources and Release Parameters

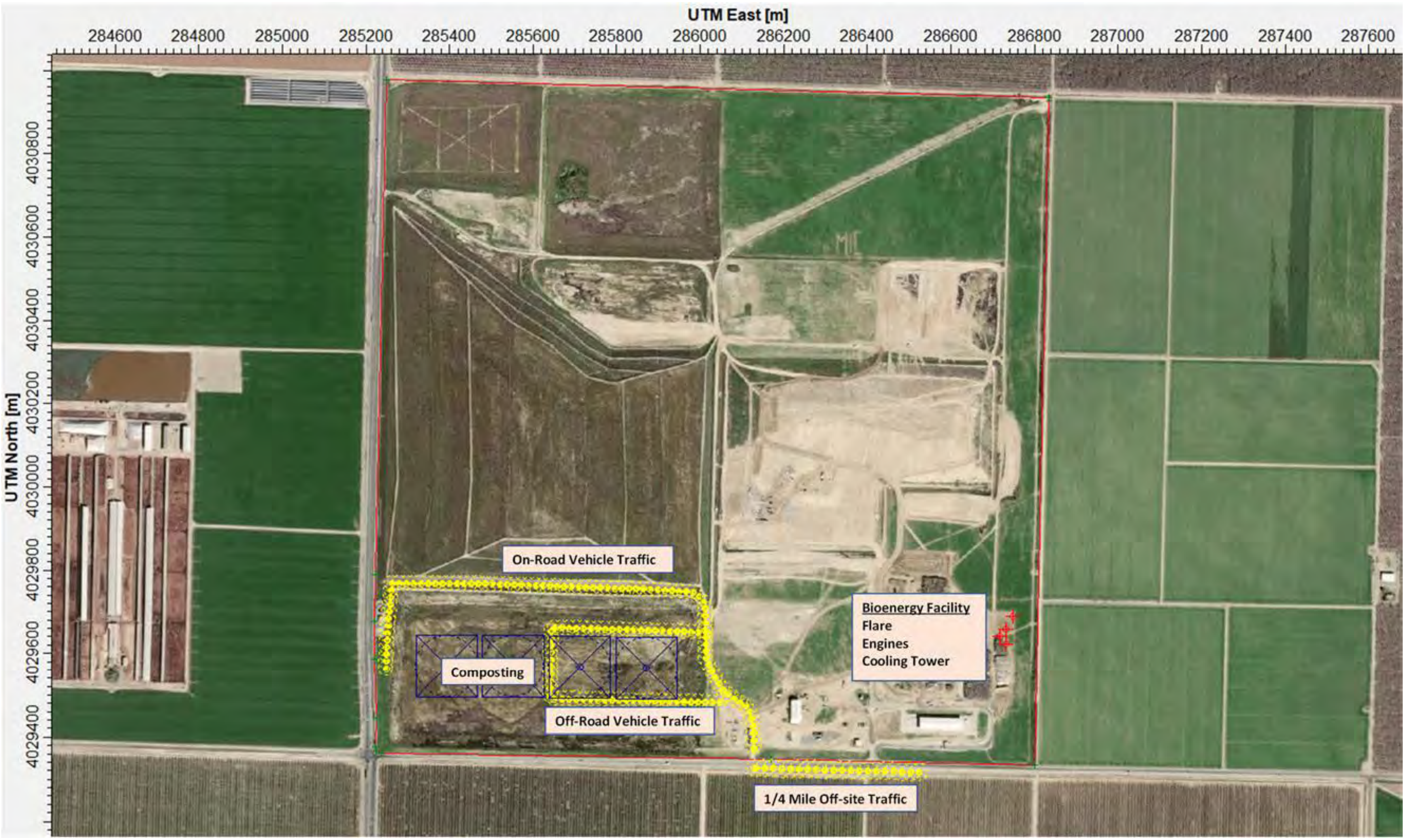
The exhaust stack from the stationary sources, including the cooling tower, engines, and flare of the bioenergy facility, were modeled as point sources, shown in red in Figure 3-3. Numerous line-volume sources were used to represent sources/activities such as vehicle exhaust and road dust both on-site and near-site, and are shown in yellow in Figure 3-3. Composting activities were modeled as four volume sources, as shown by the blue squares in Figure 3-3. The release parameters utilized for each source are provided in Attachment 1 and were derived from SJVAPCD guidance.

3.1.10 AAQA Results

Table 3-2 presents the maximum model-predicted concentrations from the proposed Project emissions, maximum background concentrations, and sum of these concentrations in comparison to the NAAQS and CAAQS. The AAQA modeling results presented in Table 3-2 demonstrate that the Project would not cause an exceedance of the NO_2, SO_2, or CO NAAQS or CAAQS.

Since background PM_{10} and $PM_{2.5}$ concentrations are greater than the 24-hour and annual NAAQS and CAAQS, the modeled concentrations are compared to the SILs. Table 3-3 shows that the model-predicted PM_{10} and $PM_{2.5}$ concentrations from all on-site and near-site exhaust and fugitive sources are less than the 24-hour and annual SILs. Therefore, the Project PM_{10} and $PM_{2.5}$ emissions do not contribute significantly to a violation of the CAAQS or NAAQS.

Figure 3-3: Operational Source and Fenceline Locations



Red Line: Facility Boundary

Red Cross: Emission Point Source

Blue Circle Inside Square: Emission Volume Source

Yellow: Emission Line Volume Source

Table 3-2: AAQA Modeling Results for Project

Pollutant	Averaging Time	Federal or State Standard	Modeled Concentration (µg/m³)	Background Concentration (µg/m³)	Modeled + Background Concentration (µg/m³)	AAQS (µg/m³)	Exceed Standard?
NO_2	1-Hour	Federal	32.4	104.3	136.6	188	No
		California	34.4	133.9	168.3	339	No
	Annual	Federal	3.9	21.0	24.9	100	No
		California	3.9	19.1	23.0	57	No
CO	1-Hour	Federal	520.7	2,725.5	3,246	40,000	No
		California	520.7	2,725.5	3,246	23,000	No
	8-Hour	Federal	394.8	2,329.5	2,724	10,000	No
		California	394.8	2,329.5	2,724	10,000	No
SO_2	1-Hour	Federal	0.9	14.1	15.0	196	No
		California	0.9	23.7	24.6	655	No
	3-Hour	Federal Secondary	0.8	13.6	14.4	1,300	No
	24-Hour	California	0.4	13.6	13.9	105	No
PM_{10}	24-Hour	Federal	See SIL Analysis	411.1	-	150	Background Over the CAAQS and/or NAAQS, Go To Step 2 SIL Analysis
		California	See SIL Analysis	418.5	-	50	
	Annual	California	See SIL Analysis	52.0	-	20	
$PM_{2.5}$	24-Hour	Federal	See SIL Analysis	86.8	-	35	
	Annual	Federal	See SIL Analysis	17.3	-	12	
		California	See SIL Analysis	17.4	-	12	

Table 3-3: PM_{10} and $PM_{2.5}$ SIL Modeling Results for Project

Pollutant	Averaging Time	Modeled Concentration ($\mu g/m^3$)	SIL ($\mu g/m^3$)	Exceed SIL?
PM_{10}	24-Hour	0.47	5.0	No
	Annual	0.13	1.0	No
$PM_{2.5}$	24-Hour	0.47	1.2	No
	Annual	0.13	0.2	No
Fugitive PM_{10}	24-Hour	6.55	10.4	No
	Annual	1.12	2.1	No
Fugitive $PM_{2.5}$	24-Hour	1.03	2.5	No
	Annual	0.19	0.6	No

3.2 Health Risk Assessment

The SJVAPCD's risk management objectives for CEQA are to minimize health risks from new and modified sources of air pollution and to not add significantly to the existing community risk level. The SJVAPCD requires the examination of the TAC emissions from the Project to determine the potential health risk impacts. A two-step process can be followed, where initially a screening risk prioritization is conducted. If the potential for high health risks is found, then a health risk assessment (HRA) may be required. An HRA estimates the potential acute, chronic, and carcinogenic health risks from the Project.

This health risk approach is based on the California Office of Environmental Health Hazard Assessment (OEHHA) hotspot guidance document (OEHHA 2015), the California Air Pollution Control Officers Association (CAPCOA) facility prioritization guidelines (CAPCOA 2016), and SJVAPCD policy APR-1906 (SJVAPCD 2018b).

The CAPCOA prioritization guidelines outline a technique for calculating a prioritization score that helps air districts identify priority facilities for risk assessment, which involves consideration of potency, toxicity, quantity of emissions, and proximity to sensitive receptors such as hospitals, daycare centers, schools, worksites, and residences. If the prioritization score exceeds the thresholds, a refined HRA is recommended to determine if the Project's potential health risks are significant.

To assess the potential health risk from the Project for operations and construction, prioritization scores were calculated at the nearest residential and business receptors. Since the prioritization scores were intermediate, a refined HRA is not necessary for construction and operations to determine that the proposed Project's TAC emissions will have a less than significant health risk.

3.2.1 Risk Prioritization Score Thresholds

The CAPCOA prioritization score significance criteria are listed below.

<u>Low Score:</u> Projects having a total score (TS) less than 1 are low risk and are not likely to have an adverse health risk.

<u>Intermediate Score:</u> Projects having a TS at least 1 and less than 10 need to evaluate additional factors to determine if the project's TAC emissions will have a less than significant health risk. Pertinent factors include:

- Population density near the facility;
- Proximity of sensitive receptors to the facility;
- Receptor proximity less than 50 meters;
- Elevated receptors/complex terrain;
- Frequency of nuisance violations; and
- Presence of non-stack (fugitive) emissions.

High Score: Projects having a TS equal to or over 10 may have high risk. A refined HRA may be necessary to demonstrate that the project's TAC emissions will have a less than significant health risk.

3.2.2 Calculation of Risk Prioritization Score

The prioritization scores were estimated based on the Project TAC emissions for construction and operations. The emissions used in the prioritization score calculations represent the maximum worst-case emissions at full buildout. Since cancer risk is typically calculated based on a lifetime exposure (70 years), the cancer prioritization score is likely significantly overestimated. The maximum hourly emission rates were used for the chronic and acute scores.

The prioritization scores were estimated at the nearest sensitive receptor, which is a residence located approximately 0.5 miles (0.8 kilometers) west of the Project. The distance was measured from the closest edge of the Project (i.e., the western edge of the compost area) to the closest portion of the residence's property. To ensure that all potential exposure from the Project was examined, the prioritization score was also estimated at the nearest business receptor, Rob Van Grouw Dairy Farm, located approximately 0.3 miles (0.5 kilometers) west of the Project.

The prioritization scores at the nearest resident and worker receptors are presented in Table 3-4 for construction and Table 3-5 for operations. The prioritization scores suggest that the facility falls into the intermediate priority category ($1 < PS \leq 10$). Based on the prioritization score results, the use of maximum worst-case emissions, and low population density near the facility, it is reasonable to conclude that construction and operation of the Project will not expose sensitive receptors to substantial pollutant concentrations or health risks.

Detailed TAC emissions estimates are provided in the appendices of the CEQA technical report (Appendix C for the mobile sources and Appendices D and E for the stationary sources). The prioritization score calculations are presented in Attachment 2 of this report.

Table 3-4: Prioritization Scores at the Nearest Receptors for Construction

Receptor	Receptor Distance = R (meters)	Acute	Chronic	Cancer
Resident/Business	500<=R<1,000	--	0.0048	3.23

Note: No Acute risk associated with DPM. Resident and Business within the same receptor proximity.

Table 3-5: Prioritization Scores at the Nearest Receptors for Operations

Receptor	Distance to Receptor= R (meters)	Acute	Chronic	Cancer
Resident/Business	500<=R<1,000	0.76	0.062	2.97

Note: Resident and Business within the same receptor proximity.

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ATTACHMENT 1 – MODEL INPUTS

Yorke ENGINEERING, LLC www.YorkeEngr.com

Tulare CEQA
Stack Parameters

Bioenergy Facility Point Sources

Source	Description	Stack height (m)	Stack diameter (m)	Exit velocity (m/s)	Stack temp (K)	Stack height (ft)	Stack diameter (ft)	Exhaust Flow Rate (acfm)	Stack temp (F)	Notes
FLARE	19 MMBTU/hr Flare	12.19	0.91	38.4	1033.2	40	3.0	53,405	1400	
ENGINE1	1,572 bhp ICE	12.19	0.23	36.7	773.2	40	0.8	3,188	932	
ENGINE2	1,572 bhp ICE	12.19	0.23	36.7	773.2	40	0.8	3,188	932	
CT	Cooling Tower	4.57	1.52	10.0	302.6	15	5.0	38,652	85	

Cooling tower release parameters estimated based on delta cooling tower documentation.

Composting Volume Sources

Source ID	Description	Release Height (m)	Initial Sigma Y (m)	Initial Sigma Z (m)	Length of Side (m)	Notes
COMP1	Composting Operation	3.048	34.240	1.418	147.23	
COMP2	Composting Operation	3.048	34.240	1.418	147.23	
COMP3	Composting Operation	3.048	34.240	1.418	147.23	
COMP4	Composting Operation	3.048	34.240	1.418	147.23	

Composting split into four volume sources to adequately cover the composting area.
Composting source elevation at 20 ft below grade.

Yorke ENGINEERING, LLC www.YorkeEngr.com

Tulare CEQA
Mobile Source Parameters

Onsite Vehicle Model Inputs

Source	Description
ONROAD	Feedstock Delivery - Paved Road Onsite
ONROADF	Feedstock Delivery - Paved Road Onsite - Fugitive Dust
OFFROAD	Off Road acting as Unpaved
OFFROADF	Off Road acting as Unpaved (Dust from Active Compost Surfaces) - Fugitive Dust

The District recommends the following for modeling vehicles

	feet	AERMOD View input (m)	
1. Separate volume sources (separated 2W surface based)			
2. Top of Plume Height = 1.0 x VH	13.5	4.11	PH
3. Volume Source Release Height = 0.5 x Top of Plume Height	6.75	2.06	release ht
VW = vehicle width	8.5	2.59	
4. Width of Plume = VW or lane width (Each lane should be modeled separately.)	28.2	8.59	PW

From EPA - Width of Plume = VW + 6m for single lane roadways / Road Width + 6m for two lane roadways

5. Initial Sigma Z - Top of Plume Height/2.15	6.28	1.91	calculated in AERMOD
6. Initial Sigma Y - Width of Plume/2.15	13.11	4.00	calculated in AERMOD

7. Emissions input as g/s

Offsite Vehicle Model Inputs

Source	Description
OFFSITE	Truck Traffic: 1/4 mile Off-site
OFFSITEF	Truck Traffic: 1/4 mile Off-site: Fugitives

The District recommends the following for modeling vehicles

	feet	AERMOD View input (m)	
1. Separate volume sources (separated 2W surface based)			
2. Top of Plume Height = 1.0 x VH	13.5	4.11	PH
3. Volume Source Release Height = 0.5 x Top of Plume Height	6.75	2.06	release ht
road width	14	4.27	
4. Width of Plume = VW or lane width (Each lane should be modeled separately.)	33.7	10.27	PW

From EPA - Width of Plume = VW + 6m for single lane roadways / Road Width + 6m for two lane roadways

5. Initial Sigma Z - Top of Plume Height/2.15	6.28	1.91	calculated in AERMOD
6. Initial Sigma Y - Width of Plume/2.15	15.67	4.78	calculated in AERMOD

7. Emissions input as g/s

SJVAPCD Guidance from Glenn T. Reed, Senior Air Quality Specialist, Thursday, August 22, 2013

ATTACHMENT 2 – PRIORITIZATION SCORE CALCULATIONS

Name			Prioritization Calculator				
Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.						
Author or updater	Matthew Cegielski		*Last Update*	November 2, 2020			
Facility: **ID#:** **Project #:** **Unit and Process#**							
Operating Hours hr/yr	8,760.00						

Receptor Proximity and Proximity Factors		Cancer Score	Chronic Score	Acute Score	Max Score
0< R<100	**1.000**	2.93E+02	4.35E-01	0.00E+00	2.93E+02
100≤R<250	**0.250**	7.33E+01	1.09E-01	0.00E+00	7.33E+01
250≤R<500	**0.040**	1.17E+01	1.74E-02	0.00E+00	1.17E+01
500≤R<1000	**0.011**	3.23E+00	4.78E-03	0.00E+00	3.23E+00
1000≤R<1500	**0.003**	8.80E-01	1.30E-03	0.00E+00	8.80E-01
1500≤R<2000	**0.002**	5.87E-01	8.70E-04	0.00E+00	5.87E-01
2000<R	**0.001**	2.93E-01	4.35E-04	0.00E+00	2.93E-01

Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.

Enter the unit's CAS# of the substances emitted and their amounts.

Prioritization score for each substance generated below. Totals on last row.

0							
Substance	**CAS#**	**Annual Emissions (lbs/yr)**	**Maximum Hourly (lbs/hr)**	**Average Hourly (lbs/hr)**	**Cancer**	**Chronic**	**Acute**
Diesel engine exhaust, particulate matter (Diesel PM)	**9901**	127	0.00E+00	1.45E-02	2.93E+02	4.35E-01	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Totals	**2.93E+02**	**4.35E-01**	**0.00E+00**

Name: Bioenergy Facility - Material Handling — **Prioritization Calculator**

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.				
Author or updater	Matthew Cegielski	*Last Update*	November 2, 2020		
Facility: **ID#:** **Project #:** **Unit and Process#**					
Operating Hours hr/yr	8,760.00				

Receptor Proximity and Proximity Factors		Cancer Score	Chronic Score	Acute Score	Max Score	
0< R<100	**1.000**	1.57E+00	8.71E-02	9.34E-02	1.57E+00	Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.
100≤R<250	**0.250**	3.93E-01	2.18E-02	2.33E-02	3.93E-01	
250≤R<500	**0.040**	6.29E-02	3.48E-03	3.73E-03	6.29E-02	
500≤R<1000	**0.011**	1.73E-02	9.58E-04	1.03E-03	1.73E-02	
1000≤R<1500	**0.003**	4.72E-03	2.61E-04	2.80E-04	4.72E-03	
1500≤R<2000	**0.002**	3.14E-03	1.74E-04	1.87E-04	3.14E-03	
2000<R	**0.001**	1.57E-03	8.71E-05	9.34E-05	1.57E-03	

0	Enter the unit's CAS# of the substances emitted and their amounts.				Prioritization score for each substance generated below. Totals on last row.		
Substance	**CAS#**	**Annual Emissions (lbs/yr)**	**Maximum Hourly (lbs/hr)**	**Average Hourly (lbs/hr)**	**Cancer**	**Chronic**	**Acute**
Arsenic	**7440382**	2.58E-03	7.59E-07	2.94E-07	6.55E-02	2.94E-03	5.69E-03
Cadmium	**7440439**	8.31E-04	2.45E-07	9.49E-08	2.69E-02	7.12E-04	0.00E+00
Chromium, hexavalent	**18540299**	1.02E-03	3.00E-07	1.16E-07	1.18E+00	8.72E-05	0.00E+00
Cobalt	**7440484**	3.66E-03	1.08E-06	4.18E-07	2.17E-01	0.00E+00	0.00E+00
Copper	**7440508**	2.87E-02	8.45E-06	3.27E-06	0.00E+00	0.00E+00	1.27E-04
Lead	**7439921**	8.31E-02	2.45E-05	9.49E-06	7.68E-03	0.00E+00	0.00E+00
Manganese	**7439965**	1.83E-01	5.39E-05	2.09E-05	0.00E+00	3.48E-02	0.00E+00
Mercury	**7439976**	4.16E-04	1.22E-07	4.74E-08	0.00E+00	2.37E-04	3.06E-04
Nickel	**7440020**	3.95E-02	1.16E-05	4.51E-06	7.91E-02	4.83E-02	8.72E-02
Selenium	**7782492**	4.16E-04	1.22E-07	4.74E-08	0.00E+00	3.56E-07	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Totals	**1.57E+00**	**8.71E-02**	**9.34E-02**

Name: Bioenergy Facility - Dryer **Prioritization Calculator**

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.						
Author or updater	Matthew Cegielski		*Last Update*	November 2, 2020			
Facility: **ID#:** **Project #:** **Unit and Process#**							
Operating Hours hr/yr	8,760.00						

Receptor Proximity and Proximity Factors		Cancer Score	Chronic Score	Acute Score	Max Score
0< R<100	**1.000**	3.91E+01	1.61E+00	6.29E+01	6.29E+01
100≤R<250	**0.250**	9.77E+00	4.03E-01	1.57E+01	1.57E+01
250≤R<500	**0.040**	1.56E+00	6.45E-02	2.52E+00	2.52E+00
500≤R<1000	**0.011**	4.30E-01	1.77E-02	6.92E-01	6.92E-01
1000≤R<1500	**0.003**	1.17E-01	4.84E-03	1.89E-01	1.89E-01
1500≤R<2000	**0.002**	7.82E-02	3.22E-03	1.26E-01	1.26E-01
2000<R	**0.001**	3.91E-02	1.61E-03	6.29E-02	6.29E-02

Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.

Enter the unit's CAS# of the substances emitted and their amounts.

Prioritzation score for each substance generated below. Totals on last row.

0

Substance	CAS#	Annual Emissions (lbs/yr)	Maximum Hourly (lbs/hr)	Average Hourly (lbs/hr)	Cancer	Chronic	Acute
Formaldehyde	**50000**	846.00	2.30	9.66E-02	3.91E+01	1.61E+00	6.28E+01
Methanol	**67561**	486.00	1.32	5.55E-02	0.00E+00	2.08E-03	7.09E-02
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Totals	**3.91E+01**	**1.61E+00**	**6.29E+01**

Name: Bioenergy Facility - ICEs **Prioritization Calculator**

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.							
Author or updater	Matthew Cegielski		*Last Update*	November 2, 2020				
Facility: **ID#:** **Project #:** **Unit and Process#**								
Operating Hours hr/yr	8,760.00							

Receptor Proximity and Proximity Factors		Cancer Score	Chronic Score	Acute Score	Max Score
0< R<100	**1.000**	1.67E+01	1.85E+00	2.70E+00	1.67E+01
100≤R<250	**0.250**	4.17E+00	4.64E-01	6.75E-01	4.17E+00
250≤R<500	**0.040**	6.68E-01	7.42E-02	1.08E-01	6.68E-01
500≤R<1000	**0.011**	1.84E-01	2.04E-02	2.97E-02	1.84E-01
1000≤R<1500	**0.003**	5.01E-02	5.56E-03	8.10E-03	5.01E-02
1500≤R<2000	**0.002**	3.34E-02	3.71E-03	5.40E-03	3.34E-02
2000<R	**0.001**	1.67E-02	1.85E-03	2.70E-03	1.67E-02

Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.

0

Enter the unit's CAS# of the substances emitted and their amounts.

Prioritzation score for each substance generated below. Totals on last row.

Substance	CAS#	Annual Emissions (lbs/yr)	Maximum Hourly (lbs/hr)	Average Hourly (lbs/hr)	Cancer	Chronic	Acute
1,1,2,2-Tetrachloroethane	79345	2.07E-01	2.36E-05	2.36E-05	9.25E-02	0.00E+00	0.00E+00
1,1,2-Trichloroethane	79005	1.65E-01	1.88E-05	1.88E-05	2.03E-02	0.00E+00	0.00E+00
1,1-Dichloroethane	75343	1.22E-01	1.39E-05	1.39E-05	1.50E-03	0.00E+00	0.00E+00
1,2,4-Trimethylbenze	95636	7.40E-02	8.44E-06	8.44E-06	0.00E+00	0.00E+00	0.00E+00
1,3-Butadiene	106990	1.38E+00	1.58E-04	1.58E-04	1.81E+00	1.18E-02	3.59E-04
2,2,4-Trimethylpentane	540841	1.29E+00	1.48E-04	1.48E-04	0.00E+00	0.00E+00	0.00E+00
2-Methyl naphthalene	91576	1.72E-01	1.96E-05	1.96E-05	0.00E+00	0.00E+00	0.00E+00
Acenaphthene	83329	6.47E-03	7.39E-07	7.39E-07	0.00E+00	0.00E+00	0.00E+00
Acenaphthylene	208968	2.87E-02	3.27E-06	3.27E-06	0.00E+00	0.00E+00	0.00E+00
Acetaldehyde	75070	4.33E+01	4.95E-03	4.95E-03	9.01E-01	5.30E-03	1.58E-02
Acrolein	107028	2.65E+01	3.03E-03	3.03E-03	0.00E+00	1.30E+00	1.82E+00
Benzene	71432	2.29E+00	2.61E-04	2.61E-04	5.10E-01	1.30E-02	1.45E-02
Benzo[b]fluoranthene	205992	8.58E-04	9.80E-08	9.80E-08	7.27E-04	0.00E+00	0.00E+00
Benzo[e]pyrene	192972	2.15E-03	2.45E-07	2.45E-07	0.00E+00	0.00E+00	0.00E+00
Benzo[g,h,i]perylene	191242	2.14E-03	2.45E-07	2.45E-07	0.00E+00	0.00E+00	0.00E+00
Biphenyl	92524	1.10E+00	1.25E-04	1.25E-04	0.00E+00	0.00E+00	0.00E+00
Carbon tetrachloride	56235	1.90E-01	2.17E-05	2.17E-05	6.14E-02	8.13E-05	1.71E-05
Chlorobenzene	108907	1.57E-01	1.80E-05	1.80E-05	0.00E+00	2.70E-06	0.00E+00
Chloroform	67663	1.48E-01	1.68E-05	1.68E-05	6.02E-03	8.42E-06	1.68E-04
Chrysene	218019	3.58E-03	4.09E-07	4.09E-07	3.03E-04	0.00E+00	0.00E+00
Ethyl benzene	100414	2.06E-01	2.35E-05	2.35E-05	3.96E-03	1.76E-06	0.00E+00
Ethylene dibromide {EDB}	106934	2.29E-01	2.61E-05	2.61E-05	1.25E-01	4.89E-03	0.00E+00
Ethylene dichloride {EDC}	107062	1.22E-01	1.39E-05	1.39E-05	1.97E-02	5.23E-06	0.00E+00
Fluoranthene	206440	5.74E-03	6.55E-07	6.55E-07	0.00E+00	0.00E+00	0.00E+00
Fluorene	86737	2.93E-02	3.35E-06	3.35E-06	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	50000	2.74E+02	3.13E-02	3.13E-02	1.27E+01	5.21E-01	8.53E-01
Hexane	110543	5.74E+00	6.55E-04	6.55E-04	0.00E+00	1.40E-05	0.00E+00
Methanol	67561	1.29E+01	1.48E-03	1.48E-03	0.00E+00	5.54E-05	7.91E-05
Methylene chloride {Dichloromethane}	75092	1.04E-01	1.18E-05	1.18E-05	7.97E-04	4.43E-06	1.27E-06
Naphthalene	91203	3.86E-01	4.41E-05	4.41E-05	1.01E-01	7.34E-04	0.00E+00
PAHs, total, w/o individ. components reported [Treated as B(a)P for HRA]	1151	4.01E-02	4.58E-06	4.58E-06	3.40E-01	0.00E+00	0.00E+00
Phenanthrene	85018	5.39E-02	6.15E-06	6.15E-06	0.00E+00	0.00E+00	0.00E+00
Phenol	108952	1.24E-01	1.42E-05	1.42E-05	0.00E+00	1.06E-05	3.67E-06
Pyrene	129000	7.03E-03	8.03E-07	8.03E-07	0.00E+00	0.00E+00	0.00E+00
Styrene	100425	1.22E-01	1.39E-05	1.39E-05	0.00E+00	2.32E-06	9.95E-07
Toluene	108883	2.11E+00	2.41E-04	2.41E-04	0.00E+00	8.61E-05	7.23E-05
Vinyl chloride	75014	7.72E-02	8.81E-06	8.81E-06	4.64E-02	0.00E+00	7.34E-08
Xylene	1330207	9.53E-01	1.09E-04	1.09E-04	0.00E+00	2.33E-05	7.42E-06
				Totals	**1.67E+01**	**1.85E+00**	**2.70E+00**

Name: Bioenergy Facility - Flare **Prioritization Calculator**

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.						
Author or updater	Matthew Cegielski	*Last Update*	November 2, 2020				
Facility: **ID#:** **Project #:** **Unit and Process#**							
Operating Hours hr/yr	8,760.00						
Receptor Proximity and Proximity Factors	**Cancer Score**	**Chronic Score**	**Acute Score**	**Max Score**	Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.		
0< R<100 1.000	1.22E-01	8.35E-03	5.69E-01	5.69E-01			
100≤R<250 0.250	3.04E-02	2.09E-03	1.42E-01	1.42E-01			
250≤R<500 0.040	4.86E-03	3.34E-04	2.28E-02	2.28E-02			
500≤R<1000 0.011	1.34E-03	9.19E-05	6.26E-03	6.26E-03			
1000≤R<1500 0.003	3.65E-04	2.51E-05	1.71E-03	1.71E-03			
1500≤R<2000 0.002	2.43E-04	1.67E-05	1.14E-03	1.14E-03			
2000<R 0.001	1.22E-04	8.35E-06	5.69E-04	5.69E-04			
0	Enter the unit's CAS# of the substances emitted and their amounts.				Prioritzation score for each substance generated below. Totals on last row.		
Substance	**CAS#**	**Annual Emissions (lbs/yr)**	**Maximum Hourly (lbs/hr)**	**Average Hourly (lbs/hr)**	**Cancer**	**Chronic**	**Acute**
Ammonia	**7664417**	6.48E-03	2.59E-05	7.40E-07	0.00E+00	5.55E-07	1.21E-05
Benzene	**71432**	2.32E-03	9.27E-06	2.64E-07	5.17E-04	1.32E-05	5.15E-04
Chlorobenzene	**108907**	5.36E-04	2.15E-06	6.12E-08	0.00E+00	9.19E-09	0.00E+00
Ethyl benzene	**100414**	4.55E-02	1.82E-04	5.19E-06	8.75E-04	3.89E-07	0.00E+00
Formaldehyde	**50000**	2.54E+00	1.02E-02	2.90E-04	1.17E-01	4.84E-03	2.77E-01
Hydrogen sulfide	**7783064**	2.04E+00	8.15E-03	2.33E-04	0.00E+00	3.49E-03	2.91E-01
Methyl chloroform {1,1,1-Trichloroethane}	**71556**	7.30E-03	2.92E-05	8.33E-07	0.00E+00	1.25E-07	6.44E-07
Methylene chloride {Dichloromethane}	**75092**	1.51E-01	6.04E-04	1.72E-05	1.16E-03	6.46E-06	6.47E-05
Perchloroethylene {Tetrachloroethene}	**127184**	4.23E-03	1.69E-05	4.83E-07	1.99E-04	2.07E-06	1.27E-06
Toluene	**108883**	1.67E-02	6.68E-05	1.91E-06	0.00E+00	6.81E-07	2.00E-05
Vinyl chloride	**75014**	2.30E-03	9.20E-06	2.62E-07	1.38E-03	0.00E+00	7.66E-08
Vinylidene chloride	**75354**	5.36E-04	2.15E-06	6.12E-08	0.00E+00	1.31E-07	0.00E+00
Xylene	**1330207**	9.70E-02	3.88E-04	1.11E-05	0.00E+00	2.37E-06	2.65E-05
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Totals	**1.22E-01**	**8.35E-03**	**5.69E-01**

Name: Composting - Ammonia **Prioritization Calculator**

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.					
Author or updater	Matthew Cegielski	*Last Update*	November 2, 2020			
Facility: **ID#:** **Project #:** **Unit and Process#**						
Operating Hours hr/yr	8,760.00					

Receptor Proximity and Proximity Factors		Cancer Score	Chronic Score	Acute Score	Max Score	
0< R<100	**1.000**	0.00E+00	4.40E-01	3.21E-01	4.40E-01	Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.
100≤R<250	**0.250**	0.00E+00	1.10E-01	8.03E-02	1.10E-01	
250≤R<500	**0.040**	0.00E+00	1.76E-02	1.29E-02	1.76E-02	
500≤R<1000	**0.011**	0.00E+00	4.84E-03	3.54E-03	4.84E-03	
1000≤R<1500	**0.003**	0.00E+00	1.32E-03	9.64E-04	1.32E-03	
1500≤R<2000	**0.002**	0.00E+00	8.79E-04	6.43E-04	8.79E-04	
2000<R	**0.001**	0.00E+00	4.40E-04	3.21E-04	4.40E-04	

0	Enter the unit's CAS# of the substances emitted and their amounts.				Prioritzation score for each substance generated below. Totals on last row.		
Substance	**CAS#**	**Annual Emissions (lbs/yr)**	**Maximum Hourly (lbs/hr)**	**Average Hourly (lbs/hr)**	**Cancer**	**Chronic**	**Acute**
Ammonia	**7664417**	5,134.00	0.69	5.86E-01	0.00E+00	4.40E-01	3.21E-01
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Totals	**0.00E+00**	**4.40E-01**	**3.21E-01**

Name: Composting - Organics **Prioritization Calculator**

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.						
Author or updater	Matthew Cegielski		*Last Update*	November 2, 2020			
Facility: **ID#:** **Project #:** **Unit and Process#**							
Operating Hours hr/yr	8,760.00						
Receptor Proximity and Proximity Factors	**Cancer Score**	**Chronic Score**	**Acute Score**	**Max Score**	Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.		
0< R<100 1.000	7.88E+01	6.64E-01	1.54E+00	7.88E+01			
100≤R<250 0.250	1.97E+01	1.66E-01	3.84E-01	1.97E+01			
250≤R<500 0.040	3.15E+00	2.66E-02	6.14E-02	3.15E+00			
500≤R<1000 0.011	8.67E-01	7.31E-03	1.69E-02	8.67E-01			
1000≤R<1500 0.003	2.36E-01	1.99E-03	4.61E-03	2.36E-01			
1500≤R<2000 0.002	1.58E-01	1.33E-03	3.07E-03	1.58E-01			
2000<R 0.001	7.88E-02	6.64E-04	1.54E-03	7.88E-02			
0	Enter the unit's CAS# of the substances emitted and their amounts.				Prioritzation score for each substance generated below. Totals on last row.		
Substance	**CAS#**	**Annual Emissions (lbs/yr)**	**Maximum Hourly (lbs/hr)**	**Average Hourly (lbs/hr)**	**Cancer**	**Chronic**	**Acute**
Isopropyl alcohol	**67630**	24,912.13	3.10	2.84E+00	0.00E+00	6.09E-02	1.45E+00
Methanol	**67561**	7,530.75	0.94	8.60E-01	0.00E+00	3.22E-02	5.02E-02
Naphthalene	**91203**	294.40	0.04	3.36E-02	7.71E+01	5.60E-01	0.00E+00
Propylene	**115071**	129.54	0.02	1.48E-02	0.00E+00	7.39E-04	0.00E+00
Acetaldehyde	**75070**	82.43	0.01	9.41E-03	1.71E+00	1.01E-02	3.27E-02
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Totals	**7.88E+01**	**6.64E-01**	**1.54E+00**

Name: Composting - Dust **Prioritization Calculator**

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.						
Author or updater	Matthew Cegielski		*Last Update*	November 2, 2020			
Facility: **ID#:** **Project #:** **Unit and Process#**							
Operating Hours hr/yr	8,760.00						
Receptor Proximity and Proximity Factors	**Cancer Score**	**Chronic Score**	**Acute Score**	**Max Score**	Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.		
0< R<100 1.000	6.63E+00	3.67E-01	4.53E-01	6.63E+00			
100≤R<250 0.250	1.66E+00	9.18E-02	1.13E-01	1.66E+00			
250≤R<500 0.040	2.65E-01	1.47E-02	1.81E-02	2.65E-01			
500≤R<1000 0.011	7.29E-02	4.04E-03	4.98E-03	7.29E-02			
1000≤R<1500 0.003	1.99E-02	1.10E-03	1.36E-03	1.99E-02			
1500≤R<2000 0.002	1.33E-02	7.34E-04	9.06E-04	1.33E-02			
2000<R 0.001	6.63E-03	3.67E-04	4.53E-04	6.63E-03			
0	Enter the unit's CAS# of the substances emitted and their amounts.				Prioritzation score for each substance generated below. Totals on last row.		

Substance	**CAS#**	**Annual Emissions (lbs/yr)**	**Maximum Hourly (lbs/hr)**	**Average Hourly (lbs/hr)**	**Cancer**	**Chronic**	**Acute**
Arsenic	**7440382**	1.09E-02	3.68E-06	1.24E-06	2.76E-01	1.24E-02	2.76E-02
Cadmium	**7440439**	3.51E-03	1.19E-06	4.00E-07	1.13E-01	3.00E-03	0.00E+00
Chromium, hexavalent	**18540299**	4.30E-03	1.46E-06	4.90E-07	4.96E+00	3.68E-04	0.00E+00
Cobalt	**7440484**	1.54E-02	5.23E-06	1.76E-06	9.15E-01	0.00E+00	0.00E+00
Copper	**7440508**	1.21E-01	4.10E-05	1.38E-05	0.00E+00	0.00E+00	6.15E-04
Lead	**7439921**	3.51E-01	1.19E-04	4.00E-05	3.24E-02	0.00E+00	0.00E+00
Manganese	**7439965**	7.71E-01	2.61E-04	8.81E-05	0.00E+00	1.47E-01	0.00E+00
Mercury	**7439976**	1.75E-03	5.94E-07	2.00E-07	0.00E+00	1.00E-03	1.49E-03
Nickel	**7440020**	1.67E-01	5.64E-05	1.90E-05	3.33E-01	2.04E-01	4.23E-01
Selenium	**7782492**	1.75E-03	5.94E-07	2.00E-07	0.00E+00	1.50E-06	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Totals	**6.63E+00**	**3.67E-01**	**4.53E-01**

Name: Mobile Sources - Diesel and Gas Exhaust

Prioritization Calculator

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.		
Author or updater	Matthew Cegielski	*Last Update*	November 2, 2020
Facility:			
ID#:			
Project #:			
Unit and Process#			
Operating Hours hr/yr	8,760.00		

Receptor Proximity and Proximity Factors		Cancer Score	Chronic Score	Acute Score	Max Score
0< R<100	**1.000**	1.19E+02	2.39E-01	7.15E-02	1.19E+02
100≤R<250	**0.250**	2.97E+01	5.96E-02	1.79E-02	2.97E+01
250≤R<500	**0.040**	4.76E+00	9.54E-03	2.86E-03	4.76E+00
500≤R<1000	**0.011**	1.31E+00	2.62E-03	7.87E-04	1.31E+00
1000≤R<1500	**0.003**	3.57E-01	7.16E-04	2.15E-04	3.57E-01
1500≤R<2000	**0.002**	2.38E-01	4.77E-04	1.43E-04	2.38E-01
2000<R	**0.001**	1.19E-01	2.39E-04	7.15E-05	1.19E-01

Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.

0

Enter the unit's CAS# of the substances emitted and their amounts.

Prioritzation score for each substance generated below. Totals on last row.

Substance	CAS#	Annual Emissions (lbs/yr)	Maximum Hourly (lbs/hr)	Average Hourly (lbs/hr)	Cancer	Chronic	Acute
Diesel engine exhaust, particulate matter (Diesel PM)	**9901**	51.119	0.00E+00	5.84E-03	1.18E+02	1.75E-01	0.00E+00
1,2,4-Trimethylbenze	**95636**	6.07E-01	2.16E-04	6.93E-05	0.00E+00	0.00E+00	0.00E+00
1,3-Butadiene	**106990**	3.34E-01	1.19E-04	3.81E-05	4.37E-01	2.86E-03	2.70E-04
Acetaldehyde	**75070**	1.52E-01	5.40E-05	1.73E-05	3.15E-03	1.85E-05	1.72E-04
Acrolein	**107028**	8.51E-02	3.03E-05	9.71E-06	0.00E+00	4.16E-03	1.82E-02
Benzene	**71432**	1.62E+00	5.76E-04	1.85E-04	3.61E-01	9.24E-03	3.20E-02
Chlorine	**7782505**	4.69E-01	1.67E-04	5.36E-05	0.00E+00	4.02E-02	1.19E-03
Copper	**7440508**	3.40E-03	1.21E-06	3.88E-07	0.00E+00	0.00E+00	1.82E-05
Ethyl benzene	**100414**	6.62E-01	2.36E-04	7.56E-05	1.27E-02	5.67E-06	0.00E+00
Formaldehyde	**50000**	1.04E+00	3.71E-04	1.19E-04	4.81E-02	1.98E-03	1.01E-02
Hexane	**110543**	9.71E-01	3.46E-04	1.11E-04	0.00E+00	2.38E-06	0.00E+00
Manganese	**7439965**	3.40E-03	1.21E-06	3.88E-07	0.00E+00	6.47E-04	0.00E+00
Methanol	**67561**	2.50E-01	8.89E-05	2.85E-05	0.00E+00	1.07E-06	4.76E-06
Methyl ethyl ketone	**78933**	1.22E-02	4.33E-06	1.39E-06	0.00E+00	0.00E+00	5.00E-07
Methyl tert-butyl ether	**1634044**	1.19E+00	4.22E-04	1.35E-04	2.37E-03	2.54E-06	0.00E+00
m-Xylene	**108383**	2.24E+00	7.97E-04	2.55E-04	0.00E+00	5.47E-05	5.43E-05
Naphthalene	**91203**	3.04E-02	1.08E-05	3.47E-06	7.96E-03	5.79E-05	0.00E+00
Nickel	**7440020**	3.40E-03	1.21E-06	3.88E-07	6.81E-03	4.16E-03	9.09E-03
o-Xylene	**95476**	7.77E-01	2.77E-04	8.87E-05	0.00E+00	1.90E-05	1.89E-05
Styrene	**100425**	7.29E-02	2.60E-05	8.32E-06	0.00E+00	1.39E-06	1.85E-06
Toluene	**108883**	3.61E+00	1.29E-03	4.12E-04	0.00E+00	1.47E-04	3.86E-04
				Totals	**1.19E+02**	**2.39E-01**	**7.15E-02**

Name: Mobile Sources - Paved Road Dust **Prioritization Calculator**

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.							
Author or updater	Matthew Cegielski		*Last Update*	November 2, 2020				
Facility: ID#: Project #: Unit and Process#								
Operating Hours hr/yr	8,760.00							
Receptor Proximity and Proximity Factors	Cancer Score	Chronic Score	Acute Score	Max Score	Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.			
0< R<100 1.000	1.15E+00	7.69E-02	3.09E-02	1.15E+00				
100≤R<250 0.250	2.87E-01	1.92E-02	7.72E-03	2.87E-01				
250≤R<500 0.040	4.59E-02	3.08E-03	1.23E-03	4.59E-02				
500≤R<1000 0.011	1.26E-02	8.46E-04	3.40E-04	1.26E-02				
1000≤R<1500 0.003	3.45E-03	2.31E-04	9.26E-05	3.45E-03				
1500≤R<2000 0.002	2.30E-03	1.54E-04	6.17E-05	2.30E-03				
2000<R 0.001	1.15E-03	7.69E-05	3.09E-05	1.15E-03				
0	Enter the unit's CAS# of the substances emitted and their amounts.				Prioritzation score for each substance generated below. Totals on last row.			
Substance	**CAS#**	**Annual Emissions (lbs/yr)**	**Maximum Hourly (lbs/hr)**	**Average Hourly (lbs/hr)**	**Cancer**	**Chronic**	**Acute**	
Arsenic	7440382	5.33E-03	2.00E-06	6.08E-07	1.35E-01	6.08E-03	1.50E-02	
Cadmium	7440439	1.23E-03	4.61E-07	1.40E-07	3.98E-02	1.05E-03	0.00E+00	
Chromium, hexavalent	18540299	3.48E-04	1.31E-07	3.98E-08	4.02E-01	2.98E-05	0.00E+00	
Cobalt	7440484	9.43E-03	3.54E-06	1.08E-06	5.59E-01	0.00E+00	0.00E+00	
Copper	7440508	6.07E-02	2.28E-05	6.93E-06	0.00E+00	0.00E+00	3.41E-04	
Lead	7439921	5.08E-02	1.91E-05	5.80E-06	4.70E-03	0.00E+00	0.00E+00	
Manganese	7439965	3.28E-01	1.23E-04	3.74E-05	0.00E+00	6.24E-02	0.00E+00	
Mercury	7439976	4.92E-03	1.85E-06	5.62E-07	0.00E+00	2.81E-03	4.61E-03	
Nickel	7440020	3.69E-03	1.38E-06	4.21E-07	7.39E-03	4.51E-03	1.04E-02	
Selenium	7782492	8.20E-04	3.08E-07	9.36E-08	0.00E+00	7.02E-07	0.00E+00	
Vanadium (fume or dust)	7440622	2.91E-02	1.09E-05	3.32E-06	0.00E+00	0.00E+00	5.46E-04	
				0.00E+00	0.00E+00	0.00E+00	0.00E+00	
				0.00E+00	0.00E+00	0.00E+00	0.00E+00	
				0.00E+00	0.00E+00	0.00E+00	0.00E+00	
				0.00E+00	0.00E+00	0.00E+00	0.00E+00	
				0.00E+00	0.00E+00	0.00E+00	0.00E+00	
				0.00E+00	0.00E+00	0.00E+00	0.00E+00	
				0.00E+00	0.00E+00	0.00E+00	0.00E+00	
				0.00E+00	0.00E+00	0.00E+00	0.00E+00	
				0.00E+00	0.00E+00	0.00E+00	0.00E+00	
				Totals	1.15E+00	7.69E-02	3.09E-02	

Name: Mobile Sources - Unpaved Road Dust | **Prioritization Calculator**

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.				
Author or updater	Matthew Cegielski	*Last Update*	November 2, 2020		
Facility: **ID#:** **Project #:** **Unit and Process#**					
Operating Hours hr/yr	8,760.00				

Receptor Proximity and Proximity Factors		Cancer Score	Chronic Score	Acute Score	Max Score	
0< R<100	1.000	6.59E+00	2.72E-01	1.91E-01	6.59E+00	Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.
100≤R<250	0.250	1.65E+00	6.79E-02	4.77E-02	1.65E+00	
250≤R<500	0.040	2.64E-01	1.09E-02	7.64E-03	2.64E-01	
500≤R<1000	0.011	7.25E-02	2.99E-03	2.10E-03	7.25E-02	
1000≤R<1500	0.003	1.98E-02	8.15E-04	5.73E-04	1.98E-02	
1500≤R<2000	0.002	1.32E-02	5.43E-04	3.82E-04	1.32E-02	
2000<R	0.001	6.59E-03	2.72E-04	1.91E-04	6.59E-03	

0	Enter the unit's CAS# of the substances emitted and their amounts.				Prioritzation score for each substance generated below. Totals on last row.		
Substance	**CAS#**	**Annual Emissions (lbs/yr)**	**Maximum Hourly (lbs/hr)**	**Average Hourly (lbs/hr)**	**Cancer**	**Chronic**	**Acute**
Arsenic	7440382	1.14E-02	4.05E-06	1.30E-06	2.89E-01	1.30E-02	3.04E-02
Cadmium	7440439	3.67E-03	1.31E-06	4.19E-07	1.19E-01	3.14E-03	0.00E+00
Chromium, hexavalent	18540299	4.49E-03	1.60E-06	5.13E-07	5.19E+00	3.85E-04	0.00E+00
Cobalt	7440484	1.61E-02	5.74E-06	1.84E-06	9.56E-01	0.00E+00	0.00E+00
Copper	7440508	1.26E-01	4.50E-05	1.44E-05	0.00E+00	0.00E+00	6.76E-04
Lead	7439921	3.67E-01	1.31E-04	4.19E-05	3.39E-02	0.00E+00	0.00E+00
Manganese	7439965	8.07E-01	2.87E-04	9.21E-05	0.00E+00	1.53E-01	0.00E+00
Mercury	7439976	1.74E-01	6.20E-05	1.99E-05	0.00E+00	9.94E-02	1.55E-01
Nickel	7440020	1.83E-03	6.53E-07	2.09E-07	3.67E-03	2.24E-03	4.90E-03
Selenium	7782492	1.83E-03	6.53E-07	2.09E-07	0.00E+00	1.57E-06	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Totals	6.59E+00	2.72E-01	1.91E-01

Visalia Landfill Compost and Bioenergy Facilities Scheduling and Emission Reduction Credit Requirements

Yorke ENGINEERING, LLC
www.YorkeEngr.com

November 19, 2021

Ms. Jessica Willis
Planner IV
Tulare County Resource Management
Agency Environmental Planning Division
Ph: (559) 624-7122
Email: JWillis@tularecounty.ca.gov

Subject: Visalia Landfill Compost and Bioenergy Facilities Scheduling and Emission Reduction Credit Requirements

Dear Ms. Willis,

As requested, Yorke Engineering is pleased to provide additional information regarding the project scheduling and Emission Reduction Credit (ERC) requirements for the proposed Visalia Landfill Composting and Bioenergy Facility projects.

COMPOST FACILITY

The construction schedule for the proposed Compost Facility will depend on the availability of feedstock, demand for composting serves, and demand for finished compost product. Senate Bill (SB) 1383 requires at least 75% diversion from landfill of organic waste by 2025. Based on current projections by the County of Tulare Resource Management Agency (RMA), the County will need 137,000 tons per year (TPY) of new organic waste processing capacity in 2022, 167,000 TPY of new capacity by 2025, and up to 200,000 TPY of new capacity by 2035. Based on these parameters, the operational plan would be to construct the project in four phases, each with a capacity of 50,000 TPY, spaced out over the next 13 years.

Pursuant to San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 2201, Section 4.5.3, offsets are triggered on a pollutant-by-pollutant basis if the post-Project stationary source potential to emit (SSPE2) is equal to or greater than the emissions offset threshold levels listed in the rule. Based on the emissions estimates for the project, VOC emissions offsets will be required for VOC emissions from the composting facility. The facility will not exceed the offset threshold for NOx, CO, SOx or PM10. The offset determination for the proposed Compost Facility is shown in Table .

Table 1: Offset Determination for Compost Facility

	NO_x (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)
SSPE2	0	58,000	0	0	1753.11
Offset Threshold	20,000	20,000	200,000	54,750	29,200
Offsets Triggered?	No	Yes	No	No	No

Pursuant to Rule 2201, Section 4.7.2, for pollutants with a pre-project SSPE1 less than or equal to the offset threshold levels, emission offsets shall be provided for all increases in Stationary Source emissions above the offset trigger level, calculated as the difference between the SSPE2 and the offset trigger level. The offset trigger level for VOC is 20,000 pounds per year (10 tons per year). For Phase 1, the VOC emissions are predicted to be 7.36 tons. Because this does not exceed the offset threshold, ERCs will not be required. Upon construction of Phase 2, total emissions would be 14.72 tons. The applicant will be required to offset 4.72 tons of VOC (= 14.72 TPY – 10 TPY). With an offset Ratio of 1.5 to 1, the required ERCs are 7 tons per year (= 4.72 TPY x 1.5). Phases 3 and 4 would be required to offset the entire increase of 7.36 tons per year for each phase. With the offset ratio, 11 tons of VOC ERC would be required for each phase (= 7.36 TPY x 1.5). The project scheduling, capacity, emissions and ERC requirements are summarized in Table 2. ERC will be provided during the SJVAPCD air permit application process.

Table 2: Compost Area Organic Feedstock Tonnage per Phase

Phase	Anticipated Start of Operation	Capacity (TPY)	Annual VOC Emissions (TPY)	VOC ERC Required[1] (TPY)
1	2023	50,000	7.36	0
2	2025	50,000	7.36	7
3	2030	50,000	7.36	11
4	2035	50,000	7.36	11
Total	**---**	**200,000**	**29.44**	**29**

Notes:
ERC required is based on the maximum offset ratio of 1.5.

BIOENERGY FACILITY

Construction of the Bioenergy Facility will depend on the ability of the County to secure an operator and will depend on the demand for waste management services. SB 1383 requires at least 75% diversion from landfill of organic waste by 2025. While a firm schedule for project implementation has not been established, full operation by 2025 would be expected in order to support the regulatory goals.

The Bioenergy Facility would be a separate stationary source from the existing landfill and from the proposed compost facility since it is expected to be operated under separate management. Pursuant to Section 4.5.3 of Rule 2201, offsets are triggered on a pollutant by-pollutant basis and are required if the SSPE2 is equal to or greater than the emissions offset threshold levels listed in the rule. The offset determination for the proposed Bioenergy Facility is shown in Table 3. As shown, the applicant is not required to offset emissions for this facility.

Table 3: Offset Determination for Bioenergy Facility

	NO_x (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)
SSPE2	9,989	13,718	85,894	1,075	1,312
SSPE1	0	0	0	0	0
NEI	9,989	13,718	85,894	1,075	1,312
Offset Threshold	20,000	20,000	200,000	54,750	29,200
Offsets Triggered?	**No**	**No**	**No**	**No**	**No**

CONCLUSION

Should you have any questions or concerns, please contact me at (805) 293-7756.

Best Regards,

Russell Kingsley
Principal Engineer
Yorke Engineering, LLC
RKingsley@YorkeEngr.com

cc: Hector Guerra, Tulare County
Bryce F Howard, Tulare County
Neil S. R. Edgar, Edgar and Associates
Evan Edgar, Edgar and Associates
Raj Rangaraj, Yorke Engineering
Jessica Mohatt, Yorke Engineering

APPENDIX “B”

BIOLOGICAL SPECIES EVALUATION TECHNICAL MEMORANDUM

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 730-2653

Aaron R. Bock — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

TECHNICAL MEMORANDUM
BIOLOGICAL SPECIES EVALUATION

DATE: November 3, 2021

TO: Hector Guerra, Chief Environmental Planner

FROM: Jessica Willis, Planner IV

SUBJECT: Biological Resources Evaluation for the Visalia Landfill - Compost and Biomass Conversion Facility Project

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PROJECT DESCRIPTION

The County of Tulare Resource Management Agency (RMA) is preparing a Focused Environmental Impact Report (EIR) to evaluate the environmental effects associated with the development of a Compost and Biomass Conversion Facility (Project) within the boundaries of the existing Visalia Landfill site.

Existing Landfill Operations

The existing Visalia Ladfill is located at 8614 Avenue 328, Visalia, CA 93291. The entire landfill boundary currently emcompasses approximately 634 acres at the northeast corner of Avenue 328 and Road 80 and includes five (5) parcels (Assessor Parcel Numbers 077-020-018, 077-020-021, 077-020-024, 077-020-026, and 077-020-030). The Project location and related activities will be entirely within APN 077-020-030; all other APNs will not be utilized for the Project.

On October 23, 2001, the Tulare County Board of Supervisors certified an Environmental Impact Report (EIR) for an expansion to the existingVisalia Landfill (SCH#2000051098). At the time of the EIR, kit fox were not present within the entire Visalia Landfill site; however, burrowing owls were observed. As such the EIR included mitigation measures to ensure minimal impacts to these species.

In 2013, the Tulare County Board of Supervisors certified a Negative Declaration (ND) for the Visalia Landfill Waste Management Unit-1 (WMU-1) Closure Construction project (SCH#2013081024). According to the ND, "The mitigation measures have proven effective as no occurrence of disturbance or take of burrowing owl has been reported since the opening of the Landfill expansion."[1]

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[1] Tulare County. Initial Study/Negative Declaration, Visalia Landfill WMU-1 Closure. Page 14. August 2013.

Compost Facility

The County intends to develop and operate a covered aerated static pile (CASP) compost facility to comply with the upcoming SB 1383 regulations. The compost facility will be located on the County's Visalia Landfill property that encompasses approximately 634 acres, of which the compost facility will occupy 36 acres, located in a soil borrow recessed approximately 20 feet below grade. The compost facility will be designed to accept up to 200,000 tons per year (TPY) in increments of 50,000 TPY technology modules and can store up to 200,000 cubic yards on-site of organic material that would have otherwise been landfilled. The compost facility would include installing processing and composting equipment, a 50,000 square foot processing building, compacted compost pads, and a lined pond. When operational, the proposed Project is proposing to operate Monday-Friday between 6:00 a.m. to 4:00 p.m., and 7:00 a.m. to 12:00 p.m. (noon) on Saturdays. Depending upon demand, summer hours may begin earlier than 6:00 a.m. A majority of the trips will occur between 7:00 a.m. and 9:00 a.m., and between 4:00 and 6:00 p.m. The Project would utilize approximately 15-20 employees and include an approximate 1,000 square foot office.

Biomass Facility

Tulare County Public Works is proposing to amend their CUP application to add a 2.0 mega-watt (MW) biomass conversion facility at their landfill. The facility will produce electricity, heat and biochar using wood fuel that will be provided by local activities to reduce landfill disposal to meet the mandates of SB 1383 to reduce 75% of all organic, which includes wood waste, from landfill disposal by 2025. The facility will utilize approximately 18,000 bone dry tons (BDT) of wood chips per year or 25,000 tons of per year of wet recovered wood waste and produce approximately a net amount (after parasitic load) 2.0 MW of electrical energy per hour. In addition to this the facility will also produce approximately 20-30 MM BTU of waste heat and approximately 300-600 pounds of biochar per hour. The facility is planned to operate 24/7, however given there will be maintenance requirements for the equipment it is anticipated that the gas production equipment and the GE Jenbacher internal combustion engine generator sets ("gensets") will likely only operate between 7,000 and 8,000 hours per year, or approximately 80-90% capacity.

PROJECT LOCATION

The Project is located within the boundaries of the existing Visalia Ladfill located at 8614 Avenue 328, Visalia, CA 93291. The Project site is located in an unincorporated area of Tulare County approximately two (2) miles north of the City of Visalia (see Attachment A).

Assessor Parcel Number(s):	077-020-030
USGS 7.5-minute Quadrangle):	Traver
Surrounding Quadrangles:	Selma, Reedley, Orange Cove South, Burris Park, Monson, Remnoy, Goshen, and Visalia
Public Land Survey System:	Section 4, Township 19 South, Range 24 East, Mount Diablo Base and Meridian
Latitude/Longitude:	36° 23' 10.64" N / 119° 22' 13" W

The proposed Project site is located directly south of the WMU-1 closure area.

BIOLOGICAL RESOURCES EVALUATION

According to the 2013 ND, "…the proposed Project site is within the historic ranges of three listed species: Swainson's hawk (Buteo swainsoni), San Joaquin kit fox (Vulpes macrotis mutica), and vernal pool fairy shrimp (Branchinecta lynchi). San Joaquin kit fox are federally listed as "Endangered" while the state lists it as "Threatened" status; Swainson's hawk does not have a federally listed status but is listed as "Threatened" by the state; and fairy shrimp is listed as federally Threatened but not listed on the State's list."[2] "The immediate surrounding area remains rural in nature (agricultural production to the north, east, and south, and a dairy to the west) and may contain habitat for Swainson's hawk or kit fox. The mitigation measures contained in the Visalia Landfill EIR are still applicable and incorporated into this Negative Declaration by reference. Therefore, in the unlikely event of discovery of the earlier noted species on the site, protocols established by the U.S. Fish and Wildlife Service (USFW) or the California Department of Fish and Wildlife (CDFW) will be implemented before any earthmoving activities are allowed to commence. If discovery occurs during earthmoving activities, all activities will be immediately ceased until a qualified biologist determines which course of action to implement per USFW or CDFW protocols."[3]

Special Status Species

The proposed Project site has the potential to contain habitat or foraging land for Swainson's hawk or kit fox; however, as the initial EIR and subsequent ND are now more than five (5) years old, the CDFW's California Natural Diversity Database (CNDDB), RareFind 5 and Biogeographic Information and Observation System (BIOS) mapping application was accessed to obtain current biological species data for the Project vicinity.[4]

The BIOS list includes "mapped" species as well as "unprocessed" CNDDB data. The BIOS list indicates that there 53 special status species and 2 natural communities recorded within the 9-quadrangle Project vicinity. These special status species include: 19 plant species; 11 bird species; 7 mammal species; 5 insect species; 4 amphibian species; 3 reptile species; 3 crustacean species; and 1arachnid species. (See Attachment D)

The CNDDB list indicates that there are 14 special status species and 2 natural communities recorded within the 5-mile Project vicinity. These species include: 6 plant species; 3 bird species; 1 mammal species; 1 amphibian species; and 3 crustacean species. (See Attachment C)

The CNDDB list also indicates that there is one (1) special status animal species, the San Joaquin kit fox, recorded within 0.5 mile of the Project site. (see Attachment B)

Jurisdictional Waters

The Project site is within the boundaries of the Kaweah Delta Water Conservtion District and the St. John's Water District. The Saint John's River is located approximately The CDFW's BIOS

[2] Ibid.
[3] Op. Cit. 14-15
[4] California Department of Fish and Wildlife. CNDDB Maps and Data. Accessed on September 28, 2021 and November 2, 2021 at https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data.

mapping application was accessed on November 2, 2021.[5] Based on the BIOS map, jurisdictional State waters are absent from the Project site. (See Attachment E)

The United States Geological Survey (USGS) National Water Information System (NWIS) and United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping applications were accessed on October 25, 2021.[6, 7] Based on the information provided by the NWIS and NWI maps, the nearest jurisdictional bodies of water are classified by the USFWS as "riverine" and are located approximately 0.75 mile directly north and 0.5 mile directly south of the Project site (see Attachment E). As these jurisdictional waters are absent from the Project site itself, the Project will not result in significant impact to any riparian habitats or other protected wetlands. Mitigation measures that would reduce impacts have not been proposed, nor would any measures be warranted.

CEQA Guidelines Checklist Items

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

As previously noted, the Project site is in the historic range (within 5-miles) of various special status plant and animal species and has potential for habitat and foraging grounds for the San Joaquin kit fox, burrowing owl, and Swainson's hawk. The Project site is within the boundaries of the existing Visalia Landfill and as such, is required to comply with existing mitigation measures for the site. However, as the Project site is currently not active (i.e., no landfill operations or earthmoving activities) the following mitigation measures will be required.

The following Mitigation Meaasures have been enumerated consistent with the format of the draft Focused EIR's numbering system for mitigation as applicable to Chapter 3.2 Biological Resources.

Swainson's Hawk

Mitigation 3.2-1 (Temporal Avoidance). In order to avoid impacts to nesting birds, construction activities in the rural zone will occur, where possible, outside the nesting season, typically defined as March 1-September 15.

Mitigation 3.2-2 (Pre-construction Surveys). If construction activities in the rural zone must occur between March 1 and September 15, a qualified biologist will conduct preconstruction nest surveys for Swainson's hawks on and within ½ mile of the work area within 30 days prior to the start of construction. The survey will consist of inspecting all accessible, suitable trees of the survey area for the presence of nests and hawks.

Mitigation 3.2-3 (Avoidance of Active Establish Buffers). Should any active Swainson's hawk nests be discovered within the survey area, the observation will be submitted to the CNDDB,

[5] Ibid.
[6] United States Geological Survey.National Water Information System: Mapper https://maps.waterdata.usgs.gov/mapper/index.html
[7] United States Fish and Wildlife Service. Wetlands Mapper. https://www.fws.gov/wetlands/data/mapper.HTML

and an appropriate disturbance-free buffer will be established around the nest based on local conditions and agency guidelines. Disturbance-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently.

Burrowing Owl

Mitigation 3.2-4 (Pre-construction Surveys). A pre-construction survey for burrowing owls will be conducted by a qualified biologist within 30 days of the onset of project-related activities involving ground disturbance or heavy equipment use. The survey area will include all suitable habitat on and within 500 feet of project impact areas, where accessible.

Mitigation 3.2-5 (Avoidance of Active Nests). If pre-construction surveys and subsequent project activities are undertaken during the breeding season (February 1-August 31) and active nest burrows are located within or near project impact areas, a 250-foot construction setback will be established around active owl nests, or alternate avoidance measures implemented in consultation with CDFW. The buffer areas will be enclosed with temporary fencing to prevent construction equipment and workers from entering the setback area. Buffers will remain in place for the duration of the breeding season, unless otherwise arranged with CDFW. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described below.

Mitigation 3.2-6 (Passive Relocation of Resident Owls). During the non-breeding season (September 1-January 31), resident owls occupying burrows in project impact areas may be passively relocated to alternative habitat in accordance with a relocation plan prepared by a qualified biologist. Passive relocation may include one or more of the following elements: 1) establishing a minimum 50 foot buffer around all active burrowing owl burrows, 2) removing all suitable burrows outside the 50 foot buffer and up to 160 feet outside of the impact areas as necessary, 3) installing one-way doors on all potential owl burrows within the 50 foot buffer, 4) leaving one-way doors in place for 48 hours to ensure owls have vacated the burrows, and 5) removing the doors and excavating the remaining burrows within the 50 foot buffer.

San Joaquin Kit Fox

Mitigation 3.2-7 (Pre-construction Surveys). Pre-construction surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance, construction activities, and/or any project activity likely to impact the San Joaquin kit fox. These surveys will be conducted in accordance with the USFWS *Standard Recommendations*. The primary objective is to identify kit fox habitat features (e.g.; potential dens and refugia) on the project site and evaluate their use by kit foxes through use of remote monitoring techniques such as motion-triggered cameras and tracking medium. If an active kit fox den is detected within or immediately adjacent to the area of work, the USFWS and CDFW shall be contacted immediately to determine the best course of action.

Mitigation 3.2-8 (Avoidance). Should a kit fox be found using any of the sites during preconstruction surveys, the project will avoid the habitat occupied by the kit fox and the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified.

Mitigation 3.2-9 (Minimization). Construction activities shall be carried out in a manner that minimizes disturbance to kit foxes. Minimization measures include, but are not limited to: restriction of project-related vehicle traffic to established roads, construction areas, and other designated areas; inspection and covering of structures (e.g., pipes), as well as installation of escape structures, to prevent the inadvertent entrapment of kit foxes; restriction of rodenticide and herbicide use; and proper disposal of food items and trash.

Mitigation 3.2-10 (Employee Education Program) Prior to the start of construction the applicant will retain a qualified biologist to conduct a tailgate meeting to train all construction staff that will be involved with the project on the San Joaquin kit fox. This training will include a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during project construction and implementation.

Mitigation 3.2-11 (Mortality Reporting) The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified in writing within three working days in case of the accidental death or injury of a San Joaquin kit fox during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.

The proposed Project would only contribute to cumulative impacts related to this Checklist item if Project-specific impacts were to occur. As noted earlier, the Project has the potential to result in loss of habitat or direct impact to these special status species, Less Than Significant Cumulative Impact With Mitigation related to this Checklist Item will occur.

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

The Project site is currently in use for landfill operations. Riparian or other sensitive habitats do not occur on the Project site. Because these habitats are absent, they will not be impacted by Project implementation. As such, No Project-specific Impacts or Cumulative Impacts related to this Checklist Item will occur.

c) Would the project 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?

As previously stated, the Project site is currently in use for landfill operations; thus, the site has previously been highly disturbed and contains no hydrologic features. As such, federally protected waters and waters of the state are absent from the Project site. The Project will have no impact on jurisdictional waters. No Project-specific Impacts or Cumulative Impacts related to this Checklist Item will occur.

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

Wildlife is not expected to regularly use or traverse through the Project site, as it is currently in use for landfill operations. There is frequent human activity at the site, involving heavy equipment and vehicles. The Project site does not contain any features that would function as a fish or wildlife movement corridor, nor would it be considered a nursery site for any species.

Therefore, the Project will not impede the movement of native fish or wildlife species, nor impede their use of a nursery site. Project impacts to wildlife movements, movement corridors, and nursery sites are considered less than significant under CEQA. No Project-specific Impacts or Cumulative Impacts related to this Checklist Item will occur.

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

The proposed Project is consistent with the goals and policies of the Tulare County General Plan. Any Habitat Conservation Plans or Natural Community Conservation Plans outlined by the County will not be affected by Project implementation. Therefore, the Project would be carried out in compliance with local policies and ordinances. No Project-specific Impacts or Cumulative Impacts related to this Checklist Item will occur.

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

As noted earlier, there are two habitat conservation plans that apply in Tulare County. The Kern Water Habitat Conservation Plan only applies to an area in Allensworth (near the southwest quadrant of the County) and the Project site is not subject to this Plan. The Recovery Plan for Upland Species in the San Joaquin Valley outlines a number of species that are important to the San Joaquin Valley. None of these species were identified on the Project site. No Project-specific Impacts or Cumulative Impacts related to this Checklist Item will occur.

SUMMARY AND CONCLUSION

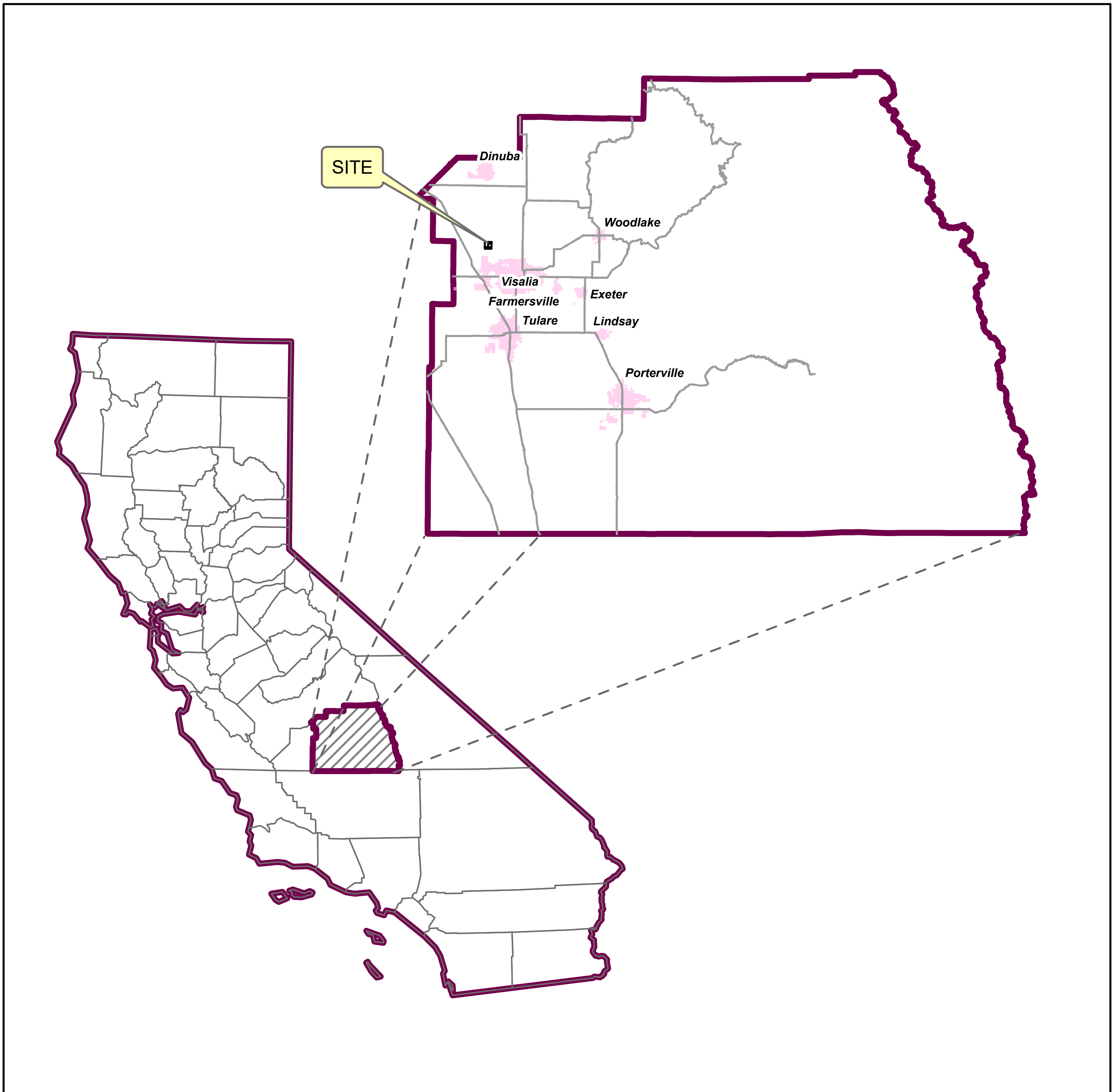
The Project is located within the boundaries of the existing Visalia Landfill. There are no special status species, natural communities, or protected riparian habitats or wetlands located within the Project site. Mitigation Measures 3.2-1 through 3.2-11are consistent with mitigation measures included in an EIR previously prepared and certified for the Project area. The Mitigation Measures are typical for the special status species (i.e.; Swainson’s hawk, Burrowing owl, and San Joaquin kit fox) documented on the Valley floor areas of Tulare County similar to the proposed Project site containing active/productive farmlands, proximity to waterways, previously disturbed but currently inactive areas, proximity of urban development, predominantly rural nature within vicinity of the site, etc. These mitigation measures require pre-construction surveys for special status plant and animal species, respectively, and will be implemented prior to the onset of project-related activities. If no special status species are identified within the Project site during pre-construction surveys, no further action will be required; however, in the event that special status species are identified, these measures require consultation with and implementation of CDFW and/or USFWS requirements. With implementation of Mitigation Measures 3.2-1 through 3.2-11, impacts to special status plant and animal species are considered to be **Less Than Significant with Mitigation**.

Attachment A

Project Location Maps

A1. Regional Vicinity Map

Location Map
for
Visalia Landfill Compost and Biomass Conversion Facility

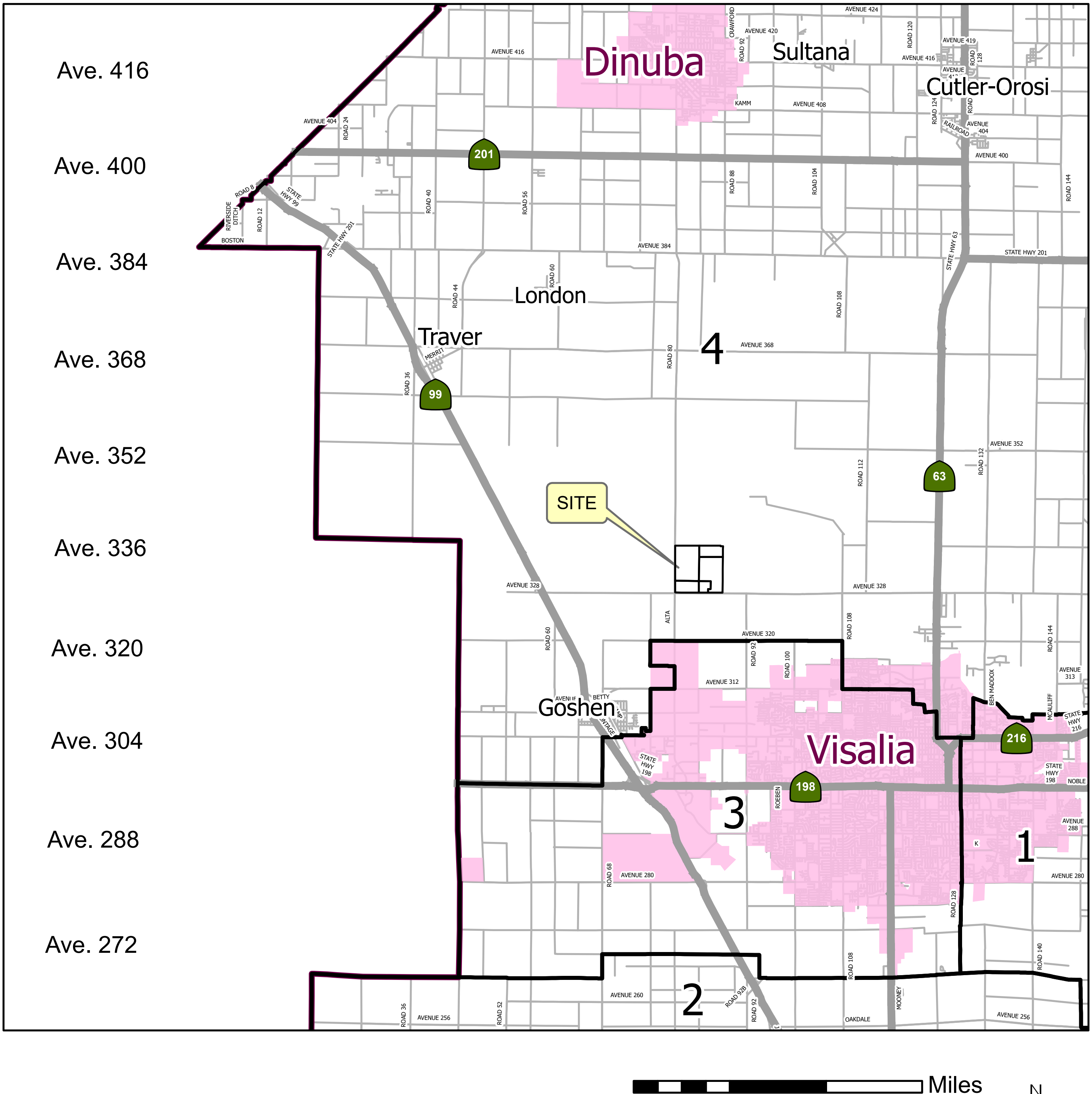


Supervisorial District: #4

Assesors Parcel # 077-020-018, 077-020-021, 077-020-024, 077-020-026, 077-020-030

A2. Vicinity Map

Location Map
for
Visalia Landfill Compost and Biomass Conversion Facility



Supervisorial District: #4

Assesors Parcel # 077-020-018, 077-020-021, 077-020-024, 077-020-026, 077-020-030

A3. Project Location Map

Location Map
for
Visalia Landfill Compost and Biomass Conversion Facility

Owner: TULARE COUNTY OF
Address: COUNTY CIVIC CENTER
City, State ZIP: VISALIA, CA 93291

Feet
0 1,250 2,500 5,000

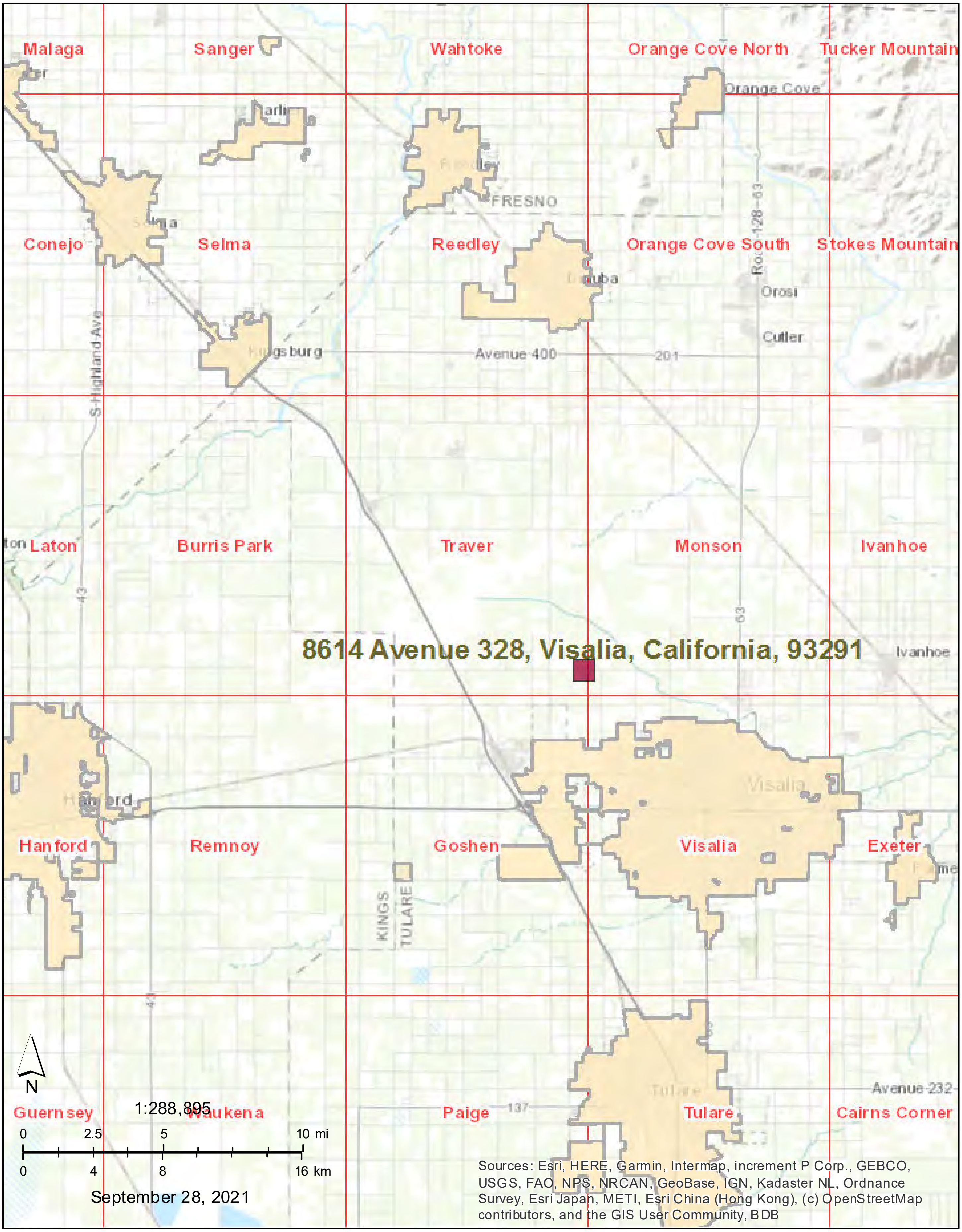
N

Supervisorial District: #4

Assesors Parcel # 077-020-018, 077-020-021, 077-020-024, 077-020-026, 077-020-030

A4. 9-Quad Vicinity Map

9-Quad Map of Project Area



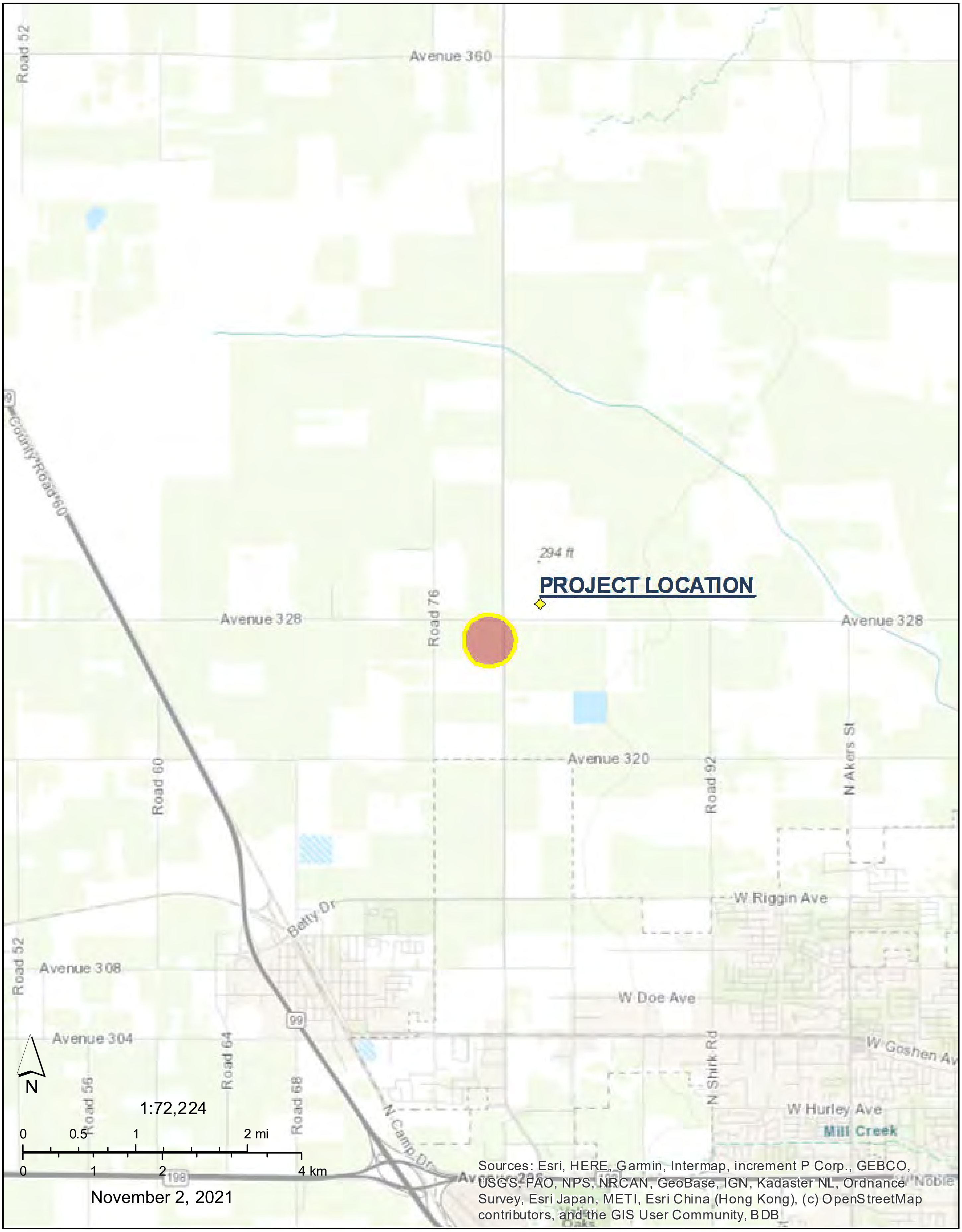
Author: jwillis@tularecounty.ca.gov
Printed from http://bios.dfg.ca.gov

Attachment B

Species Recorded within 0.5 mile of Project Site

B1. Project Site Species Map

Species Within 0.5 Miles of Project Area



Author: jwillis@tularecounty.ca.gov
Printed from http://bios.dfg.ca.gov

B2. Project Site CNDDB Species List

California Natural Diversity Database (CNDDB) Government [ds45]

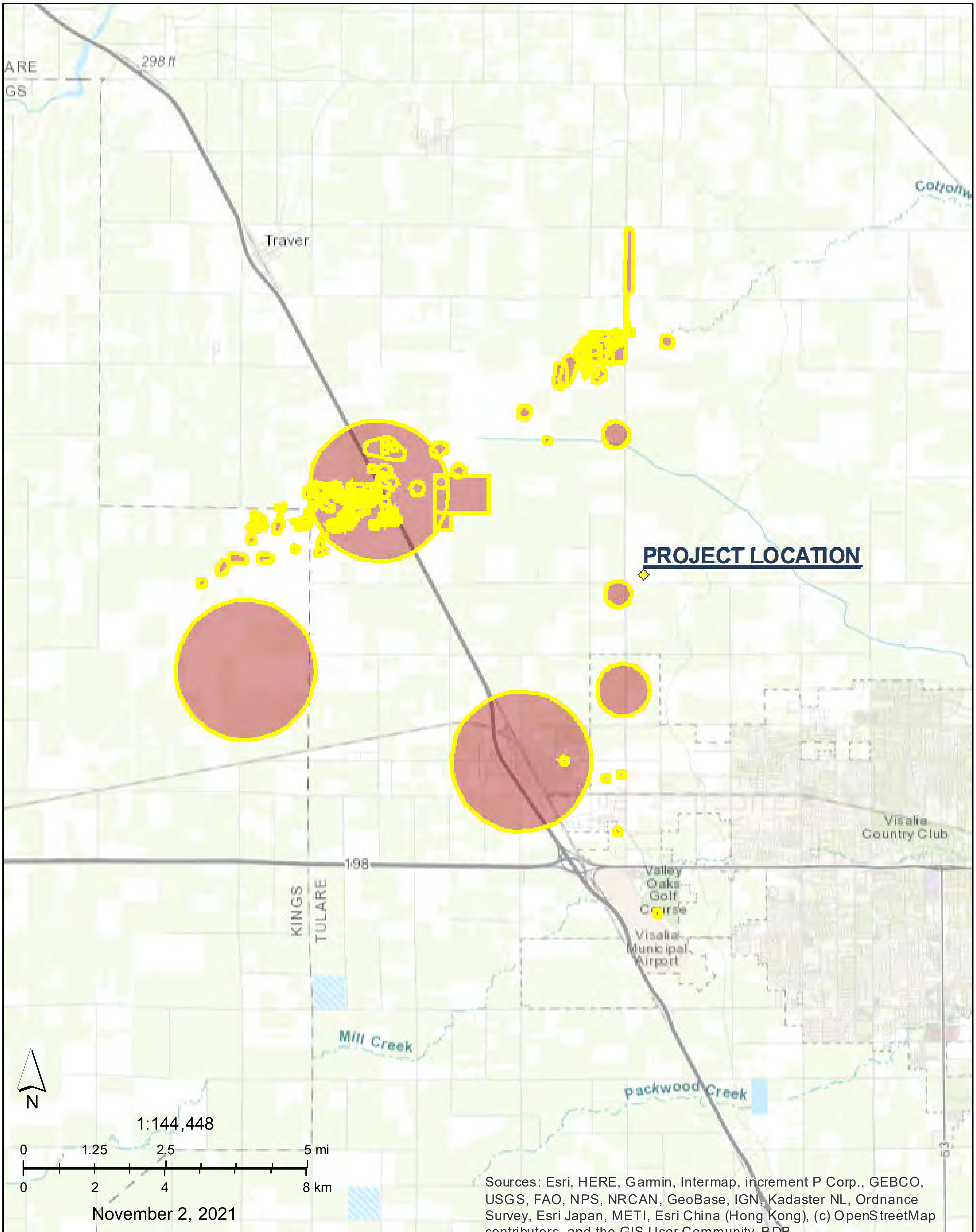
Scientific Name	Common Name	Element Code	Occ Number	MAPNDX	EONDX	Key Quad Code	Key Quad Name	Key County Code	Accuracy	Presence	Occ Type	Occ Rank	Sensitive	Site Date	Elm Date	Owner Management	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank	CDFW Status	Other Status	Symbology	Taxon Group
Vulpes macrotis mutica	San Joaquin kit fox	AMAJA03041	150	55307	55307	3611944	Traver	TUL	1/5 mile	Presumed Extant	Natural/Native occurrence	Fair	N	20030808	20030808	UNKNOWN	Endangered	Threatened	G4T2	S2				204	Mammals

Attachment C

Species Recorded within 5 miles of Project Site

C1. Project Vicinity Species Map

Species Within 5 Miles of Project Area



Author: jwillis@tularecounty.ca.gov
Printed from http://bios.dfg.ca.gov

C2. Project Vicinity CNDDB Species List

California Natural Diversity Database (CNDDB) Government [ds45]

Scientific Name	Common Name	Element Code	Occ Number	MAPNDX	EONDX	Key Quad Code	Key Quad Name	Key County Code	Accuracy	Presence	Occ Type	Occ Rank	Sensitive	Site Date	Elm Date	Owner Management	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank	CDFW Status	Other Status	Symbology	Taxon Group
Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	113	32752	18594	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Good	N	19930109	19930109	PVT	Threatened	None	G3	S3			IUCN_VU	202	Crustaceans
Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	111	32737	17096	3611934	Goshen	TUL	80 meters	Presumed Extant	Natural/Native occurrence	Unknow n	N	19950209	19950209	PVT	Threatened	None	G3	S3			IUCN_VU	201	Crustaceans
Valley Sacaton Grassland	Valley Sacaton Grassland	CTT42120CA	12	15270	8665	3611934	Goshen	KNG	1 mile	Presumed Extant	Natural/Native occurrence	Poor	N	19850312	19850312	PVT	None	None	G1	S1.1				304	Herbaceous
Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	129	40395	35402	3611944	Traver	TUL	1/10 mile	Presumed Extant	Natural/Native occurrence	Fair	N	19980410	19980410	PVT	Endangered	None	G4	S3S4			IUCN_EN	204	Crustaceans
Atriplex cordulata var. cordulata	heartscale	PDCHE040B0	30	25124	3244	3611934	Goshen	TUL	1 mile	Presumed Extant	Natural/Native occurrence	Unknow n	N	19380509	19380905	UNKNOWN	None	None	G3T2	S2	1B.2		BLM_S	804	Dicots
Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	110	32735	17486	3611944	Traver	TUL	80 meters	Presumed Extant	Natural/Native occurrence	Unknow n	N	19920222	19920222	PVT-HARRELL	Threatened	None	G3	S3			IUCN_VU	201	Crustaceans
Northern Claypan Vernal Pool	Northern Claypan Vernal Pool	CTT44120CA	10	15328	26434	3611944	Traver	TUL	1 mile	Presumed Extant	Natural/Native occurrence	Unknow n	N	1983XXXX	1983XXXX	UNKNOWN	None	None	G1	S1.1				304	Herbaceous
Atriplex subtilis	subtle orache	PDCHE042T0	8	25124	33912	3611934	Goshen	TUL	1 mile	Possibly Extirpated	Natural/Native occurrence	None	N	20020912	19050901	UNKNOWN	None	None	G1	S1	1B.2			804	Dicots
Athene cunicularia	burrow ing ow l	ABNSB10010	310	40396	35403	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Fair	N	19980410	19980410	PVT	None	None	G4	S3		SSC	BLM_S; IUCN_LC; USFWS_BCC	203	Birds
Spea hammondii	w estern spadefoot	AAABF02020	288	55262	55262	3611934	Goshen	TUL	80 meters	Presumed Extant	Natural/Native occurrence	Good	N	20040422	20040422	PVT-JACUZZI PROPERTY	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	201	Amphibians
Vulpes macrotis mutica	San Joaquin kit fox	AMAJA03041	150	55307	55307	3611944	Traver	TUL	1/5 mile	Presumed Extant	Natural/Native occurrence	Fair	N	20030808	20030808	UNKNOWN	Endangered	Threatened	G4T2	S2				204	Mammals
Atriplex minuscula	lesser saltscale	PDCHE042M0	14	56415	56431	3611934	Goshen	TUL	80 meters	Presumed Extant	Natural/Native occurrence	Fair	N	20020912	20020912	UNKNOWN	None	None	G2	S2	1B.1			101	Dicots
Atriplex minuscula	lesser saltscale	PDCHE042M0	16	56419	56435	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Good	N	20000710	20000710	UNKNOWN	None	None	G2	S2	1B.1			102	Dicots
Vulpes macrotis mutica	San Joaquin kit fox	AMAJA03041	619	67378	67546	3611944	Traver	TUL	1/5 mile	Presumed Extant	Natural/Native occurrence	Unknow n	N	1971XXXX	1971XXXX	UNKNOWN	Endangered	Threatened	G4T2	S2				204	Mammals
Vulpes macrotis mutica	San Joaquin kit fox	AMAJA03041	907	67784	67936	3611934	Goshen	TUL	2/5 mile	Presumed Extant	Natural/Native occurrence	Unknow n	N	197507XX	197507XX	UNKNOWN	Endangered	Threatened	G4T2	S2				204	Mammals
Atriplex minuscula	lesser saltscale	PDCHE042M0	15	56417	56433	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Fair	N	20020912	20020912	UNKNOWN	None	None	G2	S2	1B.1			102	Dicots
Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	293	86221	87258	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Good	N	20110524	20110524	PVT	Endangered	None	G4	S3S4			IUCN_EN	203	Crustaceans
Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	294	86222	87264	3611944	Traver	TUL	1/10 mile	Presumed Extant	Natural/Native occurrence	Good	N	20110516	20110516	PVT	Endangered	None	G4	S3S4			IUCN_EN	204	Crustaceans
Buteo sw ainsoni	Sw ainson's haw k	ABNKC19070	1782	86224	87266	3611944	Traver	TUL	80 meters	Presumed Extant	Natural/Native occurrence	Good	N	20110422	20110422	PVT	None	Threatened	G5	S3			BLM_S; IUCN_LC; USFWS_BCC	201	Birds
Buteo sw ainsoni	Sw ainson's haw k	ABNKC19070	1783	86225	87267	3611944	Traver	TUL	1/10 mile	Presumed Extant	Natural/Native occurrence	Good	N	20080716	20080716	PVT	None	Threatened	G5	S3			BLM_S; IUCN_LC; USFWS_BCC	204	Birds
Spea hammondii	w estern spadefoot	AAABF02020	428	86230	87272	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Good	N	20110516	20110516	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	203	Amphibians
Spea hammondii	w estern spadefoot	AAABF02020	429	86232	87274	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Good	N	20110516	20110516	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	203	Amphibians
Spea hammondii	w estern spadefoot	AAABF02020	431	86234	87276	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Good	N	20110516	20110516	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	203	Amphibians

Spea hammondii	western spadefoot	AAABF02020	432	86235	87277	3611944	Traver	TUL	1/10 mile	Presumed Extant	Natural/Native occurrence	Good	N	20110516	20110516	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	204	Amphibians
Spea hammondii	western spadefoot	AAABF02020	433	86236	87278	3611944	Traver	TUL	1/10 mile	Presumed Extant	Natural/Native occurrence	Good	N	20110524	20110524	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	204	Amphibians
Spea hammondii	western spadefoot	AAABF02020	434	86237	87279	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Good	N	20110524	20110524	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	203	Amphibians
Lanius ludovicianus	loggerhead shrike	ABPBR01030	106	86216	87281	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Good	N	19920629	19920629	PVT	None	None	G4	S4		SSC	IUCN_LC; USFWS_BCC	203	Birds
Spea hammondii	western spadefoot	AAABF02020	430	86233	87275	3611944	Traver	TUL	1/10 mile	Presumed Extant	Natural/Native occurrence	Good	N	20110524	20110524	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	204	Amphibians
Puccinellia simplex	California alkali grass	PMPOA53110	14	25124	100163	3611934	Goshen	TUL	1 mile	Possibly Extirpated	Natural/Native occurrence	None	N	19250324	19250324	UNKNOWN	None	None	G3	S2	1B.2		BLM_S	804	Monocots
Athene cunicularia	burrowing owl	ABNSB10010	2004	A4870	106568	3611944	Traver	TUL	80 meters	Presumed Extant	Natural/Native occurrence	Unknown	N	20170301	20170301	PVT	None	None	G4	S3		SSC	BLM_S; IUCN_LC; USFWS_BCC	201	Birds
Athene cunicularia	burrowing owl	ABNSB10010	2005	A4872	106570	3611944	Traver	TUL	80 meters	Presumed Extant	Natural/Native occurrence	Unknown	N	20170301	20170301	PVT	None	None	G4	S3		SSC	BLM_S; IUCN_LC; USFWS_BCC	201	Birds
Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	911	A6723	108492	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Excellent	N	20170301	20170301	PVT	Threatened	None	G3	S3			IUCN_VU	202	Crustaceans
Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	912	A6724	108493	3611944	Traver	KNG	80 meters	Presumed Extant	Natural/Native occurrence	Excellent	N	20170301	20170301	PVT	Threatened	None	G3	S3			IUCN_VU	201	Crustaceans
Spea hammondii	western spadefoot	AAABF02020	472	A6746	108515	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Excellent	N	20170301	20170301	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	202	Amphibians
Spea hammondii	western spadefoot	AAABF02020	473	A6747	108517	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Excellent	N	20170301	20170301	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	202	Amphibians
Spea hammondii	western spadefoot	AAABF02020	474	A6749	108518	3611944	Traver	KNG	specific area	Presumed Extant	Natural/Native occurrence	Excellent	N	20170301	20170301	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	202	Amphibians
Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	140	41572	41572	3611944	Traver	KNG	specific area	Presumed Extant	Natural/Native occurrence	Fair	N	20170301	20170301	PVT	Endangered	None	G4	S3S4			IUCN_EN	202	Crustaceans
Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	295	86223	87265	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Good	N	20170301	20170301	PVT	Endangered	None	G4	S3S4			IUCN_EN	202	Crustaceans
Buteo swainsoni	Swainson's hawk	ABNKC19070	2733	A8178	109959	3611934	Goshen	TUL	80 meters	Presumed Extant	Natural/Native occurrence	Unknown	N	20170530	20170530	UNKNOWN	None	Threatened	G5	S3			BLM_S; IUCN_LC; USFWS_BCC	201	Birds
Atriplex minuscula	lesser saltscale	PDCHE042M0	52	B0734	112603	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Excellent	N	20160802	20160802	PVT	None	None	G2	S2	1B.1			103	Dicots
Atriplex minuscula	lesser saltscale	PDCHE042M0	53	B0735	112604	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Excellent	N	20160802	20160802	PVT	None	None	G2	S2	1B.1			102	Dicots
Atriplex minuscula	lesser saltscale	PDCHE042M0	54	B0736	112605	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Excellent	N	20160802	20160802	PVT	None	None	G2	S2	1B.1			102	Dicots
Spea hammondii	western spadefoot	AAABF02020	435	86238	87280	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Good	N	20180409	20180409	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	203	Amphibians
Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	292	B2907	87257	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Good	N	20180409	20180409	PVT-WESTERVELT ECOLOGICAL SVCS	Endangered	None	G4	S3S4			IUCN_EN	203	Crustaceans
Puccinellia simplex	California alkali grass	PMPOA53110	76	B3004	114929	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Good	N	20170331	20170331	PVT	None	None	G3	S2	1B.2		BLM_S	802	Monocots
Puccinellia simplex	California alkali grass	PMPOA53110	77	B3005	114931	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Good	N	20170405	20170405	PVT	None	None	G3	S2	1B.2		BLM_S	102	Monocots
Buteo swainsoni	Swainson's hawk	ABNKC19070	2795	B3406	115321	3611934	Goshen	TUL	80 meters	Presumed Extant	Natural/Native occurrence	Unknown	N	20170706	20170706	CITY OF VISALIA	None	Threatened	G5	S3			BLM_S; IUCN_LC; USFWS_BCC	201	Birds
Buteo swainsoni	Swainson's hawk	ABNKC19070	2765	B3288	115203	3611944	Traver	TUL	1/5 mile	Presumed Extant	Natural/Native occurrence	Good	N	20170405	20170405	PVT-WESTERVELT ECOLOGICAL SVCS	None	Threatened	G5	S3			BLM_S; IUCN_LC; USFWS_BCC	204	Birds

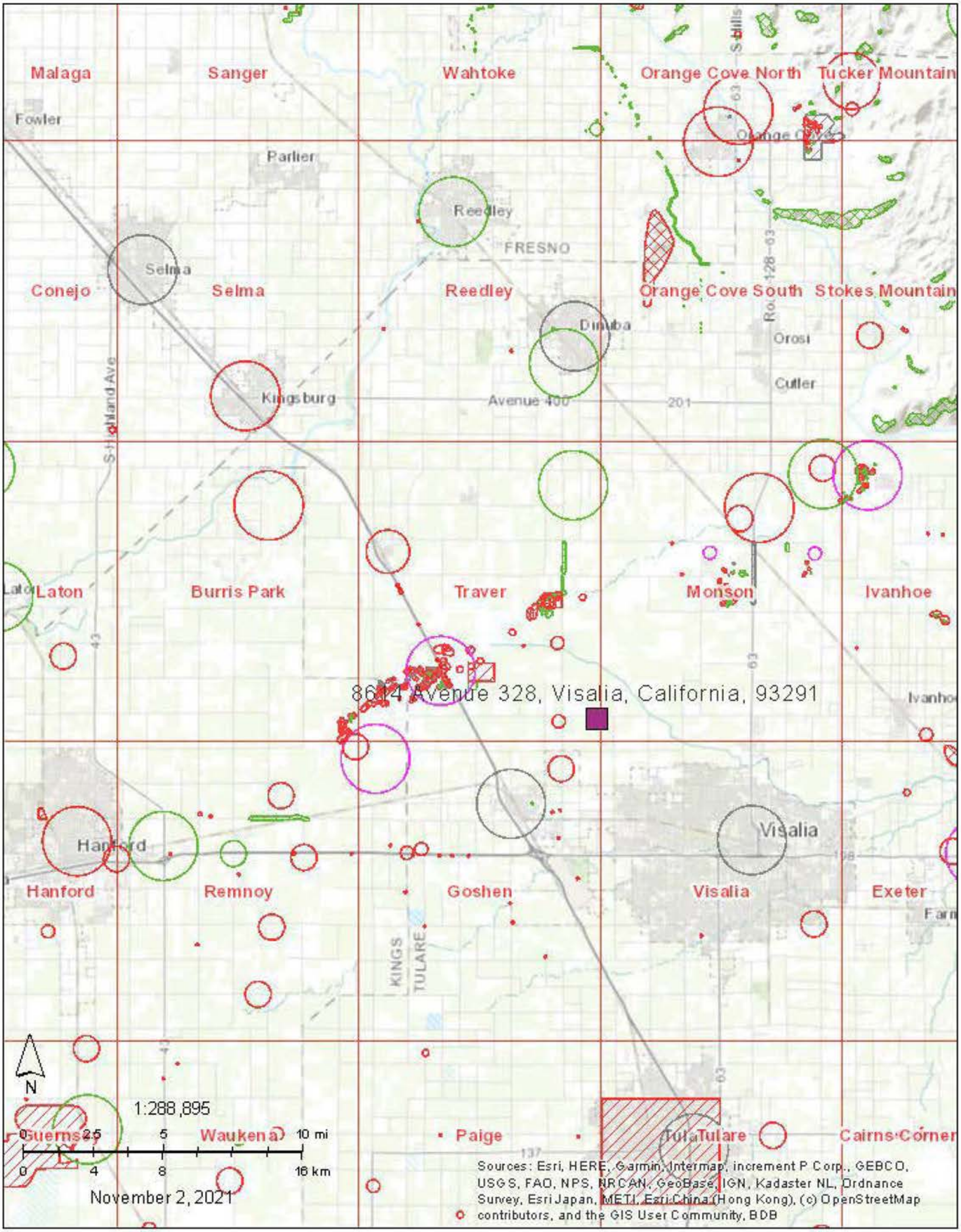
Buteo swainsoni	Swainson's hawk	ABNKC19070	1784	86226	87268	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Fair	N	20170601	20170601	CALTRANS ROW	None	Threatened	G5	S3			BLM_S; IUCN_LC; USFWS_BCC	203	Birds
Linderiella occidentalis	California linderiella	ICBRA06010	492	B5572	118542	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Good	N	20160914	20160914	PVT	None	None	G2G3	S2S3			IUCN_NT	202	Crustaceans
Lasthenia chrysantha	alkali-sink goldfields	PDAST5L030	22	25124	118554	3611934	Goshen	TUL	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	N	19140326	19140326	UNKNOWN	None	None	G2	S2	1B.1			804	Dicots
Lasthenia chrysantha	alkali-sink goldfields	PDAST5L030	23	B3004	118558	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Unknown	N	20170331	20170331	PVT	None	None	G2	S2	1B.1			802	Dicots
Atriplex cordulata var. erecticaulis	Earlimart orache	PDCHE042V0	16	47221	47221	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Good	N	20170907	20170906	PVT	None	None	G3T1	S1	1B.2			102	Dicots
Atriplex cordulata var. erecticaulis	Earlimart orache	PDCHE042V0	23	B5726	118719	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Good	N	20170907	20170907	PVT	None	None	G3T1	S1	1B.2			102	Dicots

Attachment D

Species Recorded within the 9-Quadrangle Project Area

D1. Project 9-Quad Species Map

9-Quad Species Map of Project Area



Author: Rkashiwa@tularecounty.ca.gov
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D2. Project 9-Quad RareFind Species List

RareFind Selection **54 results found.**

Scientific Name	Common Name	Element Code	Occ Number	MAPNDX	EONDX	Key Quad Code	Key Quad Name	Key County Code	Accuracy	Presence	Occ Type	Occ Rank	Sensitive	Site Date	Elm Date	Owner Management	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank	CDFW Status	Other Status	Symbology	Taxon Group	Shape	Shape.STArea()	Shape.STLength()
Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	113	32752	18594	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Good	N	19930109	19930109	PVT	Threatened	None	G3	S3			IUCN_VU	202	Crustaceans	null	91792.1328125	1867.9623459518814
Valley Sacaton Grassland	Valley Sacaton Grassland	CTT42120CA	12	15270	8665	3611934	Goshen	KNG	1 mile	Presumed Extant	Natural/Native occurrence	Poor	N	19850312	19850312	PVT	None	None	G1	S1.1				304	Herbaceous	null	12345580.58203125	12471.378739267122
Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	129	40395	35402	3611944	Traver	TUL	1/10 mile	Presumed Extant	Natural/Native occurrence	Fair	N	19980410	19980410	PVT	Endangered	None	G4	S3S4			IUCN_EN	204	Crustaceans	null	109169.41796875	1171.747158268677
Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	110	32735	17486	3611944	Traver	TUL	80 meters	Presumed Extant	Natural/Native occurrence	Unknown	N	19920222	19920222	PVT-HARRELL	Threatened	None	G3	S3			IUCN_VU	201	Crustaceans	null	30906.68359375	624.0076499267981
Northern Claypan Vernal Pool	Northern Claypan Vernal Pool	CTT44120CA	10	15328	26434	3611944	Traver	TUL	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	N	1983XXXX	1983XXXX	UNKNOWN	None	None	G1	S1.1				304	Herbaceous	null	12356597.9921875	12476.942375858393
Athene cunicularia	burrowing owl	ABNSB10010	310	40396	35403	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Fair	N	19980410	19980410	PVT	None	None	G4	S3		SSC	BLM_S; IUCN_LC; USFWS_BCC	203	Birds	null	1590152.83984375	5141.445388521401
Vulpes macrotis mutica	San Joaquin kit fox	AMAJA03041	150	55307	55307	3611944	Traver	TUL	1/5 mile	Presumed Extant	Natural/Native occurrence	Fair	N	20030808	20030808	UNKNOWN	Endangered	Threatened	G4T2	S2				204	Mammals	null	436657.36328125	2343.0937230297995
Atriplex minuscula	lesser saltscale	PDCHE042M0	16	56419	56435	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Good	N	20000710	20000710	UNKNOWN	None	None	G2	S2	1B.1			102	Dicots	null	366754.2421875	3999.743699036232
Eumops perotis californicus	western mastiff bat	AMACD02011	91	66331	66424	3611944	Traver	TUL	3/5 mile	Presumed Extant	Natural/Native occurrence	Unknown	N	18990301	18990301	UNKNOWN	None	None	G4G5T4	S3S4		SSC	BLM_S; WBWG_H	204	Mammals	null	4863571.49609375	7818.594252822773
Vulpes macrotis mutica	San Joaquin kit fox	AMAJA03041	619	67378	67546	3611944	Traver	TUL	1/5 mile	Presumed Extant	Natural/Native occurrence	Unknown	N	1971XXXX	1971XXXX	UNKNOWN	Endangered	Threatened	G4T2	S2				204	Mammals	null	437021.08203125	2344.0692877372726
Vulpes macrotis mutica	San Joaquin kit fox	AMAJA03041	924	67807	67957	3611935	Remnoy	KNG	2/5 mile	Presumed Extant	Natural/Native occurrence	Unknown	N	197507XX	197507XX	UNKNOWN	Endangered	Threatened	G4T2	S2				204	Mammals	null	1747233.41796875	4686.272899371687
Atriplex minuscula	lesser saltscale	PDCHE042M0	15	56417	56433	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Fair	N	20020912	20020912	UNKNOWN	None	None	G2	S2	1B.1			102	Dicots	null	8770.51953125	581.4065424342
Atriplex depressa	brittlescale	PDCHE042L0	76	82784	83810	3611944	Traver	TUL	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	N	19680513	19680513	UNKNOWN	None	None	G2	S2	1B.2			104	Dicots	null	12459538.9921875	12514.168808491317
Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	293	86221	87258	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Good	N	20110524	20110524	PVT	Endangered	None	G4	S3S4			IUCN_EN	203	Crustaceans	null	298496.875	2188.497538655619
Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	294	86222	87264	3611944	Traver	TUL	1/10 mile	Presumed Extant	Natural/Native occurrence	Good	N	20110516	20110516	PVT	Endangered	None	G4	S3S4			IUCN_EN	204	Crustaceans	null	109209.65625	1171.850497761718
Buteo swainsoni	Swainson's hawk	ABNKC19070	1782	86224	87266	3611944	Traver	TUL	80 meters	Presumed Extant	Natural/Native occurrence	Good	N	20110422	20110422	PVT	None	Threatened	G5	S3			BLM_S; IUCN_LC; USFWS_BCC	201	Birds	null	30980.65625	624.5958425960569
Buteo swainsoni	Swainson's hawk	ABNKC19070	1783	86225	87267	3611944	Traver	TUL	1/10 mile	Presumed Extant	Natural/Native occurrence	Good	N	20080716	20080716	PVT	None	Threatened	G5	S3			BLM_S; IUCN_LC; USFWS_BCC	204	Birds	null	109294.55859375	1172.28248977925
Spea hammondii	western spadefoot	AAABF02020	428	86230	87272	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Good	N	20110516	20110516	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	203	Amphibians	null	522257.7578125	2871.632628217038
Spea hammondii	western spadefoot	AAABF02020	429	86232	87274	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Good	N	20110516	20110516	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	203	Amphibians	null	195595.140625	1634.5915622689608
Spea hammondii	western spadefoot	AAABF02020	431	86234	87276	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Good	N	20110516	20110516	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	203	Amphibians	null	147229.7578125	1375.9337868178377
Spea hammondii	western spadefoot	AAABF02020	432	86235	87277	3611944	Traver	TUL	1/10 mile	Presumed Extant	Natural/Native occurrence	Good	N	20110516	20110516	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	204	Amphibians	null	109200.53125	1171.8181533789907
Spea hammondii	western spadefoot	AAABF02020	433	86236	87278	3611944	Traver	TUL	1/10 mile	Presumed Extant	Natural/Native occurrence	Good	N	20110524	20110524	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	204	Amphibians	null	109254.0625	1172.065324886247
Spea hammondii	western spadefoot	AAABF02020	434	86237	87279	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Good	N	20110524	20110524	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	203	Amphibians	null	232828.41015625	1836.1883250974815
Lanius ludovicianus	loggerhead shrike	ABPBR01030	106	86216	87281	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Good	N	19920629	19920629	PVT	None	None	G4	S4		SSC	IUCN_LC; USFWS_BCC	203	Birds	null	827090.51171875	3509.945815872903
Spea hammondii	western spadefoot	AAABF02020	430	86233	87275	3611944	Traver	TUL	1/10 mile	Presumed Extant	Natural/Native occurrence	Good	N	20110524	20110524	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	204	Amphibians	null	109210.73046875	1171.8328387087263
Buteo swainsoni	Swainson's hawk	ABNKC19070	2510	90287	91320	3611944	Traver	TUL	80 meters	Presumed Extant	Natural/Native occurrence	Fair	N	201208XX	201208XX	CALTRANS	None	Threatened	G5	S3			BLM_S; IUCN_LC; USFWS_BCC	201	Birds	null	30987.6640625	624.6664470647722
Athene cunicularia	burrowing owl	ABNSB10010	2004	A4870	106568	3611944	Traver	TUL	80 meters	Presumed Extant	Natural/Native occurrence	Unknown	N	20170301	20170301	PVT	None	None	G4	S3		SSC	BLM_S; IUCN_LC; USFWS_BCC	201	Birds	null	30994.875	624.6390719091119

Athene cunicularia	burrowing owl	ABNSB10010	2005	A4872	106570	3611944	Traver	TUL	80 meters	Presumed Extant	Natural/Native occurrence	Unknown	N	20170301	20170301	PVT	None	None	G4	S3		SSC	BLM_S; IUCN_LC; USFWS_BCC	201	Birds	null	30917.796875	624.4814075849283
Athene cunicularia	burrowing owl	ABNSB10010	396	44977	44977	3611944	Traver	KNG	specific area	Presumed Extant	Natural/Native occurrence	Good	N	20170301	20170301	PVT	None	None	G4	S3		SSC	BLM_S; IUCN_LC; USFWS_BCC	202	Birds	null	210281.375	3900.717053068681
Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	911	A6723	108492	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Excellent	N	20170301	20170301	PVT	Threatened	None	G3	S3			IUCN_VU	202	Crustaceans	null	536327.38671875	8944.793656545124
Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	912	A6724	108493	3611944	Traver	KNG	80 meters	Presumed Extant	Natural/Native occurrence	Excellent	N	20170301	20170301	PVT	Threatened	None	G3	S3			IUCN_VU	201	Crustaceans	null	30891.390625	624.0569319017571
Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	207	41571	41571	3611944	Traver	KNG	specific area	Presumed Extant	Natural/Native occurrence	Fair	N	20170301	20170301	PVT	Threatened	None	G3	S3			IUCN_VU	202	Crustaceans	null	321280.43359375	5023.552107431264
Spea hammondii	western spadefoot	AAABF02020	472	A6746	108515	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Excellent	N	20170301	20170301	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	202	Amphibians	null	145181.9140625	2341.905170810421
Spea hammondii	western spadefoot	AAABF02020	473	A6747	108517	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Excellent	N	20170301	20170301	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	202	Amphibians	null	60934.36328125	1077.9189982092466
Spea hammondii	western spadefoot	AAABF02020	474	A6749	108518	3611944	Traver	KNG	specific area	Presumed Extant	Natural/Native occurrence	Excellent	N	20170301	20170301	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	202	Amphibians	null	61878.58984375	1248.6308574764757
Spea hammondii	western spadefoot	AAABF02020	475	A6750	108519	3611944	Traver	KNG	specific area	Presumed Extant	Natural/Native occurrence	Excellent	N	20170301	20170301	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	202	Amphibians	null	61899.63671875	1248.6998837357753
Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	140	41572	41572	3611944	Traver	KNG	specific area	Presumed Extant	Natural/Native occurrence	Fair	N	20170301	20170301	PVT	Endangered	None	G4	S3S4			IUCN_EN	202	Crustaceans	null	694907.94921875	9235.69704233519
Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	295	86223	87265	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Good	N	20170301	20170301	PVT	Endangered	None	G4	S3S4			IUCN_EN	202	Crustaceans	null	958077.43359375	10089.231111364386
Atriplex minuscula	lesser saltscale	PDCHE042M0	52	B0734	112603	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Excellent	N	20160802	20160802	PVT	None	None	G2	S2	1B.1			103	Dicots	null	244867.53515625	1979.3721993854442
Atriplex minuscula	lesser saltscale	PDCHE042M0	53	B0735	112604	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Excellent	N	20160802	20160802	PVT	None	None	G2	S2	1B.1			102	Dicots	null	149573.75	1707.3887048379174
Atriplex minuscula	lesser saltscale	PDCHE042M0	54	B0736	112605	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Excellent	N	20160802	20160802	PVT	None	None	G2	S2	1B.1			102	Dicots	null	103642.25390625	2255.181128748543
Spea hammondii	western spadefoot	AAABF02020	435	86238	87280	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Good	N	20180409	20180409	PVT	None	None	G2G3	S3		SSC	BLM_S; IUCN_NT	203	Amphibians	null	578096.3984375	4824.945069151847
Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	292	B2907	87257	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Good	N	20180409	20180409	PVT-WESTERVELT ECOLOGICAL SVCS	Endangered	None	G4	S3S4			IUCN_EN	203	Crustaceans	null	946964.03125	3841.6539825782042
Puccinellia simplex	California alkali grass	PMPOA53110	76	B3004	114929	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Good	N	20170331	20170331	PVT	None	None	G3	S2	1B.2		BLM_S	802	Monocots	null	1081724.51171875	19659.19859661563
Puccinellia simplex	California alkali grass	PMPOA53110	77	B3005	114931	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Good	N	20170405	20170405	PVT	None	None	G3	S2	1B.2		BLM_S	102	Monocots	null	147813.56640625	3875.041611410951
Buteo swainsoni	Swainson's hawk	ABNKC19070	2794	B3405	115320	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Fair	N	20170614	20170614	CALTRANS	None	Threatened	G5	S3			BLM_S; IUCN_LC; USFWS_BCC	202	Birds	null	88679.43359375	1590.2185901964385
Buteo swainsoni	Swainson's hawk	ABNKC19070	2765	B3288	115203	3611944	Traver	TUL	1/5 mile	Presumed Extant	Natural/Native occurrence	Good	N	20170405	20170405	PVT-WESTERVELT ECOLOGICAL SVCS	None	Threatened	G5	S3			BLM_S; IUCN_LC; USFWS_BCC	204	Birds	null	437149.7265625	2344.6150013681595
Buteo swainsoni	Swainson's hawk	ABNKC19070	1784	86226	87268	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Fair	N	20170601	20170601	CALTRANS ROW	None	Threatened	G5	S3			BLM_S; IUCN_LC; USFWS_BCC	203	Birds	null	255865.88671875	2810.9169775770197
Linderiella occidentalis	California linderiella	ICBRA06010	492	B5572	118542	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Good	N	20160914	20160914	PVT	None	None	G2G3	S2S3			IUCN_NT	202	Crustaceans	null	1296810.77734375	12411.27622297009
Linderiella occidentalis	California linderiella	ICBRA06010	493	B5573	118543	3611944	Traver	KNG	specific area	Presumed Extant	Natural/Native occurrence	Good	N	20160914	20160914	PVT	None	None	G2G3	S2S3			IUCN_NT	202	Crustaceans	null	116041.27734375	1284.090357081224
Linderiella occidentalis	California linderiella	ICBRA06010	494	B5574	118544	3611944	Traver	KNG	specific area	Presumed Extant	Natural/Native occurrence	Good	N	20160914	20160914	PVT	None	None	G2G3	S2S3			IUCN_NT	202	Crustaceans	null	340505.4609375	3259.394208879006
Lasthenia chrysantha	alkali-sink goldfields	PDAST5L030	23	B3004	118558	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Unknown	N	20170331	20170331	PVT	None	None	G2	S2	1B.1			802	Dicots	null	1081724.51171875	19659.19859661563
Atriplex cordulata var. erecticaulis	Earlimart orache	PDCHE042V0	16	47221	47221	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Good	N	20170907	20170906	PVT	None	None	G3T1	S1	1B.2			102	Dicots	null	236002.82421875	4891.817221702273
Atriplex cordulata var. erecticaulis	Earlimart orache	PDCHE042V0	23	B5726	118719	3611944	Traver	TUL	specific area	Presumed Extant	Natural/Native occurrence	Good	N	20170907	20170907	PVT	None	None	G3T1	S1	1B.2			102	Dicots	null	186383.359375	4325.511282876583

D3. Project 9-Quad BIOS Species List

Element_Type	Scientific_Name	Common_Name	Federal_Status	State_Status	CDFW_Status	CA_Rare_Plant_Rank	Quad_Name
Animals - Amphibians	Ambystoma californiense pop. 1	California tiger salamander - central California DPS	Threatened	Threatened	WL	-	BURRIS PARK
Animals - Amphibians	Ambystoma californiense pop. 1	California tiger salamander - central California DPS	Threatened	Threatened	WL	-	MONSON
Animals - Amphibians	Ambystoma californiense pop. 1	California tiger salamander - central California DPS	Threatened	Threatened	WL	-	ORANGE COVE SOUTH
Animals - Amphibians	Lithobates pipiens	northern leopard frog	None	None	SSC	-	MONSON
Animals - Amphibians	Rana draytonii	California red-legged frog	Threatened	None	SSC	-	TRAVER
Animals - Amphibians	Spea hammondii	western spadefoot	None	None	SSC	-	BURRIS PARK
Animals - Amphibians	Spea hammondii	western spadefoot	None	None	SSC	-	GOSHEN
Animals - Amphibians	Spea hammondii	western spadefoot	None	None	SSC	-	MONSON
Animals - Amphibians	Spea hammondii	western spadefoot	None	None	SSC	-	ORANGE COVE SOUTH
Animals - Amphibians	Spea hammondii	western spadefoot	None	None	SSC	-	TRAVER
Animals - Arachnids	Talanites moodyae	Moody's gnaphosid spider	None	None	-	-	ORANGE COVE SOUTH
Animals - Birds	Accipiter striatus	sharp-shinned hawk	None	None	WL	-	VISALIA
Animals - Birds	Ardea herodias	great blue heron	None	None	-	-	REEDLEY
Animals - Birds	Athene cunicularia	burrowing owl	None	None	SSC	-	BURRIS PARK
Animals - Birds	Athene cunicularia	burrowing owl	None	None	SSC	-	GOSHEN
Animals - Birds	Athene cunicularia	burrowing owl	None	None	SSC	-	MONSON
Animals - Birds	Athene cunicularia	burrowing owl	None	None	SSC	-	ORANGE COVE SOUTH
Animals - Birds	Athene cunicularia	burrowing owl	None	None	SSC	-	REEDLEY
Animals - Birds	Athene cunicularia	burrowing owl	None	None	SSC	-	SELMA
Animals - Birds	Athene cunicularia	burrowing owl	None	None	SSC	-	TRAVER
Animals - Birds	Buteo regalis	ferruginous hawk	None	None	WL	-	MONSON
Animals - Birds	Buteo swainsoni	Swainson's hawk	None	Threatened	-	-	BURRIS PARK
Animals - Birds	Buteo swainsoni	Swainson's hawk	None	Threatened	-	-	GOSHEN
Animals - Birds	Buteo swainsoni	Swainson's hawk	None	Threatened	-	-	REMNOY
Animals - Birds	Buteo swainsoni	Swainson's hawk	None	Threatened	-	-	SELMA
Animals - Birds	Buteo swainsoni	Swainson's hawk	None	Threatened	-	-	TRAVER
Animals - Birds	Buteo swainsoni	Swainson's hawk	None	Threatened	-	-	VISALIA
Animals - Birds	Charadrius montanus	mountain plover	None	None	SSC	-	REMNOY
Animals - Birds	Coccyzus americanus occidentalis	western yellow-billed cuckoo	Threatened	Endangered	-	-	SELMA
Animals - Birds	Coccyzus americanus occidentalis	western yellow-billed cuckoo	Threatened	Endangered	-	-	VISALIA
Animals - Birds	Empidonax traillii extimus	southwestern willow flycatcher	Endangered	Endangered	-	-	VISALIA
Animals - Birds	Lanius ludovicianus	loggerhead shrike	None	None	SSC	-	TRAVER
Animals - Birds	Pandion haliaetus	osprey	None	None	WL	-	REMNOY
Animals - Birds	Pica nuttalli	yellow-billed magpie	None	None	-	-	VISALIA
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	Threatened	None	-	-	BURRIS PARK
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	Threatened	None	-	-	GOSHEN
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	Threatened	None	-	-	MONSON
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	Threatened	None	-	-	ORANGE COVE SOUTH
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	Threatened	None	-	-	REMNOY
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	Threatened	None	-	-	TRAVER
Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	Endangered	None	-	-	BURRIS PARK
Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	Endangered	None	-	-	MONSON
Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	Endangered	None	-	-	ORANGE COVE SOUTH
Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	Endangered	None	-	-	TRAVER
Animals - Crustaceans	Linderiella occidentalis	California linderiella	None	None	-	-	BURRIS PARK
Animals - Crustaceans	Linderiella occidentalis	California linderiella	None	None	-	-	ORANGE COVE SOUTH
Animals - Crustaceans	Linderiella occidentalis	California linderiella	None	None	-	-	TRAVER
Animals - Insects	Bombus crotchii	Crotch bumble bee	None	Candidate Endangered	-	-	SELMA
Animals - Insects	Bombus crotchii	Crotch bumble bee	None	Candidate Endangered	-	-	VISALIA
Animals - Insects	Bombus morrisoni	Morrison bumble bee	None	None	-	-	ORANGE COVE SOUTH
Animals - Insects	Bombus morrisoni	Morrison bumble bee	None	None	-	-	REEDLEY
Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	Threatened	None	-	-	REEDLEY
Animals - Insects	Lytta hoppingi	Hopping's blister beetle	None	None	-	-	VISALIA
Animals - Insects	Lytta molesta	molestan blister beetle	None	None	-	-	ORANGE COVE SOUTH
Animals - Mammals	Antrozous pallidus	pallid bat	None	None	SSC	-	REEDLEY
Animals - Mammals	Eumops perotis californicus	western mastiff bat	None	None	SSC	-	SELMA
Animals - Mammals	Eumops perotis californicus	western mastiff bat	None	None	SSC	-	TRAVER
Animals - Mammals	Eumops perotis californicus	western mastiff bat	None	None	SSC	-	VISALIA
Animals - Mammals	Lasiurus cinereus	hoary bat	None	None	-	-	ORANGE COVE SOUTH
Animals - Mammals	Lasiurus cinereus	hoary bat	None	None	-	-	REEDLEY
Animals - Mammals	Mustela frenata xanthogenys	San Joaquin long-tailed weasel	None	None	-	-	GOSHEN
Animals - Mammals	Mustela frenata xanthogenys	San Joaquin long-tailed weasel	None	None	-	-	MONSON

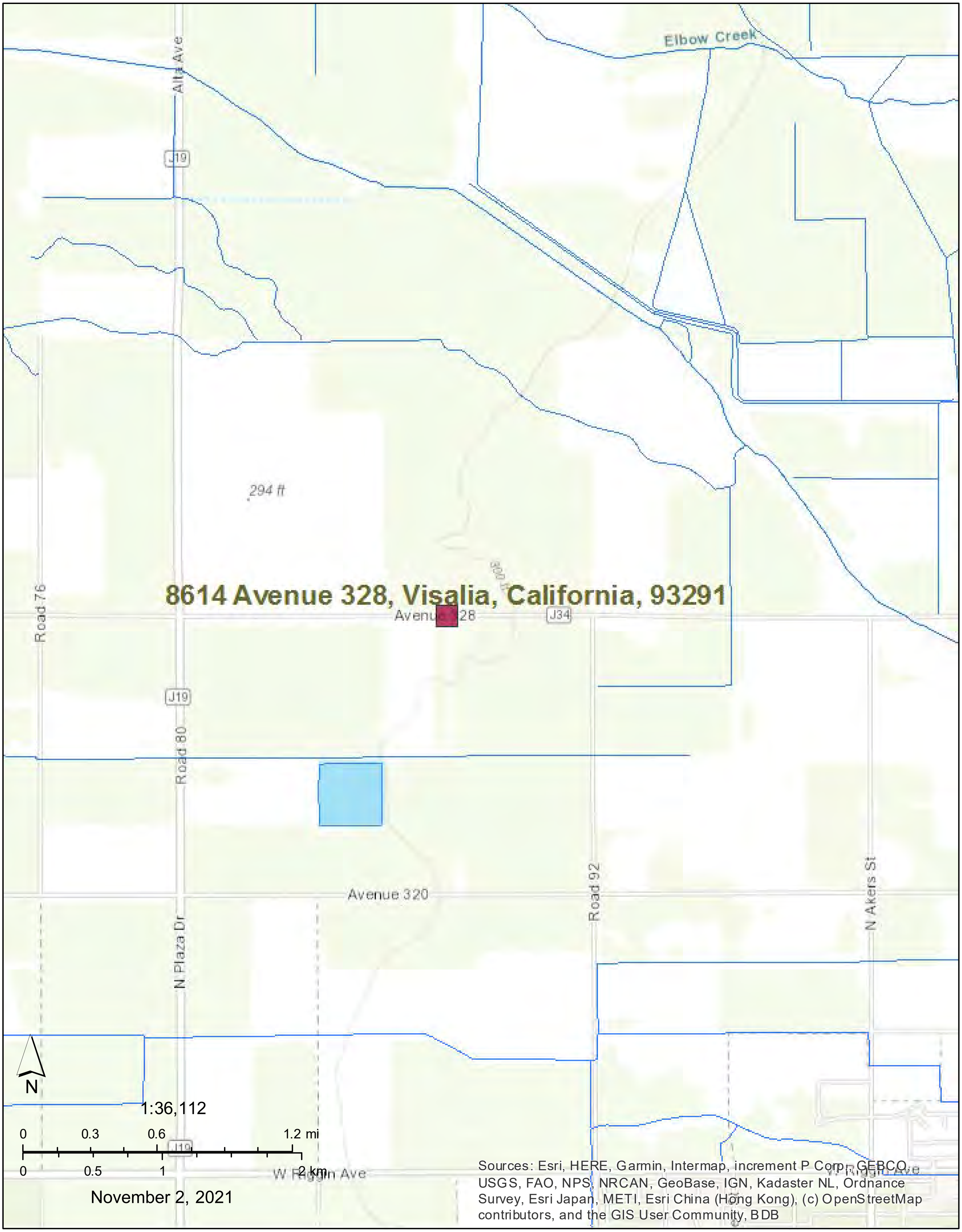
Animals - Mammals	Mustela frenata xanthogenys	San Joaquin long-tailed weasel	None	None	-	-	REEDLEY
Animals - Mammals	Mustela frenata xanthogenys	San Joaquin long-tailed weasel	None	None	-	-	REMNOY
Animals - Mammals	Mustela frenata xanthogenys	San Joaquin long-tailed weasel	None	None	-	-	SELMA
Animals - Mammals	Myotis yumanensis	Yuma myotis	None	None	-	-	REEDLEY
Animals - Mammals	Taxidea taxus	American badger	None	None	SSC	-	VISALIA
Animals - Mammals	Vulpes macrotis mutica	San Joaquin kit fox	Endangered	Threatened	-	-	BURRIS PARK
Animals - Mammals	Vulpes macrotis mutica	San Joaquin kit fox	Endangered	Threatened	-	-	GOSHEN
Animals - Mammals	Vulpes macrotis mutica	San Joaquin kit fox	Endangered	Threatened	-	-	MONSON
Animals - Mammals	Vulpes macrotis mutica	San Joaquin kit fox	Endangered	Threatened	-	-	ORANGE COVE SOUTH
Animals - Mammals	Vulpes macrotis mutica	San Joaquin kit fox	Endangered	Threatened	-	-	REMNOY
Animals - Mammals	Vulpes macrotis mutica	San Joaquin kit fox	Endangered	Threatened	-	-	TRAVER
Animals - Mammals	Vulpes macrotis mutica	San Joaquin kit fox	Endangered	Threatened	-	-	VISALIA
Animals - Reptiles	Anniella pulchra	Northern California legless lizard	None	None	SSC	-	VISALIA
Animals - Reptiles	Emys marmorata	western pond turtle	None	None	SSC	-	REEDLEY
Animals - Reptiles	Emys marmorata	western pond turtle	None	None	SSC	-	VISALIA
Animals - Reptiles	Phrynosoma blainvillii	coast horned lizard	None	None	SSC	-	GOSHEN
Animals - Reptiles	Phrynosoma blainvillii	coast horned lizard	None	None	SSC	-	VISALIA
Community - Terrestrial	Northern Claypan Vernal Pool	Northern Claypan Vernal Pool	None	None	-	-	TRAVER
Community - Terrestrial	Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	None	None	-	-	MONSON
Community - Terrestrial	Valley Sacaton Grassland	Valley Sacaton Grassland	None	None	-	-	BURRIS PARK
Community - Terrestrial	Valley Sacaton Grassland	Valley Sacaton Grassland	None	None	-	-	GOSHEN
Community - Terrestrial	Valley Sacaton Grassland	Valley Sacaton Grassland	None	None	-	-	REMNOY
Community - Terrestrial	Valley Sacaton Grassland	Valley Sacaton Grassland	None	None	-	-	TRAVER
Plants - Vascular	Amaranthus watsonii	Watson's amaranth	None	None	-	4.3	TRAVER
Plants - Vascular	Atriplex cordulata var. cordulata	heartscale	None	None	-	1B.2	BURRIS PARK
Plants - Vascular	Atriplex cordulata var. cordulata	heartscale	None	None	-	1B.2	GOSHEN
Plants - Vascular	Atriplex cordulata var. cordulata	heartscale	None	None	-	1B.2	TRAVER
Plants - Vascular	Atriplex cordulata var. erecticaulis	Earlimart orache	None	None	-	1B.2	TRAVER
Plants - Vascular	Atriplex depressa	brittlescale	None	None	-	1B.2	MONSON
Plants - Vascular	Atriplex depressa	brittlescale	None	None	-	1B.2	TRAVER
Plants - Vascular	Atriplex depressa	brittlescale	None	None	-	1B.2	VISALIA
Plants - Vascular	Atriplex minuscula	lesser saltscale	None	None	-	1B.1	BURRIS PARK
Plants - Vascular	Atriplex minuscula	lesser saltscale	None	None	-	1B.1	GOSHEN
Plants - Vascular	Atriplex minuscula	lesser saltscale	None	None	-	1B.1	TRAVER
Plants - Vascular	Atriplex subtilis	subtle orache	None	None	-	1B.2	GOSHEN
Plants - Vascular	Atriplex subtilis	subtle orache	None	None	-	1B.2	TRAVER
Plants - Vascular	Delphinium hansenii ssp. ewanianum	Ewan's larkspur	None	None	-	4.2	MONSON
Plants - Vascular	Delphinium recurvatum	recurved larkspur	None	None	-	1B.2	MONSON
Plants - Vascular	Eryngium spinosepalum	spiny-sepaled button-celery	None	None	-	1B.2	MONSON
Plants - Vascular	Eryngium spinosepalum	spiny-sepaled button-celery	None	None	-	1B.2	ORANGE COVE SOUTH
Plants - Vascular	Euphorbia hooveri	Hoover's spurge	Threatened	None	-	1B.2	MONSON
Plants - Vascular	Helianthus winteri	Winter's sunflower	None	None	-	1B.2	ORANGE COVE SOUTH
Plants - Vascular	Hordeum intercedens	vernal barley	None	None	-	3.2	MONSON
Plants - Vascular	Imperata brevifolia	California satintail	None	None	-	2B.1	REEDLEY
Plants - Vascular	Imperata brevifolia	California satintail	None	None	-	2B.1	VISALIA
Plants - Vascular	Lasthenia chrysantha	alkali-sink goldfields	None	None	-	1B.1	GOSHEN
Plants - Vascular	Lasthenia chrysantha	alkali-sink goldfields	None	None	-	1B.1	MONSON
Plants - Vascular	Lasthenia chrysantha	alkali-sink goldfields	None	None	-	1B.1	REMNOY
Plants - Vascular	Lasthenia chrysantha	alkali-sink goldfields	None	None	-	1B.1	TRAVER
Plants - Vascular	Lasthenia glabrata ssp. coulteri	Coulter's goldfields	None	None	-	1B.1	MONSON
Plants - Vascular	Lasthenia glabrata ssp. coulteri	Coulter's goldfields	None	None	-	1B.1	ORANGE COVE SOUTH
Plants - Vascular	Orcuttia inaequalis	San Joaquin Valley Orcutt grass	Threatened	Endangered	-	1B.1	MONSON
Plants - Vascular	Pseudobahia peirsonii	San Joaquin adobe sunburst	Threatened	Endangered	-	1B.1	ORANGE COVE SOUTH
Plants - Vascular	Pseudobahia peirsonii	San Joaquin adobe sunburst	Threatened	Endangered	-	1B.1	REEDLEY
Plants - Vascular	Puccinellia simplex	California alkali grass	None	None	-	1B.2	GOSHEN
Plants - Vascular	Puccinellia simplex	California alkali grass	None	None	-	1B.2	MONSON
Plants - Vascular	Puccinellia simplex	California alkali grass	None	None	-	1B.2	REMNOY
Plants - Vascular	Puccinellia simplex	California alkali grass	None	None	-	1B.2	TRAVER
Plants - Vascular	Sagittaria sanfordii	Sanford's arrowhead	None	None	-	1B.2	MONSON
Plants - Vascular	Sagittaria sanfordii	Sanford's arrowhead	None	None	-	1B.2	ORANGE COVE SOUTH
Plants - Vascular	Sagittaria sanfordii	Sanford's arrowhead	None	None	-	1B.2	REEDLEY

Attachment E

State and Federal Waters and Wetlands

E1. CNDDB State Waters Map

State Waters in Project Vicinity



Author: jwillis@tularecounty.ca.gov
Printed from http://bios.dfg.ca.gov

E2. USGS National Water Information System (NWIS) Map

USGS science for a changing world

National Water Information System: Mapper

USGS Home
Contact USGS
Search USGS

Help Info

Sites Map

Search

Search by Street Address:
8614 Avenue 328, Visalia,

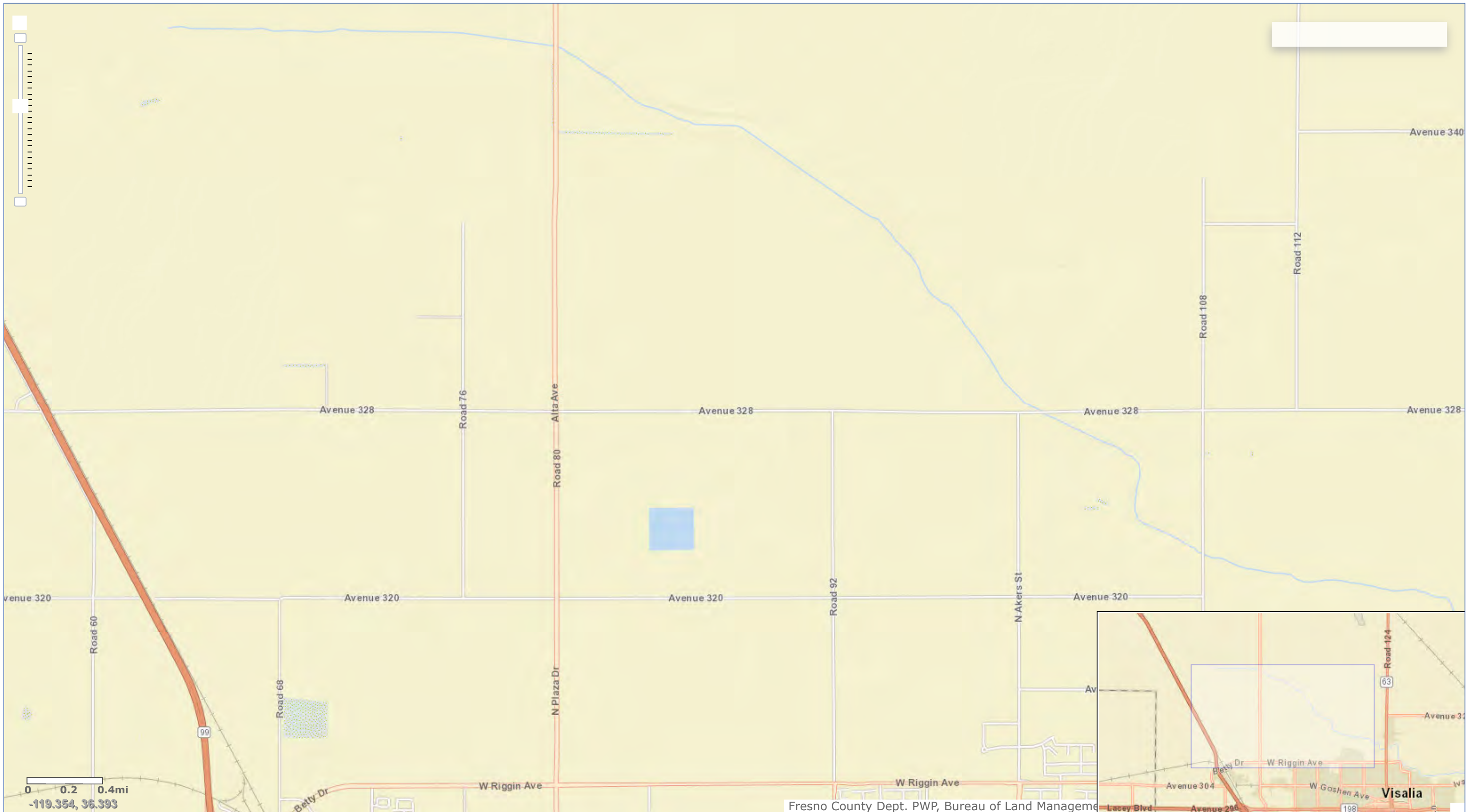
Search by Place Name:
Enter Placename

Search by Site Number(s):
Enter Site Number(s)

Search by State/Territory:
Select an Area

Search by Watershed Region:
Select a Region

Surface-Water Sites
Groundwater Sites
Springs
Atmospheric Sites
Other Sites

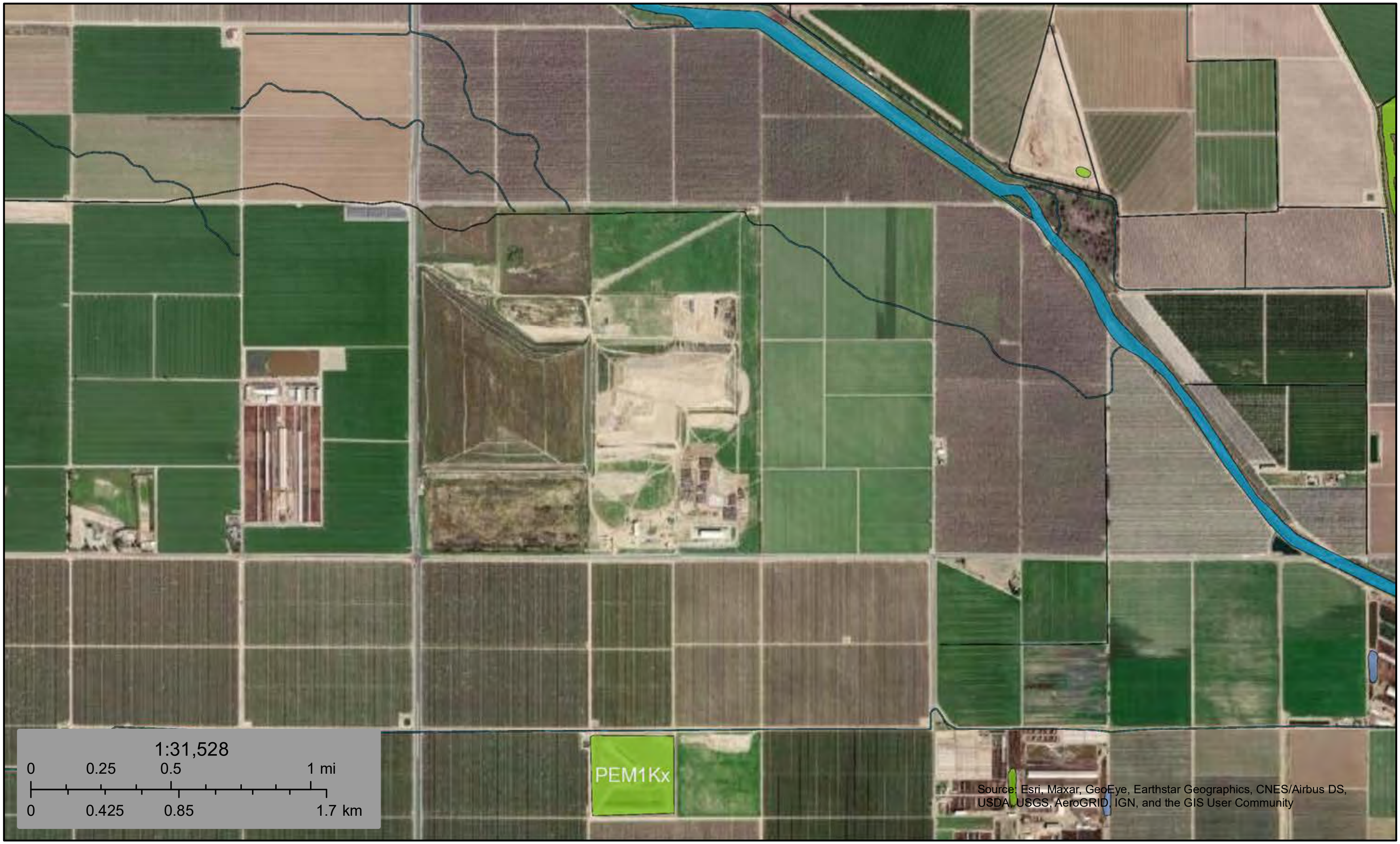


Site Information

E3. USFW National Wetland Inventory (NWI) Map

U.S. Fish and Wildlife Service
National Wetlands Inventory

Visalia Landfill Vicinity



October 25, 2021

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

APPENDIX “C”

CULTURAL AND TRIBAL CULTURAL RESOURSES

California Historical Records Information System (CHRIS) Search

California
Historical
Resources
Information
System

Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

To: Hector Guerra
Tulare County Resource Management Agency
5961 South Mooney Blvd.
Visalia, CA 93277

Record Search 21-074

Date: March 2, 2021

Re: Visalia Landfill Compost and Biomass

County: Tulare

Map(s): Traver 7.5'

CULTURAL RESOURCES RECORDS SEARCH

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

The following are the results of a search of the cultural resource files at the Southern San Joaquin Valley Information Center. These files include known and recorded cultural resources sites, inventory and excavation reports filed with this office, and resources listed on the National Register of Historic Places, the OHP Built Environment Resources Directory, California State Historical Landmarks, California Register of Historical Resources, California Inventory of Historic Resources, and California Points of Historical Interest. Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the OHP are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area.

PRIOR CULTURAL RESOURCE STUDIES CONDUCTED WITHIN THE PROJECT AREA AND THE ONE-HALF MILE RADIUS

According to the information in our files, there have been no previous cultural resource studies conducted within the project area. There have been three cultural resource studies conducted within a one-half mile radius, TU-00267, TU-01069, and TU-01149.

KNOWN/RECORDED CULTURAL RESOURCES WITHIN THE PROJECT AREA AND THE ONE-HALF MILE RADIUS

There are no recorded resources within the project area. There are two recorded resources within the one-half mile radius, P-54-003600 and P-54-003601. These resources are both unnamed ditches.

There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, or the California State Historic Landmarks.

COMMENTS AND RECOMMENDATIONS

We understand this project includes the development of a Compost and Biomass Conversion Facility within the boundaries of the existing Visalia Landfill. Because this project will take place within the boundaries of the existing landfill, no further cultural resource investigation is recommended at this time. However, if cultural resources are unearthed during ground disturbance activities, all work must halt in the area of the find and a qualified, professional consultant should be called out to assess the findings and make the appropriate mitigation recommendations. A list of qualified consultants can be found at www.chrisinfo.org.

We also recommend that you contact the Native American Heritage Commission in Sacramento. They will provide you with a current list of Native American individuals/organizations that can assist you with information regarding cultural resources that may not be included in the CHRIS Inventory and that may be of concern to the Native groups in the area. The Commission can consult their "Sacred Lands Inventory" file to determine what sacred resources, if any, exist within this project area and the way in which these resources might be managed. Finally, please consult with the lead agency on this project to determine if any other cultural resource investigation is required. If you need any additional information or have any questions or concerns, please contact our office at (661) 654-2289.

By:

Digitally signed by Celeste M. Thomson
Date: 2021.03.02 09:46:47 -08'00'

Celeste M. Thomson, Coordinator **Date**: March 2, 2021

Please note that invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Tribal Consultation Tracking Table

Tribal Consultation Notice

VISALIA LANDFILL COMPOST AND BIOMASS CONVERSION FACILITY (SCH# 2021020054)

TRIBE CONTACTED	REQUEST TYPE			ITEMS & DOCUMENTS SUBMITTED					DELIVERY METHOD			CONSULTATION PERIOD		CONSULTATION / ACTIONS
	AB 52	SB 18	Sec 106	Map	Project Description	SLF Search Results	CHRIS Results	Other	E-mail	FedEx	Certified US Mail	Return Receipt	Period Ends	Summary
SACRED LAND FILE (SLF) REQUEST														
Native American Heritage Commission NAHC@nahc.ca.gov	X			X	X			submittal form	2/19/21					3/11/21, J. Willis sent follow up email requesting status of the request
CONSULTATION REQUEST LETTERS														
Kern Valley Indian Community Robert Robinson, Co-Chairperson P.O. Box 1010 Lake Isabella, CA 93240 bbutterbredt@gmail.com	X			Included in the NOP				Cover Letter & NOP	2/19/21		2/19/21 7014015000 0115371275	3/8/21	4/7/21	2/19/21, AB 52 email sent; email delivery receipt 2/19/21, email sent regarding additional online scoping meeting
Kern Valley Indian Community Julie Turner, Secretary P. Box 1010 Lake Isabella, CA 93240 meindiangirl@sbcglobal.net	X			Included in the NOP				Cover Letter & NOP	2/19/21		2/19/21 7014015000 0115371282	3/8/21	4/7/21	2/19/21, AB 52 email sent; email delivery receipt 2/19/21, email sent regarding additional online scoping meeting
Kern Valley Indian Community Brandy Kendricks 30741 Foxridge Court Tehachapi, CA 93561 krazykendricks@hotmail.com	X			Included in the NOP				Cover Letter & NOP	2/19/21		2/19/21 7014015000 0115371299	2/27/21	3/29/21	2/19/21, AB 52 email sent; email delivery receipt 2/19/21, email sent regarding additional online scoping meeting
Santa Rosa Rancheria Tachi Yokut Tribe Leo Sisco, Chairperson P. O. Box 8 Lemoore, CA 93245 LSisco@tachi-yokut-nsn.gov	X			Included in the NOP				Cover Letter & NOP	2/19/21		2/19/21 7014015000 0115371305	2/24/21	3/26/21	2/19/21, AB 52 email sent; email delivery receipt 2/19/21, email sent regarding additional online scoping meeting
Santa Rosa Rancheria Tachi Yokut Tribe Robert Jeff, Vice-Chair P. O. Box 8 Lemoore, CA 93245 RGJeff@tachi-yokut-nsn.gov	X			Included in the NOP				Cover Letter & NOP	2/19/21		2/19/21 7014015000 0115371312	2/24/21	3/26/21	2/19/21, AB 52 email sent; email delivery receipt 2/19/21, email sent regarding additional online scoping meeting
Santa Rosa Rancheria Tachi Yokut Tribe Bianca Arias, Admin. Assistant. P. O. Box 8 Lemoore, CA 93245 BArias@tachi-yokut-nsn.gov	X			Included in the NOP				Cover Letter & NOP	2/19/21		2/19/21 7014015000 0115371329	2/24/21	3/26/21	2/19/21, AB 52 email sent; email delivery receipt 2/19/21, email sent regarding additional online scoping meeting

Tribal Consultation Notice VISALIA LANDFILL COMPOST AND BIOMASS CONVERSION FACILITY (SCH# 2021020054)														
TRIBE CONTACTED	**REQUEST TYPE**			**ITEMS & DOCUMENTS SUBMITTED**					**DELIVERY METHOD**			**CONSULTATION PERIOD**		**CONSULTATION / ACTIONS**
	AB 52	**SB 18**	**Sec 106**	**Map**	**Project Description**	**SLF Search Results**	**CHRIS Results**	**Other**	**E-mail**	**FedEx**	**Certified US Mail**	**Return Receipt**	**Period Ends**	**Summary**
Santa Rosa Rancheria Cultural Department Shana Powers, Director P. O. Box 8 Lemoore, CA 93245 SPowers@tachi-yokut-nsn.gov	X			Included in the NOP				Cover Letter & NOP	2/19/21		2/19/21 7014015000 0115371336	2/24/21	3/26/21	2/19/21, AB 52 email sent 2/19/21, email sent regarding additional online scoping meeting
Santa Rosa Rancheria Tachi Yokut Tribe Cultural Department Greg Cuara, Cultural Specialist P. O. Box 8 Lemoore, CA 93245 GCuara@tachi-yokut-nsn.gov	X			Included in the NOP				Cover Letter & NOP	2/19/21		2/19/21 7014015000 0115371343	2/24/21	3/26/21	2/19/21, AB 52 email sent; email delivery receipt 2/19/21, email sent regarding additional online scoping meeting
Santa Rosa Rancheria Tachi Yokut Tribe Cultural Department Samantha McCarty, Cultural Specialist P. O. Box 8 Lemoore, CA 93245 SMcCarty@tachi-yokut-nsn.gov	X			Included in the NOP				Cover Letter & NOP	2/19/21		2/19/21 7014015000 0115371350	2/24/21	3/26/21	2/19/21, AB 52 email sent; email delivery receipt 2/19/21, email sent regarding additional online scoping meeting 5/26/21, email from Ms. McCarty with concerns and requesting more information – consultation process to continue
Tubatulabals of Kern Valley Robert L. Gomez, Jr., Chairperson P.O. Box 226 Lake Isabella, CA 93240 rgomez@tubatulabal.org	X			Included in the NOP				Cover Letter & NOP	2/19/21		2/19/21 7014015000 0115371367			2/19/21, AB 52 email sent; email delivery receipt 2/19/21, email sent regarding additional online scoping meeting 2/19/21, email response from Mr. Gomez received stating the Tribe has no comments regarding this project.
Tule River Indian Tribe Neil Peyron, Chairperson P. O. Box 589 Porterville, CA 93258 neil.peyron@tulerivertribe-nsn.gov	X			Included in the NOP				Cover Letter & NOP	2/19/21		2/19/21 7014015000 0115371374	2/24/21	3/26/21	2/19/21, AB 52 email sent; email delivery receipt 2/19/21, email sent regarding additional online scoping meeting

Tribal Consultation Notice VISALIA LANDFILL COMPOST AND BIOMASS CONVERSION FACILITY (SCH# 2021020054)														
TRIBE CONTACTED	**REQUEST TYPE**			**ITEMS & DOCUMENTS SUBMITTED**					**DELIVERY METHOD**			**CONSULTATION PERIOD**		**CONSULTATION / ACTIONS**
	AB 52	**SB 18**	**Sec 106**	**Map**	**Project Description**	**SLF Search Results**	**CHRIS Results**	**Other**	**E-mail**	**FedEx**	**Certified US Mail**	**Return Receipt**	**Period Ends**	**Summary**
Tule River Indian Tribe Environmental Department Kerri Vera, Director P. O. Box 589 Porterville, CA 93258 tuleriverenv@yahoo.com	X			Included in the NOP				Cover Letter & NOP	2/19/21		2/19/21 7014015000 0115371381	2/24/21	3/26/21	2/19/21, AB 52 email sent; email delivery receipt 2/19/21, email sent regarding additional online scoping meeting
Tule River Indian Tribe Dept. of Environmental Protection Felix Christman, Archaeological Monitor P. O. Box 589 Porterville, CA 93258 tuleriverarchmon1@gmail.com	X			Included in the NOP				Cover Letter & NOP	2/19/21		2/19/21 7014015000 0115371398	2/24/21	3/26/21	2/19/21, AB 52 email sent; email delivery receipt 2/19/21, email sent regarding additional online scoping meeting
Wuksache Indian Tribe/ Eshom Valley Band Kenneth Woodrow, Chairperson 1179 Rock Haven Ct. Salinas, CA 93906 kwood8934@aol.com	X			Included in the NOP				Cover Letter & NOP	2/19/21		2/19/21 7014015000 0115371404	2/24/21	3/26/21	2/19/21, AB 52 email sent; email delivery receipt 2/19/21, email sent regarding additional online scoping meeting

Native American Heritage Commission
Sacred Lands File (SLF) Search

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

March 12, 2021

Hector Guerra
Tulare County Resource Managemento Agency

Via Email to: HGuerra@co.tulare.ca.us; JWillis@co.tulare.ca.us

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Visalia Landfill Compost and Biomass Conversion Facility Project, Tulare County

Dear Mr. Guerra:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

    - Any report that may contain site forms, site significance, and suggested mitigation measures.

      All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,

Nancy Gonzalez-Lopez

Nancy Gonzalez-Lopez
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Tribal Consultation List
March 12, 2021

Big Sandy Rancheria of Western Mono Indians
Elizabeth D. Kipp, Chairperson
PO. Box 337 — Western Mono
Auberry , CA 93602
lkipp@bsrnation.com
(559) 374-0066

Dunlap Band of Mono Indians
Benjamin Charley Jr., Tribal Chair
P.O. Box 14 — Mono
Dunlap , CA 93621
ben.charley@yahoo.com
(760) 258-5244

Dunlap Band of Mono Indians
Dirk Charley, Tribal Secretary
5509 E. McKenzie Avenue — Mono
Fresno , CA 93727
dcharley2016@gmail.com
(559) 554-5433

Kern Valley Indian Community
Julie Turner, Secretary
P.O. Box 1010 — Kawaiisu
Lake Isabella , CA 93240 — Tubatulabal
(661) 340-0032 Cell

Kern Valley Indian Community
Robert Robinson, Chairperson
P.O. Box 1010 — Tubatulabal
Lake Isabella , CA 93240 — Kawaiisu
bbutterbredt@gmail.com
(760) 378-2915 Cell

Kern Valley Indian Community
Brandy Kendricks
30741 Foxridge Court — Kawaiisu
Tehachapi , CA 93561 — Tubatulabal
krazykendricks@hotmail.com
(661) 821-1733

Santa Rosa Rancheria Tachi Yokut Tribe
Leo Sisco, Chairperson
P.O. Box 8 — Tache
Lemoore , CA 93245 — Tachi
Yokut
(559) 924-1278

Tubatulabals of Kern Valley
Robert L. Gomez, Jr., Tribal Chairperson
P.O. Box 226 — Tubatulabal
Lake Isabella , CA 93240
(760) 379-4590

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589 — Yokuts
Porterville , CA 93258
neil.peyron@tulerivertribe-nsn.gov
(559) 781-4271

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct. — Foothill Yokuts
Salinas , CA 93906 — Mono
kwood8934@aol.com — Wuksache
(831) 443-9702

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list applicable only for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed: Visalia Landfill Compost and Biomass Conversion Facility Project, Tulare County.

Scoping Meeting Update Email
February 19, 2021

From:	Jessica R Willis
To:	Robert Robinson (bbutterbredt@gmail.com); Julie Turner (meindiangirl@sbcglobal.net); Brandy Kendricks (krazykendricks@hotmail.com); Leo Sisco (LSisco@tachi-yokut-nsn.gov); Robert Jeff (RGJeff@tachi-yokut-nsn.gov); Shana Powers (SPowers@tachi-yokut-nsn.gov); Greg Cuara (GCuara@tachi-yokut-nsn.gov); Samantha McCarty (SMcCarty@tachi-yokut-nsn.gov); Bianca Arias (barias@tachi-yokut-nsn.gov); Robert L. Gomez (rgomez@tubatulabal.org); "Neil Peyron"; "Kerri Vera"; "Felix Christman"; "Ken Woodrow"
Cc:	Hector Guerra; Cheng Chi
Subject:	UPDATE: Scoping Meeting for Visalia Landfill Compost and Biomass Conversion Facility
Date:	Friday, February 19, 2021 2:08:31 PM

Good afternoon all.

Earlier today you were provided with a copy of the Notice of Preparation (NOP) of an Environmental Impact Report for the Visalia Landfill Compost and Biomass Conversion Facility. The NOP inadvertently included a typo in the Passcode for the Zoom Meeting. As such, the County is extending an invitation to the Scoping Meeting being held on Thursday, February 25, 2021 at 1:30 p.m. per the Zoom instructions below.

My sincerest apologies for any inconvenience. Please feel free to contact me via phone or email if I can be of further assistance.

Jessica Willis
Planner IV
Tulare County Resource Management Agency
Environmental Planning Division

County of Tulare Scoping Meeting – Visalia Landfill Compost and Biomass Conversion Facility

Topic: Visalia Landfill C&B
Time: Feb 25, 2021 01:30 PM Pacific Time (US and Canada)

Join Zoom Meeting
https://tularecounty-ca.zoom.us/j/95263866948?pwd=WW8xTHowQ0RiZk5QeTJ0L1kvUFB2Zz09

Meeting ID: 952 6386 6948
Passcode: 260206

One tap mobile
+16699009128,,95263866948# US (San Jose)
+12532158782,,95263866948# US (Tacoma)

Dial by your location
+1 669 900 9128 US (San Jose)
+1 253 215 8782 US (Tacoma)

+1 346 248 7799 US (Houston)
+1 301 715 8592 US (Washington DC)
+1 312 626 6799 US (Chicago)
+1 646 558 8656 US (New York)

Meeting ID: 952 6386 6948
Find your local number: https://tularecounty-ca.zoom.us/u/adBLAMMtqO

Jessica Willis
Planner IV
Tulare County Resource Management Agency
Environmental Planning Division
Ph: (559) 624-7122
Email: JWillis@tularecounty.ca.gov

Project Notification and NOP Email
February 19, 2021

From:	Jessica R Willis
To:	Brandy Kendricks (krazykendricks@hotmail.com)
Cc:	Hector Guerra; Cheng Chi
Subject:	AB 52 Project Notification - Visalia Landfill
Date:	Friday, February 19, 2021 12:10:43 PM
Attachments:	Visalia Landfill_Consultation Letter - KVIT-Kendricks.pdf Visalia Landfill_NOP_2-3-21.pdf

Good morning.

Pursuant to AB 52, Tulare County is extending an invitation to consult on the Visalia Landfill Compost and Biomass Conversion Facility Project. Attached for your review are the Project Notification Letter and the Notice of Preparation that has been prepared for the Project. Hard copies of these documents have also been sent to you via USPS Certified Mail. Please feel free to contact me if I can be of further assistance.

Best Regards.

Jessica Willis
Planner IV
Tulare County Resource Management Agency
Environmental Planning Division
Ph: (559) 624-7122
Email: JWillis@tularecounty.ca.gov

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 730-2653

Aaron R. Bock — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR
MICHAEL WASHAM, ASSOCIATE DIRECTOR

February 19, 2021

Kern Valley Indian Community
Brandy Kendricks
30741 Foxridge Court
Tehachapi, CA 93561

SENT VIA CERTIFIED MAIL

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Visalia Landfill – Compost and Biomass Conversion Facility Project

Dear Ms. Kendricks,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (County) hereby extends an invitation to consult on the CEQA review of the Visalia Landfill – Compost and Biomass Conversion Facility Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

- Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine; and
- Native American historic, cultural, or sacred site that is listed or may be eligible for listing in the California Register of Historical Resources including historic or prehistoric ruins and any burial ground, archaeological, or historic site.

<u>Notice of Preparation</u>

In accordance with CEQA, the County will be preparing an Environmental Impact Report (EIR) to evaluate the environmental effects associated with the Project.

The County previously provided you with a copy of the NOP prepared for the Project via email (February 3, 2021). However, a copy of the NOP is enclosed to assist you in reviewing the Project pursuant AB 52.

<u>Sacred Lands File Search</u>

The County has requested a Sacred Lands File (SLF) search for the Project area through the Native American Heritage Commission (NAHC). Results of the SLF search have not yet been received

by the County. As such, the SLF search results will be made available upon the release of the EIR for public review. However, the results may be made available to your Tribal Representatives if a written request for consultation is submitted to the County within thirty (30) days of receipt of this letter.

California Historical Resources Information System Search

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If your Tribe desires to consult with the County on the review of this Project pursuant to AB 52, please respond in writing within thirty (30) days of receipt of this letter. Written correspondence can be mailed to the address provided above or e-mailed to the addresses provided below. **If the County does not receive a response to this notification, it will be presumed that your Tribe has declined the opportunity to consult on this project pursuant to AB 52.**

Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail if you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact, Hector Guerra, Chief of Environmental Planning, by phone at (559) 624-7121, or by email at hguerra@tularecounty.ca.gov.

Sincerely,

Jessica R. Willis

Jessica Willis
Planner IV
Environmental Planning Division
(559) 624-7122
jwillis@tularecounty.ca.gov

Enclosure: Notice of Preparation

From:	Jessica R Willis
To:	Robert Robinson (bbutterbredt@gmail.com)
Cc:	Hector Guerra; Cheng Chi
Subject:	AB 52 Project Notification - Visalia Landfill
Date:	Friday, February 19, 2021 12:10:33 PM
Attachments:	Visalia Landfill_Consultation Letter - KVIT-Robinson.pdf Visalia Landfill_NOP_2-3-21.pdf

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Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

February 19, 2021

Kern Valley Indian Community
Robert Robinson, Chairperson
P.O. Box 1010
Lake Isabella, CA 93240

SENT VIA CERTIFIED MAIL

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Visalia Landfill – Compost and Biomass Conversion Facility Project

Dear Chairperson Robinson,

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Sincerely,

Jessica R. Willis

Jessica Willis
Planner IV
Environmental Planning Division
(559) 624-7122
jwillis@tularecounty.ca.gov

Enclosure: Notice of Preparation

From:	Jessica R Willis
To:	Julie Turner (meindiangirl@sbcglobal.net)
Cc:	Hector Guerra; Cheng Chi
Subject:	AB 52 Project Notification - Visalia Landfill
Date:	Friday, February 19, 2021 12:10:41 PM
Attachments:	Visalia Landfill_Consultation Letter - KVIT-Turner.pdf Visalia Landfill_NOP_2-3-21.pdf

Good morning.

Pursuant to AB 52, Tulare County is extending an invitation to consult on the Visalia Landfill Compost and Biomass Conversion Facility Project. Attached for your review are the Project Notification Letter and the Notice of Preparation that has been prepared for the Project. Hard copies of these documents have also been sent to you via USPS Certified Mail. Please feel free to contact me if I can be of further assistance.

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Jessica Willis
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Environmental Planning Division
Ph: (559) 624-7122
Email: JWillis@tularecounty.ca.gov

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Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

February 19, 2021

Kern Valley Indian Community
Julie Turner, Secretary
P.O. Box 1010
Lake Isabella, CA 93240

SENT VIA CERTIFIED MAIL

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Visalia Landfill – Compost and Biomass Conversion Facility Project

Dear Ms. Turner,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (County) hereby extends an invitation to consult on the CEQA review of the Visalia Landfill – Compost and Biomass Conversion Facility Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail if you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact, Hector Guerra, Chief of Environmental Planning, by phone at (559) 624-7121, or by email at hguerra@tularecounty.ca.gov.

Sincerely,

Jessica R. Willis

Jessica Willis
Planner IV
Environmental Planning Division
(559) 624-7122
jwillis@tularecounty.ca.gov

Enclosure: Notice of Preparation

From:	Jessica R Willis
To:	Bianca Arias (barias@tachi-yokut-nsn.gov)
Cc:	Hector Guerra; Cheng Chi
Subject:	AB 52 Project Notification - Visalia Landfill
Date:	Friday, February 19, 2021 12:10:49 PM
Attachments:	Visalia Landfill_Consultation Letter - SRR-Arias.pdf Visalia Landfill_NOP_2-3-21.pdf

Good morning.

Pursuant to AB 52, Tulare County is extending an invitation to consult on the Visalia Landfill Compost and Biomass Conversion Facility Project. Attached for your review are the Project Notification Letter and the Notice of Preparation that has been prepared for the Project. Hard copies of these documents have also been sent to you via USPS Certified Mail. Please feel free to contact me if I can be of further assistance.

Best Regards.

Jessica Willis
Planner IV
Tulare County Resource Management Agency
Environmental Planning Division
Ph: (559) 624-7122
Email: JWillis@tularecounty.ca.gov

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
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FAX (559) 730-2653

Aaron R. Bock — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR
MICHAEL WASHAM, ASSOCIATE DIRECTOR

February 19, 2021

Santa Rosa Rancheria Tachi Yokut Tribe
Bianca Arias, Administrative Assistant
P. O. Box 8
Lemoore, CA 93245

SENT VIA CERTIFIED MAIL

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Visalia Landfill – Compost and Biomass Conversion Facility Project

Dear Ms. Arias,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (County) hereby extends an invitation to consult on the CEQA review of the Visalia Landfill – Compost and Biomass Conversion Facility Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Jessica R. Willis

Jessica Willis
Planner IV
Environmental Planning Division
(559) 624-7122
jwillis@tularecounty.ca.gov

Enclosure: Notice of Preparation

From:	Jessica R Willis
To:	Greg Cuara (GCuara@tachi-yokut-nsn.gov)
Cc:	Hector Guerra; Cheng Chi
Subject:	AB 52 Project Notification - Visalia Landfill
Date:	Friday, February 19, 2021 12:10:55 PM
Attachments:	Visalia Landfill_Consultation Letter - SRR-Cuara.pdf Visalia Landfill_NOP_2-3-21.pdf

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Jessica Willis
Planner IV
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Environmental Planning Division
Ph: (559) 624-7122
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RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
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FAX (559) 730-2653

Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR
MICHAEL WASHAM, ASSOCIATE DIRECTOR

February 19, 2021

Santa Rosa Rancheria Tachi Yokut Tribe
Cultural Department
Greg Cuara, Cultural Specialist
P. O. Box 8
Lemoore, CA 93245

SENT VIA CERTIFIED MAIL

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Visalia Landfill – Compost and Biomass Conversion Facility Project

Dear Mr. Cuara,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (County) hereby extends an invitation to consult on the CEQA review of the Visalia Landfill – Compost and Biomass Conversion Facility Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Jessica R. Willis

Jessica Willis
Planner IV
Environmental Planning Division
(559) 624-7122
jwillis@tularecounty.ca.gov

Enclosure: Notice of Preparation

From:	Jessica R Willis
To:	Robert Jeff (RGJeff@tachi-yokut-nsn.gov)
Cc:	Hector Guerra; Cheng Chi
Subject:	AB 52 Project Notification - Visalia Landfill
Date:	Friday, February 19, 2021 12:10:48 PM
Attachments:	Visalia Landfill_Consultation Letter - SRR-Jeff.pdf Visalia Landfill_NOP_2-3-21.pdf

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Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR

MICHAEL WASHAM, ASSOCIATE DIRECTOR

February 19, 2021

Santa Rosa Rancheria Tachi Yokut Tribe
Robert Jeff, Vice-Chair
P. O. Box 8
Lemoore, CA 93245

SENT VIA CERTIFIED MAIL

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Visalia Landfill – Compost and Biomass Conversion Facility Project

Dear Vice-Chair Jeff,

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Sincerely,

Jessica R. Willis

Jessica Willis
Planner IV
Environmental Planning Division
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jwillis@tularecounty.ca.gov

Enclosure: Notice of Preparation

From:	Jessica R Willis
To:	Samantha McCarty (SMcCarty@tachi-yokut-nsn.gov)
Cc:	Hector Guerra; Cheng Chi
Subject:	AB 52 Project Notification - Visalia Landfill
Date:	Friday, February 19, 2021 12:10:56 PM
Attachments:	Visalia Landfill_Consultation Letter - SRR-McCarty.pdf Visalia Landfill_NOP_2-3-21.pdf

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REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

February 19, 2021

Santa Rosa Rancheria Tachi Yokut Tribe
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Samantha McCarty, Cultural Specialist
P. O. Box 8
Lemoore, CA 93245

SENT VIA CERTIFIED MAIL

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Visalia Landfill – Compost and Biomass Conversion Facility Project

Dear Ms. McCarty,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (County) hereby extends an invitation to consult on the CEQA review of the Visalia Landfill – Compost and Biomass Conversion Facility Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

- Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine; and
- Native American historic, cultural, or sacred site that is listed or may be eligible for listing in the California Register of Historical Resources including historic or prehistoric ruins and any burial ground, archaeological, or historic site.

<u>**Notice of Preparation**</u>

In accordance with CEQA, the County will be preparing an Environmental Impact Report (EIR) to evaluate the environmental effects associated with the Project.

The County previously provided you with a copy of the NOP prepared for the Project via email (February 3, 2021). However, a copy of the NOP is enclosed to assist you in reviewing the Project pursuant AB 52.

Sacred Lands File Search

The County has requested a Sacred Lands File (SLF) search for the Project area through the Native American Heritage Commission (NAHC). Results of the SLF search have not yet been received by the County. As such, the SLF search results will be made available upon the release of the EIR for public review. However, the results may be made available to your Tribal Representatives if a written request for consultation is submitted to the County within thirty (30) days of receipt of this letter.

California Historical Resources Information System Search

A California Historical Resources Information System (CHRIS) search for the Project area has been requested through the Southern San Joaquin Valley Information Center (SSJVIC). Results of the CHRIS search have not yet been received by the County. As such, the CHRIS search results will be made available upon the release of the DEIR for public review. However, the results may be made available to your Tribal Representatives if a written request for consultation is submitted to the County within thirty (30) days of receipt of this letter.

If your Tribe desires to consult with the County on the review of this Project pursuant to AB 52, please respond in writing within thirty (30) days of receipt of this letter. Written correspondence can be mailed to the address provided above or e-mailed to the addresses provided below. **If the County does not receive a response to this notification, it will be presumed that your Tribe has declined the opportunity to consult on this project pursuant to AB 52.**

Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail if you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact, Hector Guerra, Chief of Environmental Planning, by phone at (559) 624-7121, or by email at hguerra@tularecounty.ca.gov.

Sincerely,

Jessica R. Willis

Jessica Willis
Planner IV
Environmental Planning Division
(559) 624-7122
jwillis@tularecounty.ca.gov

Enclosure: Notice of Preparation

From:	Jessica R Willis
To:	Shana Powers (SPowers@tachi-yokut-nsn.gov)
Cc:	Hector Guerra; Cheng Chi
Subject:	AB 52 Project Notification - Visalia Landfill
Date:	Friday, February 19, 2021 12:10:52 PM
Attachments:	Visalia Landfill_Consultation Letter - SRR-Powers.pdf Visalia Landfill_NOP_2-3-21.pdf

Good morning.

Pursuant to AB 52, Tulare County is extending an invitation to consult on the Visalia Landfill Compost and Biomass Conversion Facility Project. Attached for your review are the Project Notification Letter and the Notice of Preparation that has been prepared for the Project. Hard copies of these documents have also been sent to you via USPS Certified Mail. Please feel free to contact me if I can be of further assistance.

Best Regards.

Jessica Willis
Planner IV
Tulare County Resource Management Agency
Environmental Planning Division
Ph: (559) 624-7122
Email: JWillis@tularecounty.ca.gov

RESOURCE MANAGEMENT AGENCY

5961 South Mooney Blvd
Visalia, CA 93277
Phone (559) 624-7000
Fax (559) 730-2653

Aaron R. Bock — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR
MICHAEL WASHAM, ASSOCIATE DIRECTOR

February 19, 2021

Santa Rosa Rancheria Tachi Yokut Tribe
Cultural Department
Shana Powers, Director
P. O. Box 8
Lemoore, CA 93245

SENT VIA CERTIFIED MAIL

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Visalia Landfill – Compost and Biomass Conversion Facility Project

Dear Ms. Powers,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (County) hereby extends an invitation to consult on the CEQA review of the Visalia Landfill – Compost and Biomass Conversion Facility Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Jessica R. Willis

Jessica Willis
Planner IV
Environmental Planning Division
(559) 624-7122
jwillis@tularecounty.ca.gov

Enclosure: Notice of Preparation

From:	Jessica R Willis
To:	Leo Sisco (LSisco@tachi-yokut-nsn.gov)
Cc:	Hector Guerra; Cheng Chi
Subject:	AB 52 Project Notification - Visalia Landfill
Date:	Friday, February 19, 2021 12:10:45 PM
Attachments:	Visalia Landfill_Consultation Letter - SRR-Sisco.pdf Visalia Landfill_NOP_2-3-21.pdf

Good morning.

Pursuant to AB 52, Tulare County is extending an invitation to consult on the Visalia Landfill Compost and Biomass Conversion Facility Project. Attached for your review are the Project Notification Letter and the Notice of Preparation that has been prepared for the Project. Hard copies of these documents have also been sent to you via USPS Certified Mail. Please feel free to contact me if I can be of further assistance.

Best Regards.

Jessica Willis
Planner IV
Tulare County Resource Management Agency
Environmental Planning Division
Ph: (559) 624-7122
Email: JWillis@tularecounty.ca.gov

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 730-2653

Aaron R. Bock — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR — MICHAEL WASHAM, ASSOCIATE DIRECTOR

February 19, 2021

Santa Rosa Rancheria Tachi Yokut Tribe
Leo Sisco, Chairperson
P. O. Box 8
Lemoore, CA 93245

SENT VIA CERTIFIED MAIL

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Visalia Landfill – Compost and Biomass Conversion Facility Project

Dear Chairperson Sisco,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (County) hereby extends an invitation to consult on the CEQA review of the Visalia Landfill – Compost and Biomass Conversion Facility Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Jessica R. Willis

Jessica Willis
Planner IV
Environmental Planning Division
(559) 624-7122
jwillis@tularecounty.ca.gov

Enclosure: Notice of Preparation

From:	Jessica R Willis
To:	Robert L. Gomez (rgomez@tubatulabal.org)
Cc:	Hector Guerra; Cheng Chi
Subject:	AB 52 Project Notification - Visalia Landfill
Date:	Friday, February 19, 2021 12:10:58 PM
Attachments:	Visalia Landfill_Consultation Letter - TKV-Gomez.pdf Visalia Landfill_NOP_2-3-21.pdf

Good morning.

Pursuant to AB 52, Tulare County is extending an invitation to consult on the Visalia Landfill Compost and Biomass Conversion Facility Project. Attached for your review are the Project Notification Letter and the Notice of Preparation that has been prepared for the Project. Hard copies of these documents have also been sent to you via USPS Certified Mail. Please feel free to contact me if I can be of further assistance.

Best Regards.

Jessica Willis
Planner IV
Tulare County Resource Management Agency
Environmental Planning Division
Ph: (559) 624-7122
Email: JWillis@tularecounty.ca.gov

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
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PHONE (559) 624-7000
FAX (559) 730-2653

Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

February 19, 2021

Tubatulabals of Kern Valley
Robert L. Gomez, Jr., Chairperson
P.O. Box 226
Lake Isabella, CA 93240

SENT VIA CERTIFIED MAIL

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Visalia Landfill – Compost and Biomass Conversion Facility Project

Dear Chairperson Gomez,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (County) hereby extends an invitation to consult on the CEQA review of the Visalia Landfill – Compost and Biomass Conversion Facility Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail if you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact, Hector Guerra, Chief of Environmental Planning, by phone at (559) 624-7121, or by email at hguerra@tularecounty.ca.gov.

Sincerely,

Jessica R. Willis

Jessica Willis
Planner IV
Environmental Planning Division
(559) 624-7122
jwillis@tularecounty.ca.gov

Enclosure: Notice of Preparation

From:	Jessica R Willis
To:	Felix Christman (tuleriverarchmon1@gmail.com)
Cc:	Hector Guerra; Cheng Chi
Subject:	AB 52 Project Notification - Visalia Landfill
Date:	Friday, February 19, 2021 12:11:01 PM
Attachments:	Visalia Landfill_Consultation Letter - TRIT-Christman.pdf Visalia Landfill_NOP_2-3-21.pdf

Good morning.

Pursuant to AB 52, Tulare County is extending an invitation to consult on the Visalia Landfill Compost and Biomass Conversion Facility Project. Attached for your review are the Project Notification Letter and the Notice of Preparation that has been prepared for the Project. Hard copies of these documents have also been sent to you via USPS Certified Mail. Please feel free to contact me if I can be of further assistance.

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Jessica Willis
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Ph: (559) 624-7122
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RESOURCE MANAGEMENT AGENCY

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VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 730-2653

Aaron R. Bock Economic Development and Planning
Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

February 19, 2021

Tule River Indian Tribe
Environmental Department
Felix Christman, Tribal Archaeological Monitor
P. O. Box 589
Porterville, CA 93258

SENT VIA CERTIFIED MAIL

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Visalia Landfill – Compost and Biomass Conversion Facility Project

Dear Mr. Christman,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (County) hereby extends an invitation to consult on the CEQA review of the Visalia Landfill – Compost and Biomass Conversion Facility Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Jessica R. Willis

Jessica Willis
Planner IV
Environmental Planning Division
(559) 624-7122
jwillis@tularecounty.ca.gov

Enclosure: Notice of Preparation

From: Jessica R Willis
To: Neil Peyron (neil.peyron@tulerivertribe-nsn.gov)
Cc: Hector Guerra; Cheng Chi
Subject: AB 52 Project Notification - Visalia Landfill
Date: Friday, February 19, 2021 12:10:59 PM
Attachments: Visalia Landfill_Consultation Letter - TRIT-Peyron.pdf
Visalia Landfill_NOP_2-3-21.pdf

Good morning.

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Jessica Willis
Planner IV
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RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
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Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR

MICHAEL WASHAM, ASSOCIATE DIRECTOR

February 19, 2021

Tule River Indian Tribe
Neil Peyron, Chairperson
P. O. Box 589
Porterville, CA 93258

SENT VIA CERTIFIED MAIL

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Visalia Landfill – Compost and Biomass Conversion Facility Project

Dear Chairperson Peyron,

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Sincerely,

Jessica R. Willis

Jessica Willis
Planner IV
Environmental Planning Division
(559) 624-7122
jwillis@tularecounty.ca.gov

Enclosure: Notice of Preparation

From:	Jessica R Willis
To:	Kerri Vera (tuleriverenv@yahoo.com)
Cc:	Hector Guerra; Cheng Chi
Subject:	AB 52 Project Notification - Visalia Landfill
Date:	Friday, February 19, 2021 12:11:00 PM
Attachments:	Visalia Landfill_Consultation Letter - TRIT-Vera.pdf Visalia Landfill_NOP_2-3-21.pdf

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RESOURCE MANAGEMENT AGENCY

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Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

February 19, 2021

Tule River Indian Tribe
Environmental Department
Kerri Vera, Director
P. O. Box 589
Porterville, CA 93258

SENT VIA CERTIFIED MAIL

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Visalia Landfill – Compost and Biomass Conversion Facility Project

Dear Ms. Vera,

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Sincerely,

Jessica R. Willis

Jessica Willis
Planner IV
Environmental Planning Division
(559) 624-7122
jwillis@tularecounty.ca.gov

Enclosure: Notice of Preparation

From:	Jessica R Willis
To:	Ken Woodrow (Kwood8934@aol.com)
Cc:	Hector Guerra; Cheng Chi
Subject:	AB 52 Project Notification - Visalia Landfill
Date:	Friday, February 19, 2021 12:11:02 PM
Attachments:	Visalia Landfill_Consultation Letter - WIT-Woodrow.pdf Visalia Landfill_NOP_2-3-21.pdf

Good morning.

Pursuant to AB 52, Tulare County is extending an invitation to consult on the Visalia Landfill Compost and Biomass Conversion Facility Project. Attached for your review are the Project Notification Letter and the Notice of Preparation that has been prepared for the Project. Hard copies of these documents have also been sent to you via USPS Certified Mail. Please feel free to contact me if I can be of further assistance.

Best Regards.

Jessica Willis
Planner IV
Tulare County Resource Management Agency
Environmental Planning Division
Ph: (559) 624-7122
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RESOURCE MANAGEMENT AGENCY

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Aaron R. Bock	Economic Development and Planning
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REED SCHENKE, DIRECTOR — MICHAEL WASHAM, ASSOCIATE DIRECTOR

February 19, 2021

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA 93906

SENT VIA CERTIFIED MAIL

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Visalia Landfill – Compost and Biomass Conversion Facility Project

Dear Chairperson Woodrow,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (County) hereby extends an invitation to consult on the CEQA review of the Visalia Landfill – Compost and Biomass Conversion Facility Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

- Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine; and
- Native American historic, cultural, or sacred site that is listed or may be eligible for listing in the California Register of Historical Resources including historic or prehistoric ruins and any burial ground, archaeological, or historic site.

Notice of Preparation

In accordance with CEQA, the County will be preparing an Environmental Impact Report (EIR) to evaluate the environmental effects associated with the Project.

The County previously provided you with a copy of the NOP prepared for the Project via email (February 3, 2021). However, a copy of the NOP is enclosed to assist you in reviewing the Project pursuant AB 52.

Sacred Lands File Search

The County has requested a Sacred Lands File (SLF) search for the Project area through the Native American Heritage Commission (NAHC). Results of the SLF search have not yet been received

by the County. As such, the SLF search results will be made available upon the release of the EIR for public review. However, the results may be made available to your Tribal Representatives if a written request for consultation is submitted to the County within thirty (30) days of receipt of this letter.

California Historical Resources Information System Search

A California Historical Resources Information System (CHRIS) search for the Project area has been requested through the Southern San Joaquin Valley Information Center (SSJVIC). Results of the CHRIS search have not yet been received by the County. As such, the CHRIS search results will be made available upon the release of the DEIR for public review. However, the results may be made available to your Tribal Representatives if a written request for consultation is submitted to the County within thirty (30) days of receipt of this letter.

If your Tribe desires to consult with the County on the review of this Project pursuant to AB 52, please respond in writing within thirty (30) days of receipt of this letter. Written correspondence can be mailed to the address provided above or e-mailed to the addresses provided below. **If the County does not receive a response to this notification, it will be presumed that your Tribe has declined the opportunity to consult on this project pursuant to AB 52.**

Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail if you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact, Hector Guerra, Chief of Environmental Planning, by phone at (559) 624-7121, or by email at hguerra@tularecounty.ca.gov.

Sincerely,

Jessica R. Willis

Jessica Willis
Planner IV
Environmental Planning Division
(559) 624-7122
jwillis@tularecounty.ca.gov

Enclosure: Notice of Preparation

APPENDIX “D”

REPORT OF COMPOSTING SITE INFORMATION

Report of Composting Site Information

for the

Visalia Landfill Composting Facility

Prepared by:

Edgar & Associates

1822 21st Street
Sacramento, CA 95811

July 2021

Table of Contents

Introduction

The Tulare County Solid Waste Department (County) intends to develop and operate a covered aerated static pile (CASP) compost facility to comply with the upcoming SB 1383 regulations. The compost facility will be located on the County's Visalia Landfill property that encompasses approximately 634 acres, of which the compost facility will occupy approximately 24 acres, located in a soil borrow recessed approximately 20 feet below grade. The composting facility will be designed to accept up to 200,000 tons per year (TPY) in increments of 50,000 TPY technology modules and can store up to 200,000 cubic yards on-site of organic material that would have otherwise been landfilled. The compost facility would include installing processing and composting equipment, a 50,000 square foot processing building, concrete and asphaltic concrete compost pads, and a lined storm water storage pond.

Facility Contact Information

Facility Name:	Visalia Landfill Composting Facility
Facility Location:	Visalia Landfill 8614 Avenue 328 Visalia, CA 93291
Mailing address:	Tulare County Solid Waste Department 5955 S. Mooney Blvd. Visalia, Ca 93277
APN:	077-020-030
Land Owner:	Tulare County Solid Waste Department 5955 S. Mooney Blvd. Visalia, Ca 93277
Operator:	Tulare County Solid Waste Department 5955 S. Mooney Blvd. Visalia, Ca 93277
Contacts:	Bryce Howard Director – Tulare County Solid Waste Department 5955 S. Mooney Blvd. Visalia, CA 93277 (559) 624-7195

Project Objectives

The following are the objectives of the proposed project:

- Provide compost capacity for a transformative organics diversion program in California as required by California legislation;
- Reduce methane emissions from landfills by removing organics from landfills and by composting new feedstocks and reducing greenhouse gasses (GHG) by sequestering nutrient rich compost in soils;
- Modify an existing, strategically integrated waste management facility (Visalia Landfill) to accommodate the growing regulatory demand for mixed materials, organic waste, and food waste composting;
- Receive and compost food wastes derived from commercial and residential sources, increase diversion of organic materials from landfills by expanding the approved feedstock list to include digestates that can be received and processed;
- List the organics waste feedstocks for the composting facility, using terms and definitions consistent with new State composting regulations (Title 14 of the California Code of Regulations [14 CCR]) and the adopted SB 1383 regulations;
- Allow pre-processing food waste operations at the composting facility;
- Continue to provide economic benefits to Tulare County through employment of local residents, by the expansion of operational solid waste management activities and construction of new processing equipment;
- Compliance with San Joaquin Valley Air Pollution Control District (SJVAPCD) rules and regulations;
- Facilitate the accomplishment of AB 341, which directs CalRecycle to increase statewide diversion from landfills to 75% by 2020;
- Enhance the business community's ability to comply with AB 1826, which as of April 1, 2016 requires businesses that generate a specific amount of organic waste per week must arrange for recycling services for that organic waste in a specified manner (such as composting), to substantially reduce landfill disposal of food wastes; and
- Create water saving opportunities by using compost to enhance agricultural soil.

Operations Overview

Existing Landfill Operations

The landfill is open to both commercial haulers and the general public, as will the compost facility. All incoming waste loads arrive at the landfill through the main entrance on Avenue 328. Upon entering, road markings and signs direct individual haulers to the gatehouse where loads are inspected and weighed. At the gatehouse, commercial users are directed to the waste management unit (WMU) working face. Self-haul public users can drop off recyclable material such as white goods, metal, glass, wood/yard waste, and tires prior to unloading of waste material at the covered drop off facility or the edge of the active face.

The landfill facility provides disposal capacity for portions of Tulare County. Refuse and organic waste entering the landfill facility originates from the following sources:

- Exclusive Refuse Hauler Service Areas A-J administered by the County and operated by licensed haulers.
- The City of Visalia
- The City of Tulare
- The City of Woodlake
- Residential self-haul
- Commercial self-haul

Access to the active face is provided by all-weather roads. All internal access roads have been designed to facilitate all-weather movement of customer vehicles and refuse equipment.

The landfill facility currently receives approximately 500 vehicles per day. The new entrance complex and internal access roads have been designed to accommodate up to 900 vehicles per day corresponding to the predicted maximum daily throughput of 2,000 tons per day (TPD). Impacts to external traffic circulation were evaluated in the traffic analysis prepared in compliance with CEQA requirements for the project. The composting facility will operate under a separate Solid Waste Facility Permit (SWFP) from the landfill, but will share common infrastructure (entrance, roadways, security fence, etc).

Dedicated drop-off areas are provided for recyclable materials, which are temporarily stored on-site until removed by commercial haulers/recyclers and transported offsite to processing facilities. A covered drop-off facility with paved access and containers is available for self-haul customers to dispose of refuse away from the designated recycle area and active face. Refuse unloaded at the active face is spread and compacted in 2-foot-thick lifts at the working face using a landfill compactor making several passes across the entire width of the active face. Intermediate refuse slopes will not exceed 3H:1V.

All landfill facility equipment is regularly maintained by a County heavy equipment mechanic. Regular preventative maintenance is performed on-site, as will minor repairs. Major repairs will either be completed on-site or at an off-site maintenance facility.

Proposed Project Operations

The County intends to develop and operate a CASP composting facility to comply with the upcoming SB 1383 regulations. The compost facility will be located on the County's Visalia Landfill property that encompasses approximately 634 acres, of which the compost facility will occupy approximately 24 acres, located in a soil borrow recessed approximately 20 feet below grade. The compost facility will be designed to accept up to 200,000 TPY and can store up to 200,000 cubic yards of organic material on-site that would have otherwise been landfilled. The compost facility would include installing processing and composting equipment, a 50,000 square foot processing building, concrete and asphaltic concrete paved compost pads, and a lined storm water storage pond. Site plans illustrating the composting location and features are attached in Appendix A.

The composting facility would be designed to process organic waste that would be considered new tons to comply with SB 1383, as well as current tons that may be recycled on-site or at other facilities in the County. The organic waste would be delivered to the proposed composting facility by collection vehicles, transfer trailers and self-haul vehicles. Wood waste would be stored outdoors for up to 30 days in a designated area. Green waste would be stored outdoors for up to 7 days in a designated area. Co-collected residential organic wastes would be stored outdoors for up to 48 hours. Commercial organic waste would be delivered into the proposed processing building.

The proposed project would be authorized to receive and handle any ‘compostable material’ or ‘digestate’ as authorized under current regulations. Some organic material may be delivered pre-processed and feedstock-ready from local material recovery facilities and may be deposited directly into the CASP composting area without further processing. The definitions presented herein are consistent with current and future state regulations as administered by CalRecycle and the State Water Resources Control Board (SWRCB), as defined in 14 CCR and SB 1383. Any feedstocks approved to be processed at the composting facility would comply with all applicable regulations.

Under the proposed project, the composting facility would obtain a SWFP separate from the landfill.

Hours of Operation

The hours of operations for receiving waste material will harmonize with the landfill with the following hours of operations:

Monday – Friday	7:00 am to 4:00 pm
Saturday	8:00 am to 4:00 pm

The hours of operations of processing material will be 24 hours per day, 7 days per week. The waste material received in the processing building may be processed 24 hours per day to accommodate surge piles and to ensure processing within a 48-hour holding time period from the time of receipt. The CASP piles will be provided moisture control and oxygen will be introduced via fans that are controlled electronically on a timer throughout the 24-hour day.

CASP piles may be processed throughout the day to accommodate wind patterns that could limit processing during the calmer portions of the day. The operator may propose to extend the operating hours of the Facility to the maximum permitted hours. Operator will develop procedures to facilitate the extended hours, including compensation for any additional County costs as a result of operator's extended hours.

Participating Agencies

The proposed Project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system nor would it conflict with an applicable congestion management program. The development of the composting facility would not result in an increase in population nor corresponding to an increase in vehicle travel; therefore new or modified intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit would not be required. Agencies involved in the project, include:

- Tulare County Health and Human Services Agency, Environmental Health
- CalRecycle
- SJVAPCD
- California Regional Water Quality Control Board, Central Valley Region (RWQCB)

In addition to applying to the Tulare County Resources Management Agency for a Conditional Use Permit (CUP), regulatory oversight of compost facilities is provided by CalRecycle [formerly the California Integrated Waste Management Board (CIWMB)] and the Local Enforcement Agency (LEA), Tulare County Environmental Health Department. The project would also be subject to SJVAPCD and RWQCB requirements.

CalRecycle requires that the project applicant meet design, operation, record keeping, environmental health standards, and employee training requirements for a Compostable Materials Handling Facility, apply for and maintain permit conditions, and be inspected at least monthly. A "Compostable Materials Handling Operation" is defined in 14 CCR, section 17852, as follows:

> (a)(12) "Compostable Materials Handling Operation" or "Facility" means an operation or facility that processes, transfers, or stores compostable material. Handling of compostable materials results in controlled biological decomposition. Handling includes composting, screening, chipping and grinding, and storage activities related to the production of compost, compost feedstocks, and chipped and ground materials. "Compostable Materials Handling Operation or Facility" also includes:
>
> (A) agricultural material composting operations;
> (B) green material composting operations and facilities;
> (C) research composting operations; and
> (D) chipping and grinding operations and facilities.

Site improvements will be required by the SWRCB as part of the approval process for this project. The landfill currently has a site-specific water quality permit, called Waste Discharge Requirements (WDRs). The composting facility will operate under separate general waste discharge requirements. To comply with new permitting requirements, site improvements may include constructing a new lined storm water storage pond, as well as improvements to working surfaces such as paving active composting and/or processing areas to meet the SWRCB's specifications.

Air Quality Permitting for Composting Facilities

The SJVAPCD has primary responsibility for regulating stationary sources of air pollution situated within its jurisdictional boundaries. To this end, the SJVAPCD implements air quality programs required by State and federal mandates, enforces rules and regulations based on air pollution laws, and educates businesses and residents about their role in protecting air quality. The SJVAPCD is also responsible for managing and permitting existing, new, and modified sources of air emissions within the Tulare County portion of the San Joaquin Valley Air Basin.

In 1998, SJVAPCD adopted its Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) to provide lead agencies, consultants, and project applicants with uniform procedures for addressing air quality in environmental documents. SJVAPCD subsequently revised its GAMAQI document in 2002 and then again in 2015.

Report of Composting Site Information Regulatory Requirements - 14 CCR § 18227

According to 14 CCR, section 18227, each operator of a compostable material handling Facility that is required to obtain a Compostable Materials Handling Facility Permit, as specified in Title 27 of the California Code of Regulations (27 CCR), Division 2, Subdivision 1, Chapter 4, Subchapter 1 and Subchapter 3, Articles 1, 2, 3, and 3.1 (commencing with section 21450), or a Registration Permit for a Vegetative Food Material Composting Facility, as specified in 14 CCR , Division 7, Chapter 5.0, Article 3.0 (commencing with section 18104) shall, at the time of application, file a Report of Composting Site Information (RCSI) with the LEA as required by section 17863 of this Title. The RCSI shall contain the following:

(a) A description of the processes to be used, including estimated quantities of feedstocks, additives, and amendments.

(b) A descriptive statement of the operations conducted at the Facility.

(c) A schematic drawing of the Facility showing layout and general dimensions of all processes utilized in the production of compost including, but not limited to, unloading, storage, processing, parking, and loading areas.

(d) A description of the proposed methods used to control leachate, litter, odors, dust, rodents, and insects, for example, how the operator will store, process and incorporate food material and vegetative food material into windrows or static piles, timeframes for inclusion of material, collection and containment of leachate, passive and active vector controls, methods to monitor effectiveness of control measures.

(e) A description of the proposed emergency provisions for equipment breakdown or power failure.

(f) A description of the storage capacity, feedstock pile sizes, and anticipated maximum and average length of time compostable materials will be stored at the Facility.

(g) A description of compostable materials handling equipment used at the Facility including type, capacity, and number of units.

(h) Anticipated annual operation capacity for the Facility in cubic yards.

(i) A description of provisions to handle unusual peak loadings.

(j) A description of the proposed method for storage and final disposal of nonrecoverable or nonmarketable residues.

(k) A description of the water supplies for process water required.

(l) Identification of person(s) responsible for oversight of Facility operations.

(m) A description of the proposed site restoration activities, in accordance with 14 CCR, section 17870.

(n) An Odor Impact Minimization Plan pursuant to 14 CCR, section 17863.4 and, if applicable, an Odor Best Management Practice Feasibility Report and associated plan pursuant to 14 CCR, section 17863.4.1. The LEA may require the operator to revise the Odor Impact Minimization Plan and, if applicable, the Odor Best Management Practice Feasibility Report and associated plan if the operator proposes to accept new feedstock, such as food material or vegetative food material.

A. Acreage of Operation Area, Site Location, and Process Description

18227.a A description of the processes to be used, including estimated quantities of feedstocks, additives, and amendments.

Location

The Visalia Landfill is located in Tulare County approximately 6 miles northwest of the City of

Visalia at the intersection of Road 80 and Avenue 328 (Sheet 1). The landfill includes the eastern ½ of Section *5* and western ½ of Section 4, T18S, R24E, Mount Diablo Baseline and Meridian (MDB&M). The Saint Johns River is approximately 1.5 miles north of the site. The current site address is 8614 Avenue 328, Visalia, CA 93291-8856. The legal boundary for the Visalia Landfill property encompasses 634 acres and comprises Assessor's Parcel Numbers 077-020-030. The former point of access for Unit I was from Road 80 on the west side of the site.

The proposed composting area is located within the Visalia Landfill property footprint on Assessor's Parcel Number 077-020-030 (attached). This parcel is approximately 76 acres in size, of which approximately 24 acres will be developed as the composting facility and will consist of:

- A receiving and processing area,
- CASP units for active composting,
- Compost curing area,
- Finished product screening and storage area, and
- Lined storm water storage pond.

The 24-acre proposed site would be in a soil borrow pit and designed to accommodate up to 200,000 TPY. The site will be recessed approximately 20 feet below grade and is currently vacant, graded, and would not need to be cleared for the proposed composting facility. The composting facility will use CASP technology to process 200,000 TPY. This operation will be performed on a self-contained, 4.4-acre concrete pad. Additionally, a 50,000 square foot processing building, approximately 14 acres of asphaltic concrete paved pads for receiving, pre-processing, curing, screening, and storage, and a 35.9 acre-foot (AF) lined storm water pond to collect contact water will be installed.

Feedstock

The proposed project would authorize the composting facility to accept organic waste and material types of 'mixed materials' consistent with the new regulations (AB 1826 and SB 1383), which have changed the requirements for disposal of organic waste as well as expanding the list of organic wastes that can be accepted at a Compostable Materials Handling Facility. The additional types of 'mixed materials' and organic wastes would include all types of food material (including post-consumer food waste, food-soiled paper, compostable plastics), and digestate consistent with current regulations. Based on this, the CUP would list acceptable materials that can be received by the composting facility and includes:

- 'Mixed Materials' pursuant to 14 CCR
- 'Food Material' pursuant to 14 CCR; and
- 'Organic Wastes' pursuant to SB 1383 regulations.

The landfill currently accepts construction and demolition debris, green waste, wood waste, and agricultural waste for diversion operations, as well as municipal solid waste for landfill disposal. The landfill currently disposes of the organic waste within the municipal solid waste stream, which instead would be diverted from the landfill to the composting facility. The composting facility will accept a select, source-separated, subset of these materials for processing listed below and further defined in Table 1.

Composting is the biological decomposition of organic material under aerobic conditions (i.e., in the presence of oxygen). Composting is a self-limiting biological process. Conditions that limit the microbial population include: nutrient availability, temperature, aeration, moisture content, and pH. The composting process requires that microorganisms be supplied with the primary nutrients carbon and nitrogen. Carbon to nitrogen ratios (C/N), which range from 20:1 to 30:1, are considered optimal for microorganisms. The more the C/N ratio deviates from this range, the slower the decomposition process becomes. With a ratio greater than 40:1, nitrogen represents a limiting factor and the reaction rate slows. With a C/N ratio lower than 15:1, excess nitrogen is driven off as ammonia. While this loss of nitrogen is not detrimental to the decomposition process, it does lower the nutrient value of the compost product.

CASP technology can be permitted to receive a variety of composting feedstocks including all types of compostable organic wastes, green wastes, food wastes, and clean wood wastes. Many composting facilities receive feedstocks that are predominately composed of tree prunings, leaves, grass clippings, and contain a small percentage of food waste. Leaves generally have a high C/N ratio. Lawn clippings lack structure to maintain porosity for aeration but have a favorable C/N ratio and moisture content for composting, as does food waste. The CASP compost 'recipe' would vary over time as the participation in residential food waste collection programs increases over time, along with SB 1383 commercial organic wastes, however the recipe would be a balanced C/N ratio and would yield an excellent finished compost product.

The proposed project would be authorized to receive and handle any 'compostable material' or 'digestate' as authorized under current regulations. Some organic material may be delivered pre-processed and feedstock-ready from local material recovery facilities and may be deposited directly into the CASP composting area without further processing. The following definitions are consistent with current and future state regulations as administered by CalRecycle and SWRCB, as defined in 14 CCR and SB 1383. Any feedstocks approved to be processed at the Facility would comply with all applicable regulations. Table 1*,* as presented on the following page, provides a description of the feedstocks the composting facility would use. Mixed municipal solid waste will not be used as feedstocks for the composting facility.

Under the proposed project, the composting facility would obtain a SWFP where the following types of wastes would be prohibited:

- Hazardous, radioactive, designated, and medical wastes;
- Dead animals, septage, ash, painted or treated wood;
- Mixed (municipal) solid waste and mixed construction and demolition materials;
- Burning material;

- Manure from known infected herds or sources as monitored and reported by the California Department of Food and Agriculture (CDFA); and
- Biosolids or any type of sewage sludge.

Feedstock definitions are further described in Table 1 below.

Table 1:Feedstock Definitions for Feedstocks to be Accepted under the Project

Feedstocks	***Description***
Agricultural Materials	Waste material of plant or animal origin, which results directly from the conduct of agriculture, animal husbandry, horticulture, aquaculture, silviculture, vermiculture, viticulture and similar activities undertaken for the production of food or fiber for human or animal consumption or use, which is separated at the point of generation, and which contains no other solid waste. With the exception of grape pomace or material generated during nut or grain hulling, shelling, and processing, agricultural material has not been processed except at its point of generation and has not been processed in a way that alters its essential character as a waste resulting from the production of food or fiber for human or animal consumption or use. Material that is defined in this Section 17852 as "food material" or "vegetative food material" is not agricultural material. Agricultural material includes, but is not limited to, manures, orchard and vineyard prunings, grape pumice, and crop residues. (14 CCR §17852)
Food Material	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. (14 CCR §17852)
Digestate	Organic by-product (solid or liquid) of anaerobic digestion process.
Green Material	Any plant material except food material and vegetative food material that is separated at the point of generation, contains no greater than 1.0% of physical contaminants by dry weight, and meets the requirements of section 17868.5. Green material includes, but is not limited to tree and 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. Agricultural material, as defined in this section 17852(a) (5), that meets this definition of "green material" may be handled as either agricultural material or green material. (14 CCR §17852)
Mixed Material	Any compostable material that is part of the municipal solid waste stream, and is mixed with or contains non-organics, processed industrial materials, mixed demolition or mixed construction debris, or plastics. A feedstock that is not source separated or contains 1.0% or more of physical contaminants by dry weight is mixed material (14 CCR § 17852).
Organic Wastes	Solid wastes containing material originated from living organisms and their metabolic waste products, including but not limited to food waste, green waste material, landscape and pruning waste, applicable organic textiles and carpets, wood, lumber, fiber, paper products, printing and writing paper, manure, biosolids, digestate, and sludges. (SB 1383 or as may be amended).
Pre-processed feedstock-ready CASP materials	Some organic material may be delivered pre-processed and feedstock-ready from local material recovery facilities and may be deposited directly into the covered aerated static pile (CASP) unit without further processing.

B. Composting Process and Operations

18227 (b). A descriptive statement of the operations conducted at the facility.

The Visalia Landfill has been active for many years and has a Full SWFP. Some Landfill infrastructure such as access roads and site security will be used to support the distinct Compost Operations. The focus of these operating standards is on the composting operation.

Preprocessing Feedstock

The existing CUP for the Visalia landfill property allows for reception and storage of green waste and wood waste and the grinding process, which would be re-located from the current location near the landfill to the composting facility. This project would allow these wastes to continue to be ground; and will allow further processing through a screen or similar equipment to size separate and be blended with processed food waste in ratio of 10% to 25% food material to green and wood materials and be placed in the CASP composting area for composting. Additional equipment, such as a grinder, conveyors, and shaker deck, would be installed on the project site to complete these process operations.

Additionally, the co-collection of green waste with food material from residential sources (co-collected residential organics) is an emerging trend in California to meet SB 1383 objectives. The amount of residential food material varies from 3% to 7%, with seasonal peaks up to 10%, of the green waste volume, based on seasonal factors and special holiday events. The co-collected residential organics would be delivered to the site by local collection vehicles or from transfer trailers and would be received and processed outdoors in the tipping area and not within the processing building, unless later specified as part of an enhanced odor mitigation plan. Outdoor storage time for co-collected materials is limited of 48 hours.

The outdoor organic waste processing area would have a capacity to store up to 10,000 cubic yards of received green waste and co-collected waste. Two stockpiles would be separated by fire lanes consistent with applicable fire district standards of 20 feet. The co-collected residential organics would be stockpiled on a pad for a maximum period of 48 hours, green waste for 7 days, and wood waste could be stored for up to 30 days. Chipping and grinding would generally occur on the day of receipt from co-collected residential organics, and up for 7 days for green waste. The processed co-collected organics material storage area would be constructed with an asphaltic concrete surface that will be graded to promote gravity flow drainage to the lined wastewater storage pond.

In preparation for the active composting phase, feedstock materials are pre-processed by grinding. Grinding of the feedstock reduces the volume of material, increases the surface area to promote biological decomposition, and provides a relatively uniform mixture of material and particle size. Feedstock may consist of any organic materials including green waste, clean dimensional lumber, agricultural materials (such as grape pomace), and food wastes. The amounts of these materials which makeup the feedstock 'recipe' are critical for both C/N ratio and most importantly bulk density. Green waste materials, with small percentages of food waste introduced to the mixture are ideal for the CASP technology, based on experience with the materials generated in the region. High percentages of food waste or other similar high-density feedstocks of the total recipe may lead to a feedstock that is too dense and does not allow for proper airflow through the CASP. Bulking materials, such as compost 'overs' (remaining material after screening) or wood waste can be added to increase the bulk density as required, however these materials also reduce the amount of capacity available for new inbound feedstocks.

The project proposes to utilize state-of-the-art extruder-type food processing technology to pre-process commercial organic waste. With a front-end loader, materials and organic waste would be loaded into an infeed bin to be mechanically separated from the residual waste. The resulting food waste, targeting less than 1% contamination by weight, would be blended with green waste either within the building or within the CASP composting area. This material would be mixed with green waste and/or bulking agent into a compost feedstock unit with blends of 10% to 25% food material to green material.

Adding pre-processing lines and processing equipment within the processing building could allow for adequate upfront processing of material before composting. The project would allow for reception and pre-processing of commercial organic waste and food material/mixed material pre-processing at the Facility. Statistics on the comingled commercial loads materials indicate loads have an average of approximately 30% by-weight non-compostable contamination rate, even when the best management practices are followed at the source. Transfer trailers, collection trucks, or end dump vehicles would transport unprocessed commercial organic waste to the project site where it would weigh in across certified scales. The truck would travel to a dedicated receiving and storage area within a designated bunker, within the processing building, where the material would be offloaded. Vectors would be controlled by good housekeeping practices within the enclosed building. Equipment would be used for material handling, size reduction and residual/contamination removal (such as film plastic) from the materials, wastes, and finish compost. Non-compostable residual material would be sorted and containerized on-site and transported for disposal at the landfill within 48 hours of being generated. The project also allows for pre-processed feedstock-ready material to be placed directly into the CASP composting area.

Commercial organic waste and food material/mixed material feedstock preprocessing will operate under a proposed 50,000 square foot covered area. Once received the organic waste would be load-checked for non-compatible wastes and contamination, which would be removed by manual floor sort for outdoor operations or mechanical processing equipment within the processing building. Material will be pre-screened using a disc screen to separate fine and coarse material. Coarse material will pass to a conveyor where removal of recyclables and contaminants can occur; the coarse material will proceed to a grinder, after which it may be screened. These up-front processing activities will occur under cover. Following feedstock processing, the material will be transported to the CASP composting area.

Preprocessing operations will depend upon feedstock origin. Generally, the following equipment will be required to process the various feedstocks:

1. Pre-processing equipment to support receipt of green materials;
2. Pre-processing equipment to support receipt of food material, mixed material, and organic waste;
3. Post-processing equipment to size and classify compost; and
4. On-site conveyance equipment connecting process areas to transport material.

Composting - Covered Aerated Static Pile (CASP) Technology

CASP systems are designed as a cost-effective system for controlling potential environmental impacts (including storm water contamination and odors) and maintaining optimal pile conditions during composting. It combines either a waterproof, synthetic fabric cover, or a cover consisting of finished compost and/or compost overs, with a computerized aeration control technology to optimize composting conditions for all types of feedstocks. When the impermeable cover is used, the forced aeration is typically under negative pressure, with the exhaust gas passing through a biofilter before discharge. In the case of a layer of finished compost or compost overs, the forced aeration is typically positive, with the layer of finished compost or other suitable material serving as the biofilter.

CASP composting system can either use a tough ultraviolet (UV) resistant and impermeable fabric cover, or operate with a layer of finished compost or compost overs in place of the synthetic membrane. The system is designed to receive incoming organic waste materials that have been ground, blended and moisture conditioned to just over 60%.

Following grinding, pre-processing and blending or receipt of feedstock-ready materials, the materials would be placed in static piles not exceeding 145 feet long by 33 feet wide and approximately 10 feet in height to meet Fire Code standards. The piles would be constructed using a loader to stack the material. Underlying the piles are perforated pipes (up to 32 pipes and 8 blowers per CASP unit, or fan group), which will be embedded in the concrete below to provide positive aeration to the bottom of the piles from adjacent air handling units or 'blowers' as part of the initial phases to heat up the mass. After the piles are constructed, they are covered with a minimum of 12 inches of compost material, which acts as a biofilter to reduce harmful emissions and potential odors. The compost cover itself is moisture conditioned through the active composting phase as needed to maintain its effectiveness in controlling emissions and odors.

CASP technology is superior to traditional composting methods, such as windrows because air is mechanically added to the piles as needed, based on continuous temperature monitoring, and a biological 'cap' or 'cover' of compost is placed over the pile to significantly reduce the uncontrolled emissions. Integral to the CASP operations is feedstock receiving and pre-processing as previously described, active composting with aeration, curing, screening and storing finished compost prior to sale. There are approximately 24 acres available at the Facility for composting activities. The active composting area would feature a 4.4-acre concrete paved pad upon final build-out. Once active composting is complete, the materials are then moved to a curing area, then to final screening and finishing at the compost storage until products are sold.

CASP - Aeration System

An active aeration system, which can help provide more ideal conditions for the composting process, is expected—on a per ton of compost basis—to reduce system footprint and retention time for composting, reduce movement of material once on-site and the amount of off-road equipment needed compared to traditional windrow composting, and reduces odor and volatile organic compound (VOC) emissions. The system would be designed to satisfy the requirements of the SJVAPCD Rule 4566, which regulates organic material composting operations.

The CASP aeration process is highly automated and controlled. The composting piles are instrumented with wireless automated temperature probes for ongoing temperature monitoring throughout the active composting process. Based on monitoring and operational protocol, the aeration system is activated to induce airflows through the CASP. The aeration timing and flow rates are varied as needed to optimize the composting process and minimize odors.

The proposed CASP technology has been determined to be the best available control technology (BACT) by the SJVAPCD. The CASP system includes infrastructure to push air flow into the compost material ('positive aeration'), which may include both primary and secondary batch systems. The positive air heats up the composting process as needed and reduces regulated emissions during the active composting process.

Material taken to the CASP composting area would be subject to forced aeration to promote aerobic composting. The CASP system will utilize a positive aeration (i.e. pushing air through the composting material), where the composting material will be covered with a layer of finished compost to provide control of emissions and odors. Illustrated in the figures below, aeration is provided through spargers in the aeration floor system that blows air up through the composting material.

Figures (1-3) below show examples of the aeration floor system that will be utilized at the Facility.

Figure 1:Aerated Static Pile with Aeration Floor

Figure 2: Aeration floor compost system (with spargers)

Figure 3:Aerated Static Pile with Fan Group and Ducting

The CASP process is thought of as having a primary and secondary phase during the active composting. During the primary phase, air flow is higher because the bacterial oxygen demand is greater initially.

Composting piles remain in the primary CASP phase for 24 days prior to being moved by a bucket loader or conveyance system to the secondary CASP phase for another 24 days, with some variation in composting time depending on feedstock composition, temperature, moisture, season of the year, and stability of the compost at the end of the active phase. The secondary CASP serves to ensure that adequate decomposition is attained in the event uniform composting was not achieved during the primary CASP phase. After secondary CASP, the material is moved to the curing pad to mature.

Curing

When the active composting phase is complete, the curing phase begins. The composting piles are dismantled and hauled to the curing area. Curing allows the compost material to mature and is essential in the development of a high-quality product. Curing piles are constructed with front loaders and are approximately 20 feet wide, 200 feet long and 15 feet high. Material placed in the curing area will typically cure for 3 months or more, as little as 24 days, with an average of 40 days. Moisture may also be added to the curing windrows as needed to maintain suitable curing conditions and control dust. Once the cured material is considered final product, it is moved by front loaders to the finished product processing area to be screened and then is placed in the finished product storage area. Some finished compost will be placed in a sales area for sale to small quantity customers, while other finished product will be loaded directly from the finished product storage area for sale to larger-quantity buyers.

Screening

After the curing process, the composted materials are screened based on customer demand, but typically to 3/8-inch and smaller, to remove oversize particles and contaminants (plastic, glass, etc.) and provide a final compost product specific for its end use. Through this process, an over-sized finished compost (>3/8-inch typically) is also produced through the screening effort. This material is typically referred to as 'overs' and they generally consist of composted pieces of woody material. There are many uses for 'overs' such as composted mulch, biofilter media, erosion control, compost bulking agent, and soil amendment, but due to the rather low nitrogen content and size of this material the value tends to be significantly less than the 'unders' fraction. In addition, film plastic contaminants are a common problem in composting residential wastes and film plastics tend to be concentrated into the overs fraction of the finished compost process. Because of this contamination some end uses of 'overs' may be limited. Overs are not generally considered a residual; they are a valuable part of the finished compost. But depending on inbound feedstock contamination and the natural process of concentrating film plastics into the overs fraction through screening a portion of overs will generally end up as landfill ADC due to this contamination.

C. Facility Schematics

18227.c. A schematic drawing of the facility showing layout and general dimensions of all processes utilized in the production of compost including, but not limited to, unloading, storage, processing, parking, and loading areas.

Appendix A – Site plan depicts the overall composting site and identifies the operating areas described above. Appendix A – Site plan provides further detail for the composting facility itself, presenting the site plan for the CASP system, the receiving and processing area, compost curing areas and finished product processing and storage areas, in addition to the lined storm water storage pond and other elements of the operations.

D. Nuisance Control Methods

18227.d. A description of the proposed methods used to control leachate, litter, odors, dust, rodents, and insects, for example, how the operator will store, process and incorporate food material and vegetative food material into windrows or static piles, timeframes for inclusion of material, collection and containment of leachate, passive and active vector controls, methods to monitor effectiveness of control measures.

Odor reduction is accomplished by practicing "good house-keeping" in all areas of the composting facility. It is essential to clean up the feedstock receiving and mixing areas daily and eliminate areas of standing water. A daily walk-through the composting facility is important to identify potential sources of odor. In addition, equipment used to mix and process feedstock materials will be routinely cleaned to minimize exposure of raw materials to the open air.

Composted material is cured for an average of 40 days, and positive aeration may be employed during the curing process. Curing materials may be covered in permeable, waterproof tarps during rain events to prevent contact with storm water.

The biofilter cover layer is made of finished compost and is used to cover the piles undergoing composting. The preferred thickness of this layer is 6 – 12 inches thick. This layer is kept moist in order to maximize its odor and emissions reductions capability. The composting facility will submit to monthly inspections by the LEA to verify compliance with state minimum standards for this operation. The LEA is the Tulare County Environmental Health Division.

E. Emergency Power and Equipment Provisions

18227.e. A description of the proposed emergency provisions for equipment breakdown or power failure.

Electricity will be provided by either PG&E or through an agreement with the County to use electrical power generated on-site at the landfill gas energy facility. Service would be extended to the site and an electrical utility pole would be constructed on-site to provide power to run composting equipment, processing equipment, blowers, and an electric grinder.

A preventative maintenance program will be followed to provide for the timely identification and correction of equipment and Facility problems. The preventative maintenance program includes weekly cleaning of refuse and litter from the Facility equipment and the processing areas. A routine site walk will be conducted by Facility personnel to identify areas in need of cleaning or repair. Regular maintenance of vehicles and equipment, including changes of oil and other fluids, tire maintenance, and minor equipment breakdowns will be managed by the operator's personnel in a timely manner.

Composting operations equipment will be maintained under a program that focuses on identifying and correcting equipment problems before breakage or failure occurs. This program allows equipment maintenance to be scheduled for weekends or after hours to avoid disruptions to the processing operations. The inspection, maintenance, and repair program will be in accordance with the equipment manufacturers' recommendations.

Minor equipment breakdowns will be managed by the operator's personnel and typically corrected immediately. The operator will maintain limited storage of parts for onsite equipment repair and utilizes services of local heavy-equipment companies for regular maintenance and emergency repairs of equipment. These companies have technicians and parts available at their service centers and provide leasing of replacement equipment if repairs cannot be made in a timely manner.

If an equipment breakdown prevented the timely processing of incoming material, haulers would be notified that the Facility could not accept material and on-site material could be transferred to an alternate permitted composting facility. Additionally, Equipment from the other County disposal sites will constitute back-up in cases of equipment malfunction or special needs to ensure compliance with all regulatory requirements.

F. Storage Capacity, Pile Sizes, and Storage Times.

18227.f. A description of the storage capacity, feedstock pile sizes, and anticipated maximum and average length of time compostable materials will be stored at the facility.

The outdoor organic waste processing area would have a capacity to store up to 10,000 cubic yards of received green waste and co-collected waste. Two stockpiles would be separated by fire lanes consistent with applicable fire district standards of 20 feet. The co-collected residential organics would be stockpiled on a pad for a maximum period of 48 hours, green waste stored for up to 7 days, and wood waste could be stored for up to 30 days. Chipping and grinding would generally occur on the day of receipt from co-collected residential organics, and up for 7 days for green waste. Pile sizes shall not exceed 25 feet in height, 150 feet in width and 250 feet in length.

G. Equipment list

18227.g. A description of compostable materials handling equipment used at the facility including type, capacity, and number of units.

See Table 2.

Table 2: Composting facility equipment list

Equipment	Process Used In	Power Source
Fuel Truck	Refueling Equipment (Off-road and On-Road Equipment)	Diesel
2 Tractors	Material Transfer (Off-road Equipment)	Diesel
Excavator	Material Transfer (Off-road Equipment)	Diesel
6 Loaders	Material Transfer (Off-road Equipment)	Diesel
Office Vehicle	Composting Process (Off-road Equipment)	Diesel
Sweeper Truck	Composting Process (Off-road Equipment)	Diesel
2 Water Trucks	Composting Process (Off-road Equipment)	Diesel
Shop Truck	Composting Process (Off-road Equipment)	Diesel
2 Grinders	Feedstock Products (Mulching)	Electric
2 Conveyors	Feedstock Products (Mulching)	Electric
Pre-Processing Line Shredders/Grinders	Compost Processing (Feedstock Pre-processing line)	Electric
Pre-Processing Line Conveyors	Compost Processing (Feedstock Pre-processing line)	Electric
Food Waste Processing Equipment	De-package and remove contaminates to produce slurry feedstock	Electric
2 Processing Trommel	Compost Processing (Finished Processing	Electric
1 Film Plastic Separator	Compost Processing (Finished Processing line)	Electric
Processing Line Sizing Screen	Compost Processing (Finished Processing line)	Electric
Processing Line Conveyors	Compost Processing (Finished Processing line)	Electric
Shop Truck	Composting Process (Off-road Equipment)	Diesel
2 Processing Trommel	Compost Processing (Finished Processing line)	Electric
1 Film Plastic Separator	Compost Processing (Finished Processing line)	Electric
Processing Line Sizing Screen	Compost Processing (Finished Processing	Electric
Processing Line Sizing Screen	Compost Processing (Finished Processing	Electric

H. Annual Capacity

18227.h. Anticipated annual operation capacity for the facility in cubic-yards.

The total targeted tons for reducing 50% of all organic waste by 2022 and 75% of all organic waste by 2025 for SB 1383 compliance is calculated based on current disposal, using 2014 waste characterization and tonnage amounts as the baseline. A statewide fair-share model has been calculated and is provided in Table 3. Population growth following the California Department of Finance projections is factored in from 2014 to 2035. The composting facility will be designed to store up to ***200,000 cubic yards*** of organic material on-site that would have otherwise been landfilled.

Table 3: New Tons Organics Diversion

	2022 50% Reduction	2025 75% Reduction	2030 75% reduction	2035 75% reduction
Food Waste Diversion (tons)	69,397	84,652	92,663	100,675
Green Waste Diversion (tons)	22,311	27,216	29,791	32,367
Wood Waste Diversion (tons)	29,686	36,211	39,638	43,066
Compostable Paper Diversion (tons)	16,010	19,529	21,378	23,226
TOTAL:	**137,405**	**167,608**	**183,471**	**199,334**

In addition, to satisfy the jurisdiction's requirements under AB 876, the amount of organic waste that is generated up to 2035 was determined. This identifies 15 years of organic waste processing capacity using the CalRecycle Disposal Reporting System and Waste Characterization Studies. Based on the existing permits from CalRecycle SWIS database, currently there is a maximum of 120,375 tons of identified organics processing capacity in Tulare County using current tons being diverted, mostly green waste and wood waste. This capacity would serve Tulare County's immediate need for 2020's requirements but would need to expand by 2022 to accommodate the new tons diverted when the SB 1383 regulations become effective. Tulare County needs a minimum of 137,000 tons of new capacity in 2022, 167,000 tons of new capacity in 2025, and up to 200,000 tons of new capacity by 2035.

I. Peak Loading

18227.i. A description of provisions to handle unusual peak loadings.

It is estimated that the average and seasonal peak flows would be ***770 TPD and 1000 TPD***, respectively. The amount of residential food material varies from 3% to 7%, with seasonal peaks up to 10%, of the green waste volume, based on seasonal factors and special holiday events. The combined capacity of the CASP composting system is 200,000 TPY. The Facility is designed to handle that level of peak loading.

J. Nonmarketable Residue Final Disposal

18227.j. A description of the proposed method for storage and final disposal of nonrecoverable or nonmarketable residues.

Non-compostable residual material would be sorted and containerized on-site and transported for disposal at the landfill within 48 hours of being generated.

K. Water Supply

18227.k. A description of the water supplies for process water required.

Two existing wells are available on the Landfill property for water supply. The "Cotton Gin Well" is located in the south-central portion of the property and has a well yield ranging from approximately 400 to 900 gallons per minute (GPM). This well is currently used for the Landfill operations. The average daily water use for the landfill operations is approximately 118,000 gallons per day (GPD). As for the composting operations, during a typical summer day, average water demand for a 800 tons per day (TPD) (i.e., 200,000 TPY) CASP composting facility is 80,000 GPD. These usages equate to an average daily demand for both the Landfill and Facility operations of approximately 200,000 GPD. The Cotton Gin Well's 400 to 900 GPM yield is sufficient to accommodate this demand.

The second on-site well ("Northeast Well") is in the northeast corner of the property and is currently used for contingency purposes only. No information is currently available regarding its well yield characteristics. However, based on the local hydrogeologic setting, it is reasonable to conclude that its yield is likely on the order of several hundred GPM, which would also be sufficient to service the composting operations.

The Facility will include a lined storm water storage pond for the collection of storm water run-off generated from the entire composting facility, except for the CASP concrete pad, which will be serviced by an AST. Storm water run-off from selected earthen side slopes adjoining the composting facility will also be diverted to the lined storm water storage pond. Storm water retained in this pond will be available for use in the composting operations. Based on water balance calculations for the Facility, it is estimated that the pond storage can supply approximately 15 – 30% percent of the annual water demand, depending upon climatic conditions and operational capacity of the composting operations.

A 60,000-gallon dedicated water tank for fire control purposes will be located next to the processing building. The Facility will also be equipped with a pressurized fire hydrant system for the various compost operations areas.

L. Responsible Party

18227.l. Identification of person(s) responsible for oversight of facility operations.

Contact Person: Bryce Howard
Director – Tulare County Solid Waste Department
5955 S. Mooney Blvd. Visalia, CA 93277

M. Proposed Site Restoration Activities

18227.m. A description of the proposed site restoration activities, in accordance with section 17870.

(a) The operator shall provide the EA written notice of intent to perform site restoration, at least 30 days prior to beginning site restoration.

(b) The operator(s) and owner(s) shall provide site restoration necessary to protect public health, safety, and the environment.

(c) The operator shall ensure that the following site restoration procedures are performed upon completion of operations and termination of service:

(1) The operation and facility grounds, ponds, and drainage areas shall be cleaned of all residues including, but not limited to, compost materials, construction scraps, and other materials related to the operations, and these residues legally recycled, reused, or disposed of.

(2) All machinery shall be cleaned and removed or stored securely.

(3) All remaining structures shall be cleaned of compost materials, dust, particulates, or other residues related to the composting and site restoration operations.

A written notice and site closure plan will be submitted to the RWQCB at least 90 days prior to ceasing composting operations. Additionally, a 30-day written notice of intent to perform site restoration will be provided to the Tulare County Local Enforcement Agency (LEA).

- The operation and Facility grounds, lined storm water storage pond, and drainage areas will be cleaned of all residues including, but not limited to, compost materials, construction scraps, and other materials related to the operations and these residues will be legally recycled, reused, or disposed of at the landfill;
- All machinery will be cleaned and removed or stored securely;
- All remaining structures will be cleaned of compost materials, dust, particulates or other residues related to the composting and site restoration operations; and
- The liner components at the base of the lined storm water storage pond will be physically removed to expose the subgrade, and the subgrade subsequently scarified to a minimum depth of 12 inches to enhance infiltration characteristics. The liner material removed will be properly disposed of at the Landfill.

At the conclusion of the site closure and restoration activities in compliance with the RWQCB and CalRecycle requirements, the Facility will notify both the RWQCB and the Tulare County Local Enforcement Agency (LEA).

N. Odor Impact Minimization Plan

18227.n. An Odor Impact Minimization Plan pursuant to section 17863.4 and, if applicable, an Odor Best Management Practice Feasibility Report and associated plan pursuant to section 17863.4.1. The EA may require the operator to revise the Odor Impact Minimization Plan and, if applicable, the Odor Best Management Practice Feasibility Report and associated plan if the operator proposes to accept new feedstock, such as food material or vegetative food material.

SJVAPCD recommends that odors associated with a proposed project should be evaluated on a case-by-case basis and suggests a two-part process for evaluating a project's potential odor impacts. Initially, the proximity of a potential odor generator with respect to sensitive receptors (residences, schools, day care centers, hospital, etc.) should be compared to District recommended odor screening distances. For composting facilities, SJVAPCD recommends more detailed analysis of potential odor impacts if sensitive receptors are located within one mile of an odor source. If receptors are located within the recommended screening distance, SJVAPCD suggests that the odors should be assessed qualitatively, taking into consideration project design elements, local meteorological conditions, and the nature of the odor source. SJVAPCD also recommends reviewing historical odor complaints in the project vicinity. An Odor Impact Minimization Plan will be prepared and is required to be part of the SWFP application package.

Please find a copy of the Odor Impact Minimization Plan for the Facility in Appendix B.

State Minimum Standards for Solid Waste Handling and Disposal

General Design Requirements

17406.2 (a) The design of a new operation or facility shall utilize expert advice, as appropriate, from persons competent in engineering, architecture, landscape design, traffic engineering, air quality control, and design of structures.

(b) The design shall be based on appropriate data regarding the expected service area, anticipated nature and quantity of wastes to be received, climatological factors, physical settings, adjacent land use (existing and planned), types and number of vehicles anticipated to enter the operation or facility, adequate off-street parking facilities for transfer vehicles, drainage control, the hours of operation and other pertinent information. If the operation or facility is to be used by the general public, the design shall take account of safety features that may be needed to accommodate such public use.

(c) The operation or facility shall be designed in such a manner as to restrict the unloading area to as small an area as practicable, provide adequate control of windblown material, minimize the propagation or attraction of flies, rodents or other vectors and the creation of nuisances by reason of solid wastes being handled at the operation. Other factors which shall be taken into consideration are: dust control, noise control, public safety, and other pertinent matters related to the protection of public health at the operation or facility.

(d) In reviewing the design of a proposed operation or facility, the EA may require the applicant to describe how he or she has complied with applicable local and state requirements regarding odor control measures, personnel health and safety, and sanitary facilities.

(e) Solid waste storage containers shall be durable, easily cleanable, designed for safe handling, and constructed to prevent loss of wastes from the container during storage. If such a container is used to store garbage, other wet or liquid producing wastes, or wastes composed of fine particles, such container shall in all cases be nonabsorbent and leak-resistant. Unloading areas shall be easily cleanable, designed for safe handling and constructed to prevent loss of wastes.

All design aspects of the Facility will be prepared by qualified professionals. The design of the Facility is based on climatological factors, physical setting, adjacent land use, types and number of vehicles anticipated to enter the Facility, drainage controls, and hours of operations.

The composting facility will provide adequate control of windblown material, minimize the propagation or attraction of vectors, and the creation of nuisances. Dust control, noise control, public safety, and other pertinent matters related to the protection of public health at the Facility will be taken into consideration.

Feedstock Storage parameters

The organic waste would be delivered to the proposed composting facility by collection vehicles, transfer trailers and self-haul vehicles. Wood waste would be stored outdoors for up to 30 days in a designated area. Green waste would be stored outdoors for up to 7 days in a designated area. Co-collected residential organic wastes would be stored outdoors for up to 48 hours. Once received the organic waste would be load-checked for non-compatible wastes and contamination, which would be removed by manual floor sort for outdoor operations or mechanical processing equipment within the processing building.

The outdoor organic waste processing area would have a capacity to store up to 10,000 cubic yards of received green waste and co-collected waste. Two stockpiles would be separated by fire lanes consistent with applicable fire district standards of 20 feet. The co-collected residential organics would be stockpiled on a pad for a maximum period of 48 hours, green waste for 7 days, and wood waste could be stored for up to 30 days. Chipping and grinding would generally occur on the day of receipt from co-collected residential organics, and up for 7 days for green waste. The processed co-collected organics material storage area would be constructed with an asphaltic concrete paved surface that is graded to promote gravity flow drainage to the lined storm water storage pond. Additionally, commercial organic waste and food material/mixed material feedstock preprocessing will operate under the proposed 50,000 square foot covered area. Once received the organic waste would be load-checked for non-compatible wastes and contamination, which would be removed by manual floor sort for outdoor operations or mechanical processing equipment within the processing building and stored for no more than 48 hours. The project allows for pre-processed feedstock-ready material to be placed directly into the CASP composting area.

Temperature & Moisture Control – Pathogen Reduction

The composting process produces heat as a result of bacteriological metabolism. Initially, the heat generated by mesophilic bacteria elevates the temperature to about 50°C (122°F) or more. As the mesophilic bacteria population decreases due to the high temperature, thermophilic bacteria take over and elevate the temperature up to 60°C (140°F) or more. Over time and under the proper environmental conditions (i.e., the presence of oxygen, water, and nutrients), the microorganisms are self-limiting and the temperature stabilizes at between 55°C (131°F) and 75°C (167°F).

Temperatures would be monitored to ensure that the prescribed regulatory period of 72 consecutive hours at no less than 55°C (131°F) are met for the Process to Further Reduce Pathogens (PFRP). Maintaining the proper moisture content for a composting pile is also important; for the composting operations, the optimum water content lies around 50%. If the pile is too dry, the microbes go dormant; therefore, moisture is added to the feedstock prior to inclusion into the CASP operation in order to maintain the proper water content. If the pile is too wet, saturated conditions can cause the pile to become anaerobic due to lack of oxygen circulation. The optimum pH for composting is between 6.0 and 7.5 (near neutral).

Composting Technology and Odor Management

Most odors at composting facilities result from the incomplete breakdown of organic materials. However, composting odor can be controlled at the source by implementing best management practices and good process control. Implementation of an Odor Impact Minimization Plan (Appendix B) will reduce this potential impact to less than significant. The composting operation will be subject to the requirements of the SWFP, SWRCB General Order (WQ 2015-0121-DWQ), and a Permit to Operate from SJVAPCD. The proposed composting method of an aerated static pile, combined with biofiltration through a layer of finished compost, will abate emissions and odors.

The Operator will utilize the CASP method of composting. With CASP composting, fresh air (i.e., oxygen) is pushed through the compost pile to: 1) maintain aerobic conditions throughout the pile; and 2) minimize the need for pile turning.

Odors will be further mitigated by monitoring feedstock as it enters the Facility. Feedstock determined to be odoriferous, non-compostable, hazardous, or otherwise inappropriate for composting will not be introduced into the system. Land uses surrounding the site are characterized by intensive agricultural operations. Tree crops are to the north of the landfill property, while row crops are immediately to the east and south. A dairy is located to the west.

Pre-Processing

Material arrives at the Facility at the composting processing and storage area, where it is pre-screened using a disc screen to separate fine and coarse material. This coarse material is then ground and screened again using a trommel screen. A conveyor may be incorporated to remove inorganic material by manual sorting. After preprocessing is complete, material will either be composted through the CASP system, cured, and stored before final sale.

Critical Mix Parameters

Material arriving for aerated static pile composting will come from a variety of sources and will likely contain a combination of green waste, food waste, and other organic materials. Given the high moisture content of food waste, the operator may elect to blend greater amounts of green waste with food waste rich feedstocks to ensure proper moisture control and optimal composting. Typically, a balance of less than 20% food waste by weight will be the final blend for material entering the CASP system.

Nutrient Balance and Heat Production

Heat is generated during the composting process as a result of the rapid decomposition of organic compounds that are readily available as substrates for microbial growth. Readily available forms of carbon include sugars, starches, fats and proteins. Less available forms of carbon include hemicellulose, cellulose and lignin, all of which decompose at a much slower rate.

Inorganic nutrients such as nitrogen, potassium and phosphorous are required for microbial growth. In most mixes, nitrogen is the limiting component. Typically, the C:N ratio should be between 25:1 and 35:1. A lower C:N ratio (i.e., high nitrogen content) can result in the production of odorous nitrogen containing compounds such as amines and ammonia during composting. At higher C:N ratios, nitrogen may not be sufficient for active, thermophilic composting.
The desired heat range in an active composting pile is 131^{o}F to 150^{o}F. Pile temperatures that exceed ~160^{o}F will result in slower decomposition of the feedstocks.

Aeration of the Compost Pile to Maintain Aerobic Conditions

The operator will utilize positive aeration. The proposed CASP technology will be an aerated static pile system with a finished compost layer over the composting organics or a stand-alone biofilter to control odor and emissions. A hard surface is constructed with embedded air spargers that provide air flow through the composting material. Air spargers are risers that deliver air through below grade pipes underneath the concrete aeration slab. It is also possible to provide aeration using perforated pipes on grade upon which the composting feedstock is placed. At the composting facility, the design is to use a concrete aeration slab to construct the hardscape within which the air spargers will be embedded.

Public Access

At the Facility entrance, an attendant will provide appropriate and visible signage and instruction and will direct public vehicles to the appropriate areas. The composting facility will be open to self-haul vehicles, so there is public access in the tipping area. Additionally, the public will have access to the compost and compost product sales area.

Fire controls

Fire protection services to the compost project site would be provided by the Tulare County Fire Department substation (south of the city of Dinuba), which is approximately 6 miles north of the site. The project may be required to meet access and other fire safety standards established by the Tulare County Fire Department. The project as designed would comply with the following California Fire Code (CFC) requirements:

- Pile sizes shall not exceed 25 feet in height, 150 feet in width and 250 feet in length. (2803.3 CFC)
- Piles shall be separated from adjacent piles by approved fire apparatus access roads. (1908.4 CFC). The project’s fire lanes are designed to be 20 feet wide.
- Static piles shall be monitored by an approved means to measure temperature within the static piles. Internal pile temperatures shall be monitored and recorded weekly. (2808.6 CFC)
- Fire extinguishers with a minimum rating of 4A 60B: C shall be provided on all vehicles, equipment operating on the piles, and at all processing equipment. (2808.8 CFC)

- All access routes shall be all-weather and certified by an engineer that they will support the load of a 75,000 lb. piece of apparatus. (D102.1, Appendix-D CFC)
- The Facility shall maintain a dedicated water tank with appropriate hook-ups for firefighting purposes capable of delivery at least 500 GPM at 20 psi for 2 hours. The water tank shall be maintained in ready state and shall remain unobstructed at all times.
- The storage, accumulation, and handling of combustible materials and control of vegetation shall comply with Chapter 3 of the fire code.

Operating Standards

Burning Wastes and Open Burning [14 CCR 17407.1]

17407.1 - (a) If burning wastes are received at an operation or facility, they shall be separated from other wastes and deposited in a safe area, spread, and extinguished. A safe area is defined as being away from unloading, transfer, or processing areas, structures on adjacent properties and other fire hazard areas.

Burning wastes are not accepted and are not typically found in green waste. Furthermore, the green waste material is aerated and watered in the normal course of processing, reducing this risk of fire.

Cleaning [14 CCR 17407.2]

17407.2 (a) Operations, facilities, and their equipment, boxes, bins, pits and other types of containers shall be cleaned using the following schedule, or at a lesser frequency, approved by the EA, in order to prevent the propagation or attraction of flies, rodents, or other vectors:(1) all operations and facilities shall be cleaned each operating day of all loose materials and litter; (2) all operations or facilities that operate 24 hours per day must clean the operations or facilities at least once every 24 hours.
(b) The entrance and exit shall be cleaned at a frequency which prevents the tracking or off-site migration of waste materials.

The composting facility will be maintained regularly by site personnel. A daily site walk will be conducted by site personnel. Loose materials and litter will be removed daily from operations areas. The access road will be policed daily to prevent the offsite migration of waste materials.

The processing building's floor will be cleaned as necessary to prevent the generation of odors and the attraction of vectors. This will be accomplished using wet (pressure washer) and dry cleaning methods (i.e., sweeping, scraping with front loader bucket, etc.). The processing building will be equipped with a floor drain system that will collect the washdown water. This system will include drain inlets and subsurface piping that will convey the collected water to a common sump. The sump will be equipped with an automatic pumping system that will pump the collected water to an aboveground storage tank (AST) located outside and adjacent to the processing building.

Drainage Control

17407.3 (a) Drainage at all operations and facilities shall be controlled to:
(1) minimize the creation of contact water;
(2) prevent to the greatest extent possible given existing weather conditions, the uncontrolled off-site migration of contact water;
(3) protect the integrity of roads and structures;
(4) protect the public health; and
(5) prevent safety hazards and interference with operation

Site improvements would be required by the SWRCB as part of the approval process for this project. The composting facility will be permitted under the General Order. All receiving, composting, processing, and storage areas will be constructed with concrete or asphaltic concrete paved surfaces. These areas will be equipped with drainage conveyance features (ditches, swales, curbing, etc.) that will be lined or constructed with materials meeting the General Order hydraulic conductivity specifications (1×10^{-5} centimeters per second or less). All drainage from these conveyances' areas will drain to the lined storm water storage pond. The lined pond construction will comply with the General Order specifications and include (in ascending order) a prepared subgrade, a geosynthetic clay liner (GCL), and a 60-mil high-density polyethylene geomembrane. The liner system will also be equipped with a pan lysimeter monitoring device completed under the lowest point of the pond.

The CASP composting area will be self-contained with respect to leachate and storm water run-off. This concrete pad will be equipped with interior swales and perimeter concrete walls and curbs to collect all leachate and storm water run-off generated within the pad and convey the collected water to a series of sumps for eventual pumping into an AST to be located in the southwest corner of the CASP composting area.

Accumulated storm water will be used as process water for the compost operation.

Dust Control [14 CCR 17407.4]

17407.4.(a) The operator shall take adequate measures to minimize the creation, emission, or accumulation of excessive dust and particulates, and prevent other safety hazards to the public caused by obscured visibility. The operator shall minimize the unnecessary handling of wastes during processing to prevent the creation of excessive dust. Measures to control dust include, but are not limited to: reduced processing, periodic sweeping and cleaning, misting systems or ventilation control. One or more of the following may be an indication that dust is excessive:
(1) safety hazards due to obscured visibility; or
(2) irritation of the eyes; or
(3) hampered breathing;
(4) migration of dust off-site

The operator will develop, and implement a Dust Control Plan, which would reduce fugitive dust impacts. Covered composting is in a controlled environment and does not generate dust in significant quantities. Dust generation during processing operations will be controlled by use of sprinklers, misters and a water truck as needed. The material is not sprayed so much as to generate leachate from the compost piles. Grinding and screening operations will be suspended during periods of high winds, winds exceeding 20 miles per hour, or as necessary in response to dust emissions.

Hazardous, Liquid and Special Wastes [14 CCR 17407.5]

17407.5 (a) An operation or facility shall not intentionally accept or store hazardous wastes, including batteries, oil, paint, and special wastes, unless it has been approved to handle the particular waste by the appropriate regulatory agencies. Such approvals shall be placed in the operating record.
(b) At operations and facilities where unauthorized hazardous wastes are discovered, control measures as are necessary to protect public health, safety and the environment, such as elimination or control of dusts, fumes, mists, vapors or gases shall be taken prior to isolation or removal from the operation or facility,
(c) Liquid wastes and sludges shall not be accepted or stored at an operation or facility unless the operator has written approval to accept such wastes from the appropriate agencies and the EA. The EA shall authorize acceptance of these wastes only if the operation, facility, and the transfer vehicles are properly equipped to handle such wastes in a manner to protect public health, safety, and the environment.

Only non-hazardous organic compost feedstocks are accepted at the composting facility. The operator will work with haulers to ensure that Household Hazardous Waste (HHW) and special wastes are not collected. Typical unacceptable materials include paint containers, aerosol cans, batteries, and friable asbestos. Should these materials be discovered they will be segregated with particular care to eliminate or control dust, fumes, vapors, or gasses to protect worker and public safety, prior to their removal from the Facility.

Load checking [14 CCR 17409.5]

17409.5 – (a) The operator of an attended operation or facility shall implement a loadchecking program to prevent the acceptance of waste which is prohibited by this Article. This program must include at a minimum:
(1) the number of random loadchecks to be performed;
(2) a location for the storage of prohibited wastes removed during the loadchecking process that is separately secured or isolated;
(3) records of loadchecks and the training of personnel in the recognition, proper handling, and disposition of prohibited waste. A copy of the loadchecking program and copies of the loadchecking records for the last year shall be maintained in the operating record and be available for review by the appropriate regulatory agencies

The operator inspects loads to ensure that HHW and special wastes are not collected with the incoming green waste. Load checking will be done by spreading out the material and having a qualified employee sort through the material, looking for and removing contaminants. The employee who will perform the load checks and sorting will be trained in the proper method of spreading out material to make sorting most effective, what contaminants to look for and the proper method of disposing of possible contaminants in the load. The operator will keep records of load checks performed, the contaminants found, how the contaminants were disposed of, and the loads rejected. The HHW storage building conforms to the requirements of 22 CCR 66265.170, and HHW will be transported by the operator or a licensed vendor to a permitted facility for proper handling and/or disposal.

Compost site personnel will also document periodic load checks on a daily basis. Load checking inspections are recorded on a “Solid Waste Load-Checking Program” form which is placed into the operating record. Refuse site personnel are trained to identify hazardous and unacceptable materials through the Tulare County Hazardous and Prohibited Waste Recognition Training Program. This training is documented on a "Record of Training" form and placed into the operating record. Under the program, all loads are inspected for inappropriate contents and to ensure they do not contain prohibited waste types. Haulers found with unacceptable material in their loads are informed by the Refuse Site Caretaker of their responsibility to remove the material from the site. Haulers requesting an alternative for disposal are directed to contact the Environmental Health Services Division of the Tulare County Health and Human Services Agency at (559) 733-6441

The composting facility will have an independent load checking program. Composting operation personnel will maintain the load checking program to eliminate hazardous and unacceptable materials. The program will screen for prohibited waste which includes: pesticide containers, barrels, free liquids, solvents or greases, lead-acid batteries, ballasts from fluorescent light fixtures, liquid filled transformers, and capacitors associated with large electrical motors. Any questionable wastes are deemed unacceptable. Records of load checks and the training of personnel in the recognition, proper handling, and disposition of prohibited waste are kept. A copy of the load checking program and copies of the load checking records for the last year are maintained on file in the administrative office and are available for review by the LEA during normal business hours. HHW will be storage in a storage locker located within the processing building. The HHW storage containers and the HHW storage area conform to the requirements of 22 CCR 66265.170, and HHW will be transported by the operator or a licensed vendor to a permitted facility for proper handling and/or disposal.

Contingency Plan for Accidental Discharge

Inappropriate wastes illegally deposited at the site will be assessed by the composting site supervisor or manager in accordance with the following contingency plan developed by the County.

1) Determine the nature of the unacceptable item:
    a. non-hazardous liquid
    b. unknown or hazardous liquid or solid
2) After the Refuse Site Caretaker determines the nature of the unacceptable item, the following actions will be taken:
    a. <u>Non-Hazardous Liquid</u> - The composting site supervisor or program manager should recover as much non-hazardous liquid as is possible by first removing any containers with free product. The effected dumping area should accept no additional refuse in order to encourage drying prior to daily cover activities. Any containers should be opened and allowed to dry prior to disposal. Paint cans less than one-quarter full can be sufficiently air-dried in the original can. Paint in cans deeper than one-quarter full should be spread to dry prior to disposal. This can be accomplished by pouring the

paint in a shallow container of larger area, thereby assuring that the center core will be fully dry when disposed.

b. Unknown or Hazardous Liquid or Solid – Operator personnel will recover any sealed containers that cannot leak and which do not show evidence of previous leakage. Recoverable containers will be placed in a secure shaded area away from the public. Any open containers of a product intended for consumer or household use that are familiar to the operator may also be removed from the active face and stored in a shaded, secure area. Individual open containers should be isolated from other open containers to prevent potential chemical interactions. Locations where a spill has taken place will be isolated from all public activities and County personnel until declared clear by a Hazardous Waste Specialist. Any open containers of consumer products that are not familiar to the Refuse Site Caretaker should also be isolated from public activity until declared clear by County personnel or a Hazardous Waste Specialist.

Operator Personnel reads labels from containers in the secured area and makes an estimate of the size of the area affected by any spill prior to contacting the composting site supervisor. The composting site supervisor is given instruction as to who will be authorized to enter the site to perform clean-up, packaging, and shipment of the products. These activities will normally be conducted by a hazardous waste hauler under contract with the County.

Reporting

The Compost Site Supervisor completes an incident report for each incident in which inappropriate materials were involved. The operator provides notification to the LEA, the Director of the California Department of Toxic Substances Control or its delegated agent, and the RWQCB, if a regulated hazardous waste is discovered at the Facility.

Litter Control [14 CCR 17408.1]

17408.1- Litter at operations and facilities shall be controlled, and routinely collected to prevent safety hazards, nuisances or similar problems and off-site migration to the greatest extent possible given existing weather conditions.

The area will be maintained and kept free of litter and other refuse. Windscreens or litter fences will be used during periods of wind to contain blowing waste, such as paper, plastics, and other light debris. Additionally, the composting facility will be located 20’ below grade, which will minimize wind-blown litter.

Medical Wastes [14 CCR 17408.2]

17408.2 - Medical waste, unless treated and deemed to be solid waste, which is regulated pursuant to the Medical Waste Management Act (commencing with Section 117600 of the Health and Safety Code), shall not be accepted at an operation or facility, unless approved by the appropriate regulatory agency.

Medical wastes will not be accepted at the composting facility.

Noise Control [14 CCR 17408.3]

17408.3 - Noise shall be controlled to prevent health hazards and to prevent nuisance to nearby residents. Measures to control noise include but are not limited to: posting of warning signs that recommend or require hearing protection; separation by barriers that limit access to authorized personnel only; or, enclosures to reduce noise transmission. Compliance with specific provisions regarding noise control in a local land use approval, such as a conditional use permit or CEQA mitigation measures, shall be considered compliance with this standard

Noise has typically not been a significant issue at the site primarily due to the relatively few residences in proximity to the landfill. Noise is generated at the landfill mainly by waste delivery vehicles, tractor-trailers, and van-type delivery trucks, along with the sounds of the landfill processing and disposal equipment. Hearing protection is provided to employees at the Facility in order to help guard against the potential effects of this noise on the worker's hearing, as required. All vehicles and mobile equipment are required to have exhaust and muffler systems as per manufacturer's specifications. The other sources of noise at the site include the engines at the methane recovery facility, which is mitigated by an exhaust muffler system.

- Additional potential noises sources from the composing facility would be those generated from the grinding and screening of feedstock.
- Mobile equipment has mufflers to minimize noise impacts. Processing equipment used at the Facility meets OSHA standards for noise and safety. Ear protection devices are worn by all employees subject to excessive noise levels in the Facility.

Non-Salvageable Items [14 CCR 17408.4]

17408.4 - Drugs, cosmetics, foods, beverages, hazardous wastes, poisons, medical wastes, syringes, needles, pesticides and other materials capable of causing public health or safety problems shall not be salvaged at operations or facilities unless approved by the local health agency and the EA.

The operator will examine incoming loads to ensure that contamination is at a minimum. There is no scavenging or salvaging, and the residuals are de minimus.

Nuisance Control [14 CCR 17408.5]

17408.5 - Each operation and facility shall be conducted and maintained to prevent the creation of a nuisance. Compliance with specific provisions regarding nuisance control in a local land use approval, such as a conditional use permit or CEQA mitigation measures, shall be considered compliance with this standard

The operator accepts responsibility for prevention of potential nuisances resulting from the composting facility and will be diligent in its compliance with all provisions regarding nuisance control required by its land use entitlements and other documents applicable to Facility operations. Additionally, the composting facility will be in a borrow pit, which will be 20' below grade.

Maintenance Program

17408.6 - All aspects of the operation or facility shall be maintained in a state of good repair. The operator shall implement a preventative maintenance program to monitor and promptly repair or correct deteriorated or defective conditions

A preventive maintenance program will be followed to provide for the timely identification and correction of equipment and facility problems. The preventive maintenance program includes routine cleaning of refuse and litter from the facility. Facility personnel identify areas of the site in need of cleaning or repair while conducting routine site inspections.

Facility equipment will be maintained under a program that focuses on identifying and correcting equipment problems before breakage or failure occurs. This program allows equipment maintenance to be scheduled for weekends or after hours to avoid disruptions to the transfer operations. The inspection, maintenance and repair program will be in accordance with the equipment manufacturers' recommendations. Repair parts are also be stocked in the maintenance facility as recommended by the equipment manufacturers.

Personnel Health and Safety [14 CCR 17408.7]

17408.7 - The Injury, Illness, and Prevention Program (IIPP) shall be available for review by local and state inspectors during normal business hours. Nothing in this section is intended to make the EA responsible for enforcing the IIPP.

Safety equipment is available and accessible to all site personnel and customers. Eye washes and first-aid kits will be readily available in the event they are needed. Nearby workers are equipped with appropriate safety clothing, including gloves, hard hats, ear protection, and goggles. Where appropriate, additional specialty clothing will be provided, such as international orange vests or aprons for sorters. Portable eye washes and first-aid kits will be maintained at the Facility.

Protection of Users [14 CCR 17408.8]

17408.8 - An operation or facility shall be designed, constructed, operated, and maintained so that contact between the public and solid wastes is minimized. This may be accomplished through the use of railings, curbs, grates, fences, and/or spotters.

Truck drivers are regulars who are trained and familiar with the site. The general public will have only limited access to the compost operations area. The operator will manage traffic at the compost facility in a clear and safe way.

Roads [14 CCR 17409.1]

17409.1 – All on-site roads and driveways shall be designed and maintained to minimize the generation of dust and tracking of soil onto adjacent public roads. Such roads shall be kept in safe condition and maintained to allow vehicles utilizing the operation or facility to have reasonable all-weather access to the site.

The roads are located on all-weather surfaces, such as compacted soil, asphalt, or concrete and are accessible year-round and in all types of weather. Daily site inspections by Facility personnel will focus on ensuring that the entry and driveway are free of debris and a clean appearance maintained.

Sanitary Facilities [14 CCR 17409.2]

17409.2 - The operator shall maintain all sanitary and hand-washing facilities which may be required, by applicable state or local requirements, in a reasonably clean and adequately supplied condition

There is no public wastewater service or septic system on the compost site or planned for development. Portable toilet facilities would be provided for employees. The employees would have access to the landfill facilities' gate for access.

Signs [14 CCR 17409.4]

17409.4.(a) - For operations or facilities not open to the public, each point of access from a public road shall be posted with an easily visible sign indicating the operation or facility name and location of nearest public operation or facility. (b) If the operation or facility is open to the public, there shall be an easily visible sign at all public entrances indicating the name of the operator, the operator's telephone number, schedule of charges, hours of operation, and a listing of the general types of materials which either (1) WILL be accepted, or (2) WILL NOT be accepted.

The security fence along the site boundary adjacent to roadways, and "NO TRESPASSING" signs located at all gates and at other locations are used to deter trespassing at the site. All service gates remain locked during operating hours except the main entrance. The main entrance is controlled by an automatic gate, which is closed and locked at the end of each operating day.

Signs indicating the correct direction of travel into and out of the unloading areas will be posted prominently allowing commercial and self-haul users alike to identify entrances and exits easily.

Solid Waste Removal [14 CCR 17410.1]

17410.1 - (a) All solid wastes shall be removed at the following frequencies or at an alternate frequency approved by the EA, in order to prevent the propagation or attraction of flies, rodents or other vectors:
(1) operations shall remove solid wastes accepted at the site within 7 days from the date of receipt;
(2) facilities shall remove solid waste accepted at the site within 48 hours from the time of receipt.

Compost material that has gone through time and temperature requirements and curing will be transferred to the finished compost areas identified on the Site Plan for storage until sale. Finished compost from the composting facility may be then sold as a final product. Any residual wastes resulting from the composting operations will be transported to the landfill for disposal within 48 hours or when bin is full, whichever is sooner.

Supervision and Personnel [14 CCR 17410.2]

17410.2 - The operator shall provide adequate supervision and a sufficient number of qualified personnel to ensure proper operation of the site in compliance with all applicable laws, regulations, permit conditions and other requirements. The operator shall notify the EA in writing of the name, address and telephone number of the operator or other person responsible for the operation. A copy of the written notification shall be placed in the operating record.

The operator will provide adequate supervision and sufficient qualified personnel to ensure operations are proper and in compliance with all applicable laws, regulations permit conditions or other requirements.

Training [14 CCR 17410.3]

17410.3 –Personnel assigned to the operation or facility shall be adequately trained in subjects pertinent to site solid waste operations and maintenance, hazardous materials recognition and screening, use of mechanized equipment, environmental controls, emergency procedures and the requirements of this Article. A record of such training history shall be maintained and made available for inspection.

Employees are trained by staff that are skilled in: (1) various aspects of the work and (2) the proper use and maintenance of composting facility equipment for which they may be responsible. Potential hazards and safety features are stressed. No employee is permitted to operate equipment until the employee has demonstrated proficiency in its use.

Employees are trained in proper load checking techniques, including the screening and recognition of hazardous materials, including, but not limited to lead-based painted wood, asbestos containing material and CCA treated wood.

Additional training is provided surrounding environmental controls utilized at the Facility, employee and public safety, and emergency procedures to be followed. Annual review and refresher training ensures continued safe operations of the facility and compliance with regulations. Training records will be maintained and made available for inspection in accordance with other records, as noted below in General Recordkeeping Requirements.

Training records will be maintained in accordance with [14 CCR, section 17410.3]. This information is kept on file in the administrative office under the supervision of the operator.

Vector, Bird and Animal Control [14 CCR 17410.4]

17410.4 - The operator shall take adequate steps to control or prevent the propagation, harborage and attraction of flies, rodents, or other vectors, and animals, and to minimize bird attraction.

Vectors are animals, insects, and other organisms that may carry pathogens, such as mosquitoes, birds, flies, and rats, from one host to another. These vectors are frequently carried into processing facilities and composting facilities by delivery trucks and may migrate on-site from surrounding lands. Organic waste piles within the CASP composting area will be covered with a finished compost cover during composting acting as a biofilter.

Properly constructed drainage facilities will be provided to significantly reduce the potential for liquids and storm water to pond on the site, mitigating the potential for mosquito propagation. The Facility and surrounding areas will be kept clean to minimize creation of an attractive nuisance. Vector and bird eradication programs could further employ chemical applications, and/or traps, as are deemed appropriate and environmentally sound. Commercial pest control services could be retained as necessary. It is anticipated that these control measures may be limited.

Record Keeping Requirements [14 CCR 17414- 17414.1]

17414 - .Each operator shall meet the following requirements:
(a) each operator shall maintain records of incoming weights or volumes and outgoing salvage or residual weights or volumes in a form and manner approved by the EA. Such records shall be: submitted to the EA or CIWMB upon request; be adequate for overall planning and control purposes; and, be as current and accurate as practicable;
(b) all records required by this Article shall be kept by the operator in one location and accessible for three (3) years and shall be available for inspection by the EA and other duly authorized regulatory agencies during normal working hours.
(c) the operator shall submit copies of specified records to the EA upon request or at a frequency approved by the EA;
(d) the operator shall maintain a daily log book or file of special occurrences encountered during operations and methods used to resolve problems arising from these events, including details of all incidents that required implementing emergency procedures. Special occurrences shall include but are not limited to: fires, injury and property damage, accidents, explosions, receipt or rejection of prohibited wastes, lack of sufficient number of personnel pursuant to section 17410.2, flooding, earthquake damage and other unusual occurrences. In addition, the operator shall notify the EA by telephone within 24 hours of all incidents requiring the implementation of emergency procedures, unless the EA determines that a less immediate form of notification will be sufficient to protect public health and safety and the environment;
(e) the operator shall record any written public complaints received by the operator, including:(1) the nature of the complaint,(2) the date the complaint was received,(3) if available, the name, address, and telephone number of the person or persons making the complaint, and(4) any actions taken to respond to the complaint;
(f) the operator shall maintain a copy of the written notification to the EA and local health agency of the name, address and telephone number of the operator or other person(s) responsible for the operations as required by section 17410.2;
(g) The operator shall maintain records of employee training as required by section 17410.3;
(h) all transfer/processing operations and facilities shall maintain records as required by section 18809 et seq.

Weights/Volumes

The Visalia Landfill obtains a record of load weights by weighing all arriving and exiting vehicles, which do not already have prerecorded tare weights. Other data collected and recorded includes (1) type of vehicle, (2) type of material, (3) date, and (4) time. From this information, the Facility operator maintains reports summarizing the quantity of materials received, recovered, and disposed of offsite.

Accessibility of Records

Records of the quantities of material received, recovered, and disposed of are kept, and are available for review by the LEA during normal business hours. Equipment maintenance records, employee training records, safety records, material safety data sheets, and incident records are maintained on file in the administrative office for 3 years.

Availability of Records

Records shall be available during normal business hours at the administrative office, Monday through Saturday, 6:30 AM- 4:00 PM, and from 8:00 am – 4:00 PM on Sunday.

Special Occurrences

The site stores a daily log book or file of special occurrences encountered during operations and methods used to resolve problems arising from such events, including details of all incidents that required implementing emergency procedures. Special occurrences shall include, but are not limited to, fires, injury and property damage, accidents, explosions, receipt or rejection of prohibited wastes, lack of sufficient number of personnel pursuant to 14 CCR, flooding, earthquake damage, and other unusual occurrences. In addition, the operator will notify the LEA by telephone within 24 hours of all incidents requiring the implementation of emergency procedures, unless the LEA determines that a less immediate form of notification will be sufficient to protect public health and safety and the environment.

The operator will record and retain records of any serious injury to the public occurring on-site and any complaint of adverse health effects to the public attributed to operations. Serious injury is defined as any injury that requires hospitalization of a period in excess of 24 hours, or one in which a member of the public suffers permanent disfigurement or the loss of any member of their body. This information is kept on file in the administrative office under the supervision of the Site Manager.

Complaint Procedures

The operator will maintain records of any written complaints received and actions taken in their regard. The operator will record any public complaints received by the operator, including:

- the nature of the complaint,
- the date the complaint was received,
- if available, the name, address, and telephone number of the person or persons making the complaint, and
- Any actions taken to respond to the complaint.

This information is kept on file in the administrative office under the supervision of the Site Manager.

Enforcement Agency Documentation

Any approvals, determinations or other requirements of the LEA provided to the operator will be kept on file in the administrative office under the supervision of the composting facility Site Manager.

DRS Regulations

The operator will maintain records in accordance with the Disposal Reporting Regulations [14 CCR, section 18809] for all material received including the jurisdiction of origin, origin of potential alternative daily cover material, and the total tons of solid waste exported from each jurisdiction of origin. This information is kept on file in the administrative office under the supervision of the composting facility Site Manager.

Article 6.35 Additional Operating Requirements for Facilities

Communications Equipment [14 CCR 17415.1]

17415.1 - Each facility shall have adequate communication equipment available to site personnel to allow quick response to emergencies.

Telephone service is provided by a local telephone service provider. Telephones are available in the offices at the entrance gate. Operator employees on site utilize cellular telephones and/or radios to communicate and coordinate their daily and routine operating practices.

Firefighting Equipment [14 CCR 17415.2]

17415.2 - Each Facility shall have fire suppression equipment continuously available, properly maintained and located as required by the local fire authority.

Portable fire extinguishers and spark arrestors (on equipment manifolds) are provided on all mobile equipment. The receiving and processing areas under canopy will also be equipped with fire extinguishers suitable for extinguishing any minor fires and for maintaining personnel safety.

Maintenance and repair procedures that require welding will be conducted by trained personnel in a controlled area, with the proper fire control equipment within ready access to respond to a fire if needed. Additionally, smoking is not permitted at the landfill except in specifically designated areas.

Housekeeping [14 CCR 17416.1]

17416.1 –The operator shall provide adequate housekeeping for the maintenance of facility equipment and shall minimize accumulations of fuel drums, inoperable equipment, parts, tires, scrap, and similar items.

The composting facility is inspected on a daily basis by Facility personnel to ensure that supplies, parts, containers, and equipment are properly stored or contained so that they do not present a hazard or nuisance. The operator will provide adequate housekeeping for the maintenance of Facility equipment, and will minimize accumulations of fuel drums, inoperable equipment, parts, tires, scrap, and similar items.

Lighting [14 CCR 17416.2]

17416.2 – The facility and/or equipment shall be equipped with adequate lighting, either through natural or artificial means, to ensure the ability to monitor incoming loads, effectiveness of operations, and public health, safety and the environment.

There are no nighttime operations at Visalia Landfill. Lighting will be installed in the receiving and processing areas under canopy and in the scale house. Temporary lighting is available and will be used at the composting facility in the morning and evening hours during the winter, as needed. Facility equipment is fitted with appropriate lighting to safely conduct operations during periods of low visibility.

Equipment and Power Failure

17416.3 – Equipment shall be adequate in type, capacity and number, and sufficiently maintained to allow the facility to meet all requirements of Articles 6.3 and 6.35 of these standards

The operator has adequate equipment in type, capacity and number, which is sufficiently maintained to allow the facility to meet all requirements of Articles 6.3 and 6.35 of these standards. The project is not expected to have any additional impact on electric utilities.

Site Security [14 CCR 17418.1]

17418.1 - The facility shall be designed to discourage unauthorized access by persons and vehicles through the use of either a perimeter barrier or topographic constraints.

The entrance facility includes chain link fencing along Avenue 328 and chain link gates at the Facility's drive approach to improve security. The entrance is locked during non-business hours to prevent unauthorized access. In addition, security lighting is present at the Facility entrance and perimeter barriers and other topographical constraints are located throughout the entire site. The Visalia Landfill entrance gate is closed and locked when the Facility is not operating.

Site Attendant [14 CCR 17418.2]

17418.2 - A facility open to the public shall have an attendant present during public operating hours or the facility shall be inspected by the operator on a regularly scheduled basis as approved by the EA to ensure that it meets all of the requirements of Articles 6.2, 6.3 and 6.35.

Many of truck drivers visiting Visalia Landfill are regulars who are trained and familiar with the site. The general public will have limited access to the compost operations area and be restricted to the self-haul unloading operations. There will be a site attendant at composting facility who will be present before, during, and after public hours.

Traffic Control [14 CCR 17418.3]

17418.3 - (a) Traffic flow through the facility shall be controlled to prevent the following:(1) interference with or creation of a safety hazard on adjacent public streets or roads,(2) on-site safety hazards, and(3) interference with operations.

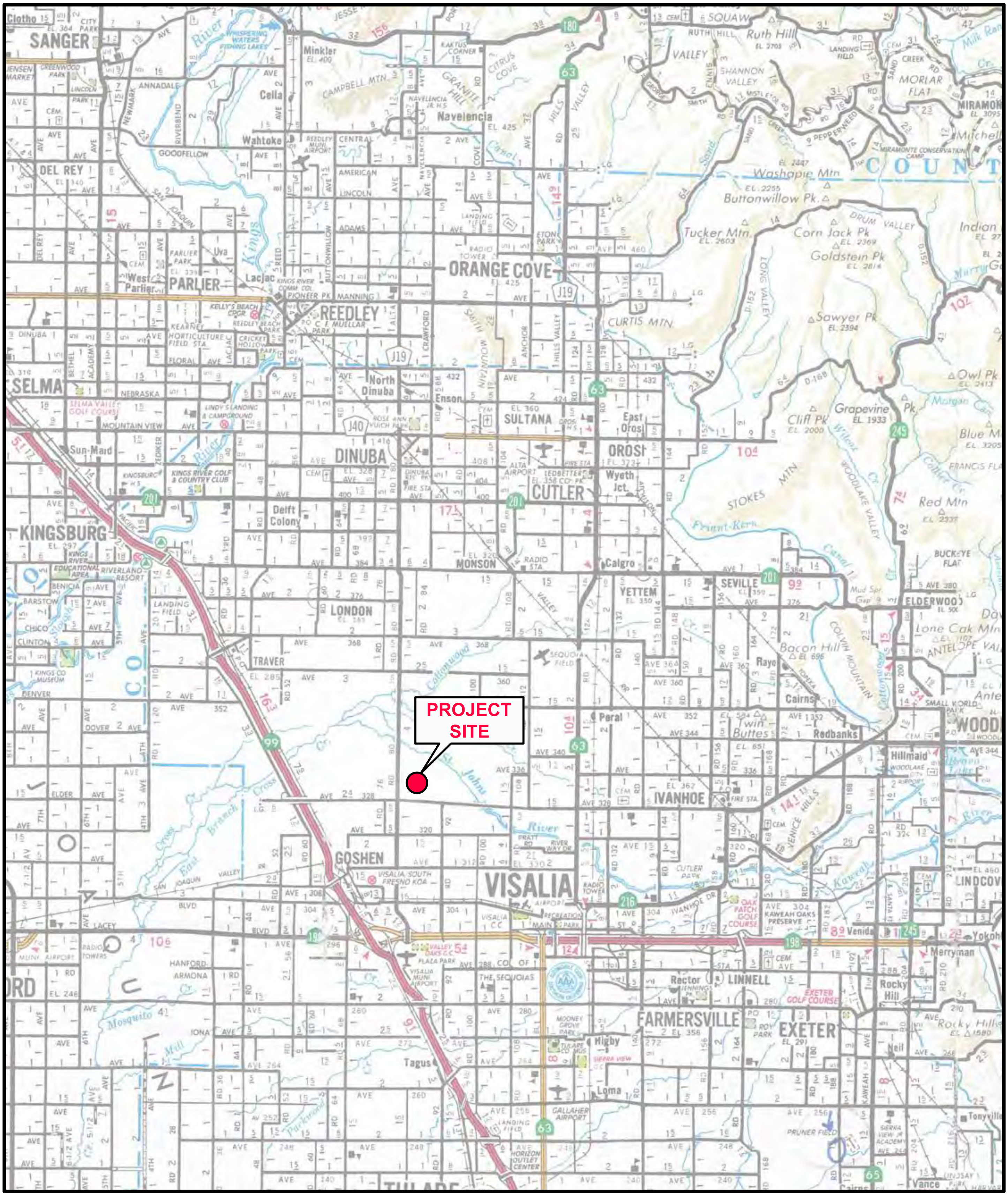
The compost project site would be accessed from Avenue 328 via an entry roadway that services the landfill. There would be no increase in the current tons traffic permit limits stated in the SWFP for the landfill, as the current green waste and wood waste is being diverted now, and the new organic wastes tons would be diverted directly to the compost facility instead of to the landfill. A 20-foot-wide perimeter fire lane would surround the site. An additional 20-foot fire lane would be placed between the phased composting areas and distinct operational areas.

The proposed project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system nor would it conflict with an applicable congestion management program. The development of the compost facility would not result in an increase in population nor corresponding to an increase in vehicle travel; therefore, new or modified intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit would not be required.

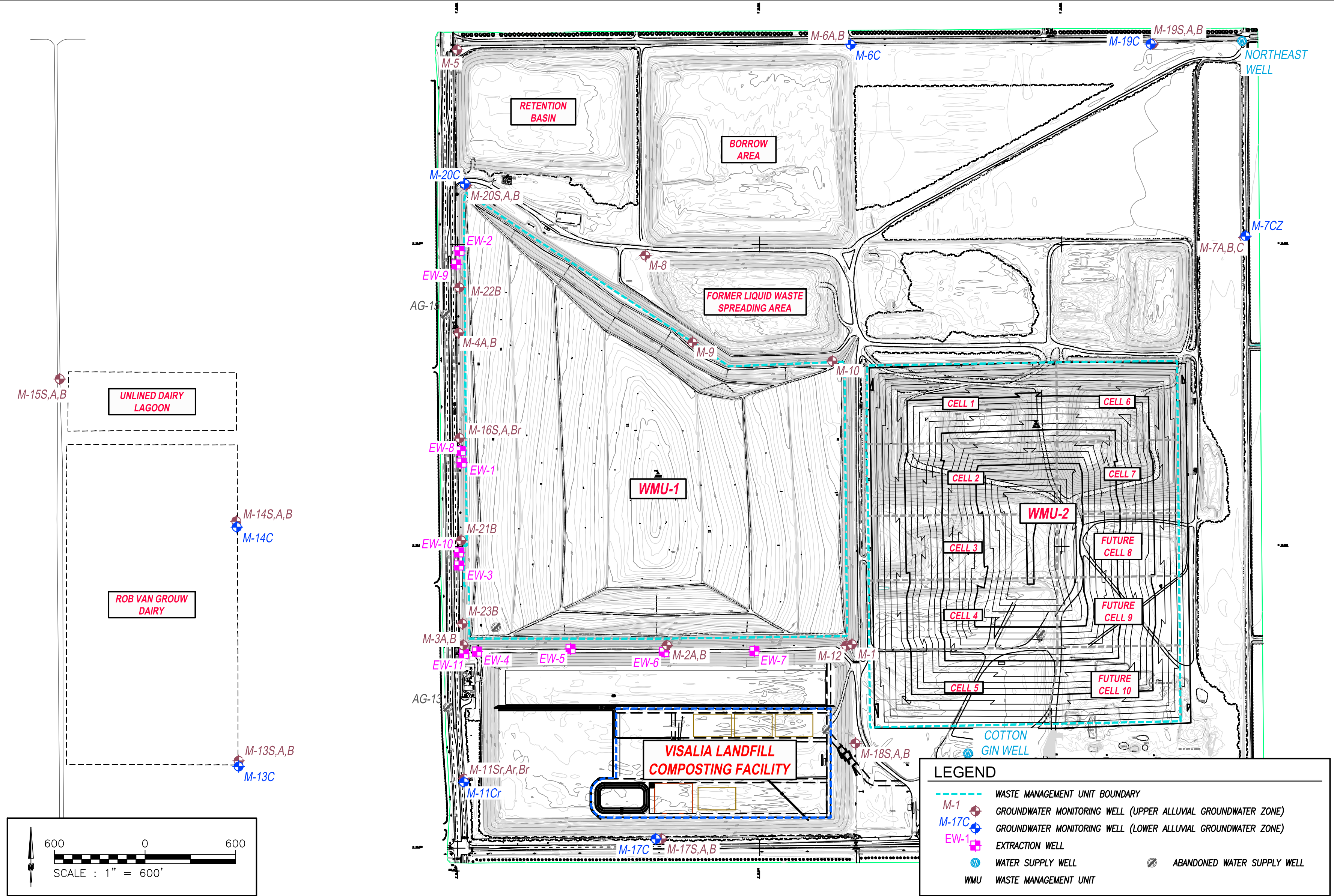
Visual Screening [14 CCR 17419.1]

17419.1 - The facility shall have appropriate treatment of areas open to public view to create and maintain an aesthetically acceptable appearance as approved by the local land use authority, or if none exist, in consultation with the EA. Compliance with specific provisions regarding visual screening in a local land use approval, such as a conditional use permit, or CEQA mitigation measures shall be considered compliance with this standard.

A daily site inspection by facility personnel focuses on ensuring that the entry and driveway are free of debris and a clean appearance is maintained. Additionally, operations will take place in an old borrow pit that is 20’ below grade.



EBA ENGINEERING 825 SONOMA AVENUE SUITE C SANTA ROSA, CA 95404 TEL: (707) 544-0784	**LOCATION MAP** VISALIA LANDFILL COMPOSTING FACILITY TULARE COUNTY 8614 AVE 328, VISALIA, CALIFORNIA	SHEET **1** 18-2573

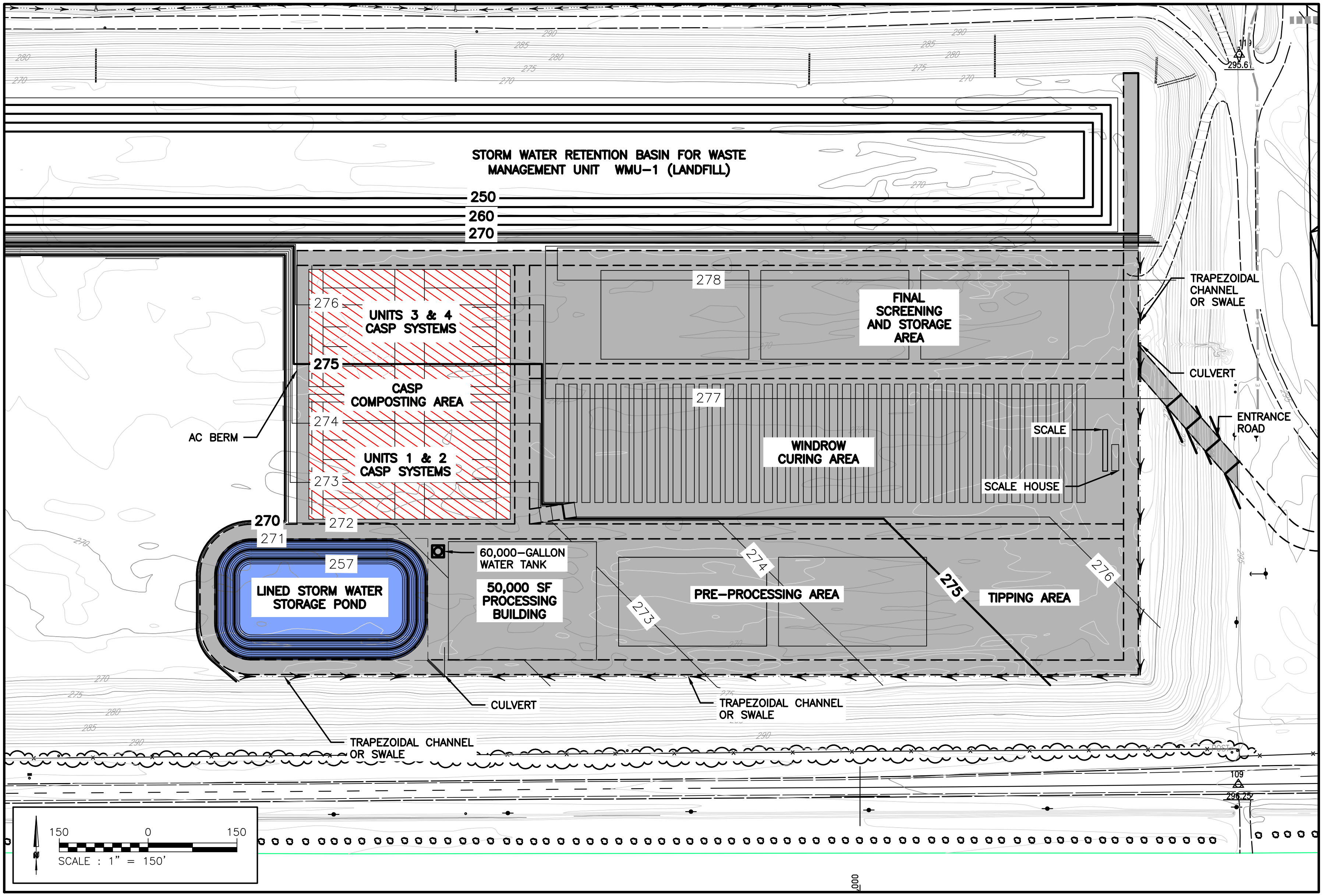


OVERALL SITE MAP

VISALIA LANDFILL COMPOSTING FACILITY
TULARE COUNTY
8614 AVE 328, VISALIA, CALIFORNIA

FIGURE
2
18-2573

EBA ENGINEERING
825 SONOMA AVENUE
SUITE C
SANTA ROSA, CA 95404
TEL: (707) 544-0784



PRELIMINARY SITE LAYOUT

VISALIA LANDFILL COMPOSTING FACILITY
TULARE COUNTY
8614 AVE 328, VISALIA, CALIFORNIA

FIGURE
3
18-2573

EBA ENGINEERING
825 SONOMA AVENUE
SUITE C
SANTA ROSA, CA 95404
TEL: (707) 544-0784

ODOR IMPACT MINIMIZATION PLAN

for the

Visalia Landfill Composting Facility
Visalia, California

Submitted to:

Tulare County Department of Health
Environmental Health Division
5957 S Mooney Blvd.
Visalia, CA 93277

Prepared by:

Edgar & Associates

1822 21st Street
Sacramento, CA 95811

July 2021

Regulatory Authority

California Code of Regulations (14CCR) Title 14, Section 17863.4 (effective on April 4, 2003) requires an Odor Impact Minimization Plan (OIMP) for all compostable material handling operations and facilities. The following OIMP is being submitted to the Tulare County Environmental Health Department by the Tulare County Resource Management Agency for their Composting Facility located at the Visalia Landfill.

Facility Name:	Visalia Landfill Composting Facility
Facility Location:	8614 Avenue 328, Visalia, Ca 93291-8856
Mailing Address:	5957 S Mooney Blvd. Visalia, CA 93277
Land Owner:	County of Tulare 5957 S Mooney Blvd. Visalia, CA 93277
Operator:	County of Tulare Tulare County Solid Waste Department 5957 S Mooney Blvd. Visalia, CA 93277
Contacts:	County of Tulare Tulare County Solid Waste Department 5957 S Mooney Blvd. Visalia, CA 93277

Title 14 Compliance

The purpose of preparing this Odor Impact Minimization Plan is to provide information on the use of best practices to mitigate odors and to comply with the regulatory requirements in 14 CCR 17863.4.

Material Type

The compost operation receives feedstock to be blended and composted which include:

- Processed and unprocessed wood and green waste.
- Agricultural Material
- Food waste and vegetative food waste

- Animal bedding and manure
- Plant waste from agricultural sources such as orchards, canneries, and crop residues.
- Digestate

Site Operations

Below Grade Operations

The composting facility is recessed approximately ***20 feet below grade*** – no levees required for containment.

Material Delivery

The hours of operations for receiving waste material will harmonize with the landfill with the following hours of operations:

Monday – Friday	7:00 am to 4:00 pm
Saturday	8:00 am to 4:00 pm

The Operator has an attendant on-site during operating hours. When an attendant is not present, the gate of the facility is kept locked. The Operator obtains a record of load weights by weighing all arriving exiting vehicles, which do not already have prerecorded tare weights. At the entrance of the facility is a sign with the company name and phone number to contact in the event of an emergency, and a list of materials that the facility will accept. Any loads exhibiting odor problems at the time of delivery wil be either given priority in processing or directed to the landfill for disposal.

Material Processing and Load Checking

All incoming feedstock is source-separated at the point of generation. Much of the material is also processed (size reduced) and contamination is removed prior to arriving at the facility.

When a truck enters the facility, it is weighed, and the organic material is unloaded from the trailer. Pre-processed material is placed directly onto the pad as it is unloaded from the truck. For material that is not pre-processed, the Operator conducts random load checks of incoming material for contaminants. Load checking is done by spreading out the material and having a qualified employee sort through the material, looking for and removing contaminants. The employee who performs the load checks and sorting is trained in the proper method of spreading out material to make sorting most effective, what contaminants to look for and the proper method of disposing of possible contaminants in the load. At a minimum, one truckload, or 10 percent of the truckloads delivering material that is not pre-processed, whichever is greater, is surveyed each day that the site receives incoming material. The Operator keep records of loadchecks performed, the contaminants found, how the contaminants were disposed of, and the loads rejected. Contaminants are accumulated in a storage bin which is then disposed of in the adjacent landfill.

Upon receiving incoming green waste that has not been pre-processed, the Operator grinds the material into pieces that are generally three inches and less in size, unless it has been processed elsewhere prior to delivery or is already of adequate size and quality.

Food waste is processed and placed in active composting within 48 hours of receipt. All other material types are placed in active composting within 72 hours.

Composting

The Operator utilizes state-of the art composting technologies by employing the covered aerated static pile system (CASP). The compost is covered and placed under aeration, where the compost emissions and odors are forced through a finished compost cover that significantly reduces emissions and odors.

The Operator composts material for at least three days as required by Title 14 for the aerated static pile compost system employed. Each day during the pathogen reduction period, at least one temperature reading is taken a minimum of every 150 feet of compost pile and the temperatures are taken 12 to 24 inches below the pile surface. The Operator keeps accurate records of the pathogen reduction period, plus all other temperature records, until the composting pile reduces to a temperature below 131 degrees Fahrenheit. The temperature records are stored at the Operator’s onsite office. After the pathogen reduction period, the operator may opt to turn the material in the CASP as needed. The monitoring is conducted weekly and is documented in the operating records. In the event that any pile has a temperature greater than 185 degrees Fahrenheit, the Operator takes appropriate measures to cool the pile down (e.g., spread the pile out, add water, or process by grinding and screening) and monitors the pile daily until the temperature drops below 175 degrees Fahrenheit.

Food Waste

The Operator’s facility accepts food waste for its covered aerated static pile processing. These food waste-rich feedstocks are blended with green waste and other organic materials to achieve a blend of approximately 20% food waste and are composted using covered aerated static pile compost methods. Aerated static piles are covered with either finished compost (or compost overs) to control odors, emissions, and storm water infiltration. The active compost is maintained at a temperature of 55 degrees Celsius (131 degrees Fahrenheit) or higher for a pathogen reduction period of at least three days.

Finished Compost

The finished compost is screened, with the smaller diameter material (1/2” and less) being used as soil amendment and the larger diameter material being sold for biomass or reground and screened. Finished compost may be blended with the aforementioned additives or amendments prior to delivery to markets. NRC tests for heavy metals and pathogens for every 5,000 cubic yards of compost produced, in accordance with Title 14 CCR 17868.1, 17868.2, & 17868.3. The compost samples are analyzed for maximum acceptable metal concentrations of arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, and zinc by a laboratory certified by the California Department of Health Services.

The composting facility equipment operators are trained using the equipment-operating manuals, hands-on training by the present employee/operators, and ongoing safety programs. This ongoing training covers operation and maintenance of equipment, technical aspects of composting procedures, and safety precautions.

Finished compost that has been entirely cured, will be placed in a sales area for sale to small quantity customers, while other finished product will be loaded directly from the finished product storage area for sale to larger-quantity buyers.

Section 17863.4 (b) (1) - Odor Monitoring Protocol

Properly managed green material stockpiles should not create nuisance odors. Improper management of raw feedstock piles, organic stockpiles, and processed green material may cause nuisance odors. The Operator processes materials within the time frames stated, monitors and evaluates odors, and reduces the storage time should nuisance odors be emitted and verified odor complaint be received and filed. The best way to ensure that all parties work together is to implement an odor impact minimization plan that is agreed upon between the Operator and the LEA.

Food waste receiving, processing, composting, and screening – in addition to the leachate collection pond – may present significant odor sources if not properly managed and appropriate measures employed to reduce odors.

The closest receptors are operations staff and management who are onsite during operating hours to monitor the compost materials handling operation. The sensitive receptor nearest to the project site is an agricultural dairy operation approximately 1500 feet west of the composting facility. There is a wind rose for the region attached in Appendix D. In most cases, the winds blow over primarily agricultural fields and neither of these flows should significantly impact neighbors as there are very few nearby sensitive receptors within the path of these prevailing winds.

Each day the Operator evaluates onsite odors and evaluates planned operations for the potential to release objectionable odors. If the Operator detects an objectionable onsite odor, he takes the following actions:

1. Investigate and determine the likely source of the odor

2. Determine if onsite management practices could remedy the problem and immediately take steps to remedy the situation.
3. Determine whether or not the odor is traveling beyond the site by patrolling the site perimeter and noting existing wind patterns.
4. Determine whether or not the odor event is significant enough to warrant contacting the adjacent neighbors or the LEA.

In the event of significant odors where a complaint has been filed, the protocol is for the Operator to inspect the location of a received complaint. The Operator shall attempt to determine if an offensive odor exists and notify the LEA of the complaint and the determination of odor source. In the event that the complaint cannot be verified in this manner, the Operator continues to perform self-monitoring and continue the best management practices (BMPs) described in this operating document. In the event an offensive odor is detected, the Operator shall present the LEA with additional or enhanced BMPs to minimize the likelihood of future odor detection.

Section 17863.4 (b) (2) - Meteorological Data

Mean annual precipitation recorded at the City of Visalia, is 9.86 inches (DWR, 1979). Mean annual pan evaporation measured at the nearest station located approximately 7 miles northwest of the site at Traver is 57.48 inches based on data collected from 1962 through 1966 (DWR, 1979). The 100-year, 24-hour precipitation for Visalia is 3.12 inches (DWR, 1986). The 100-year annual precipitation for Visalia is 21.49 inches (DWR, 1986).

The predominant wind direction is from Northwest to the Southeast and can reach 15-20 mph. A wind rose depicting average wind speed and directional frequency near the facility is provided as attachment A.

If necessary, material handling or processing may be curtailed or altered during periods of high wind to prevent odors or dust from being transported toward potential receptors.

Section 17863.4 (b) (3) - Complaint Response Protocol

Complaints may be received by either the Operaor or the LEA. In the event of a complaint, the following protocol is performed.

1. The Operator receives and reviews the complaint.
2. The Operator goes to the location of the complaint to assess if the site may be responsible for the odor.
3. The Operator documents complaints in the site operations log and on the attached complaint form.

4. The Operator assesses complaint and responds in the on-site log within 24 hours of receiving the complaint, or 48 hours should the citizen complaint be received on a weekend or holiday.
5. The Operator implements reasonable recommendations suggested by experts or regulatory agencies. The Operator continues operations utilizing best management practices described above.
6. The Operator and complainant (if known and choosing to participate) meet within a reasonable time frame to assess the original problem and results from implementing the recommendations.
7. Results and actions must be documented in the site operations log, which serves as the operation's permanent record.

Section 17863.4 (b) (4) - Design Considerations and Procedures to Minimize Odors

Odor controls are implemented throughout the entire composting process. If material loads exhibit odor problems at the time of delivery, these loads are either given priority from a processing standpoint or are directed to the landfill for disposal. Upon initiation of the composting phase, odors are primarily controlled in piles by maintaining proper carbon to nitrogen levels, maintaining adequate moisture levels, and monitoring temperature and oxygen conditions to ensure sustainment of an efficient compost process. Oxygen control for the CASP process is accomplished by forced aeration through the biofilter. Finally, the implementation of good housekeeping practices (i.e., cleaning around the compost piles) also serves to effectively control the potential generation of odors.

Facility Siting

The siting of the composting operations at the composting facility, away from sensitive receptors, is the optimal siting criteria to reduce the potential for odor complaints.

Proper Drainage

Standing water is a potential source of odors. The operations pad is a an all-weather surface that is sloped sufficiently to prevent ponding. Differential settlement of the pad and storage areas are minimized through regrading of surfaces as needed. The pad is maintained to prevent ponding. On-site drainage is controlled by grading of the facility and directing all storm water flow toward the retention pond at the Northern end of the facility. As needed, v-ditches, swales and berms are constructed to maintain positive drainage, minimize erosion and standing water around working areas, and minimize infiltration and leachate generation from the composting areas. The ponds and drainage ditches are maintained to prevent sedimentation and organic loading that could potentially cause odors.

Feedstock Processing

All feedstock materials are managed to minimize odors. In particular, food waste receipt, processing, and composting are managed to minimize the exposure of these putrescible materials to the atmosphere prior to their stabilization through the composting process.

Odor Management

To maintain the proper carbon/nitrogen ratio and aeration in the composting feedstock, loads of woody materials such as wood chips and leaves may be added to the piles where odors are emanating.

The following procedures are implemented during the composting process:

- The workers at the compost facility are trained to screen incoming vehicles for presence of unacceptable wastes. All loads are checked prior to loading the material into the processing equipment or compost piles. Unacceptable material that does not pose an immediate threat to public health and safety and the environment is collected at the composting facility and segregated, handled, and disposed of by trained personnel in accordance with applicable law and regulation. Debris boxes are maintained on site for placement of unacceptable materials. These debris boxes shall be removed for legal offsite disposal at a permitted landfill and replaced within seven days of initial placement. The key employees include the scale personnel, composting facility load check personnel, equipment operators, and the site manager.
- Storage is limited to no more than 72 hours for incoming feedstocks prior to processing.
- Proper handling and blending to maintain proper carbon/nitrogen ratios is done to minimize ammonia generation.
- Proper temperature and moisture levels are controlled through timely adjustment of the forced aeration through the compost piles, monitoring of temperatures and moisture, and appropriate application of water. These procedures are done in accordance with Title 14 requirements for pathogen reduction and Best Management Practices for compost operations.

Food Waste Composting and Handling

The Operator utilizes state-of the art composting technologies by employing the covered aerated static pile system (CASP). The compost is covered and placed under aeration, where the compost emissions and odors are forced through a finished compost cover that significantly reduces emissions and odors.

The food waste is received on a concrete pad, which is protected by a canopy. The food waste is blended with green waste as soon as feasible and the blended material placed under cover in the composting system each day. Food waste delivered to the site is covered with finished compost or clean green waste if it is not blended and placed into the composting system to minimize odor generation and exposure to vectors.

If at any point during the composting process verifiable odor problems occur, identified source materials are removed and transported to nearby landfills for disposal.

Equipment Reliability

On-site equipment is well-maintained and reliable. Equipment fueling, maintenance, and repairs are conducted by the Operator or contracted to a third party contractor. In the event of severe mechanical failure, similar processing equipment can be rented from nearby vendors. The facility maintains good relationships with nearby equipment vendors who can provide back up and temporary equipment on very short notice and appropriate permits are in place to operate replacement equipment at the facility, as needed.

Personnel Training

All facility personnel are adequately trained in subjects pertinent to site compostable materials handling operations and maintenance, physical contaminants and hazardous materials recognition and screening, use of mechanized equipment, environmental controls, emergency procedures and the requirements of Article 6.

Personnel are trained in the proper use of facility equipment. Potential hazards and safety features are stressed. No employee is permitted to operate equipment until the employee has demonstrated that he or she is competent to operate that equipment. Annual review and training ensuring continued safe operations of the facility and compliance with regulations is conducted.

Utility Service Interruptions

- Electric: Critical on-site equipment is electric-powered and can be used during local power failures. A diesel generator is available to operate some equipment during an outage.

- Telephone: The office staff and the key employees on site utilize cellular telephones and/or radios to communicate and coordinate their daily and routine operating practices.

- Water - A water truck located on site is able to provide water as needed. The facility may also use an on-site well to provide water as needed. The facility has sufficient water to meet its needs for dust control and moisture content in the compost piles.

Section 17863.4 (b) (5) - Operational Considerations and Procedures to Minimize Odors

Odor Mitigation Measures

Multiple BMPs and mitigation measures may be taken at the facility to prevent and reduce the impact of odors. These practices include:

- Turning and Watering:
  The operator typically turns the material at least once during the active compost phase (about 24 days), and curing material is also turned. Water may be added to the material to maintain moisture content within the desired range for composting. Adjusting the amount of moisture applied or not applied to the composting material can assist in odor control. Moisture content for the compost piles is maintained between 45% and 60%.

- Drainage:
  The operation maintains proper drainage as to not allow ponded water or affected material to cause odors.

- Blending:
  Feedstock that is non-odorous can be blended with odor-causing feedstock to introduce oxygen and minimize odor.

- Covering:
  Piles will be covered with finished compost or compost overs as an extra level of odor mitigation.

- Disposal:
  Exceptionally odoriferous material may be managed by directly hauling the material to the landfill for disposal.

- Air Flow:
  Forced air maintains aerobic conditions within the composting or curing material and serves to control odors. If an odor issue is detected, on-site personnel will verify that the aeration system is functioning properly, contacting the manufacturer, if necessary.

- Augmenting the Biofilter Cover Layer Cover:
  The finished compost layer that covers the pile can be augmented with additional finished compost or compost overs to further mitigate emissions.

- Checking Food Waste Content:

The feedstock may contain up to 20% food waste. Food waste is more likely to have odor issues than green waste, and as such, lower concentrations of food waste can be used to minimize the potential for odor, if necessary.

Contingency Plans

The facility has in place plans to address potential losses of equipment, water, power, or personnel.

- Equipment - In the event of breakdown, the operator continues operations with replacement of affected equipment by:
    - Renting from reputable, local equipment rental companies and/or
    - Maintaining permits with the local air district to cover temporary equipment
    - Borrowing equipment from other nearby operations, or those of affiliated companies in the region and/or
    - Purchasing new equipment.

- Water - The facility has sufficient water of its own to meet its needs. A water truck is available on site to provide water as needed. Additionally, a sprinkler system can provide water to composting material.

- Power - Critical on-site equipment can be diesel-powered and not subject to local power failures. Site personnel carry mobile telephones for communication.

- Personnel - Additional personnel are available from other County operations.

Section 17863.4 (d) – Annual Review of OIMP

The OIMP will be reviewed annually by the Operator and revised as necessary.

A copy of this OIMP is kept at the facility's administrative office. The OIMP will be revised within 30 days to reflect significant changes to operations that affect the OIMP.

STATE OF CALIFORNIA
DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY
REGIONAL WATER QUALITY CONTROL BOARD

APPLICATION FOR SOLID WASTE FACILITY PERMIT AND WASTE DISCHARGE REQUIREMENTS

CALRECYCLE E-1-77 (Rev. 11-15)

NOTE: This form has been developed for multiple uses. It is the transmittal sheet for documents required to be submitted to the appropriate agency. Please refer to the attached instructions for definitions of terms and for completing this application form in a complete and correct manner.

FOR OFFICIAL USE ONLY			
SWIS/WDID/Global ID NUMBER:	FILING FEE:	RECEIPT NUMBER:	DATE RECEIVED:
DATE ACCEPTED:	DATE REJECTED:	ACCEPTANCE DATE OF INCOMPLETE APPLICATION: DATE DUE:	

Part 1. GENERAL INFORMATION

A. ENFORCEMENT AGENCY: Tulare County Environmental Health

B. COUNTY: Tulare County

C. TYPE OF APPLICATION (**Check one box only**):

- ☑ 1. NEW SWFP and/or WDRS
- 2. CHANGE TO SWFP and/or WDRS
  - ☐ REVISION ☐ MODIFICATION ☐ OTHER (As authorized by law)
- ☐ 3. WAIVER
- ☐ 4. PERMIT REVIEW
- ☐ 5. AMENDMENT OF APPLICATION
- ☐ 6. RFI/ROWD/JTD AMENDMENTS

Part 2. FACILITY DESCRIPTION

A. NAME OF FACILITY:
Visalia Landfill Composting Facility

B. LOCATION OF FACILITY:

1. PHYSICAL ADDRESS OR LOCATION AND ZIP CODE:
33466 Rd. 80 Visalia Ca 93291

2. LATITUDE AND LONGITUDE:
36 23' 10"N, 119 22' 47"W

3. LEGAL DESCRIPTION OF PERMITTED BOUNDARY BY SECTION, TOWNSHIP, RANGE, BASE, AND MERIDIAN, IF SURVEYED:
Eastern 1/2 section 5 and western 1/2 of section 4, T18S, R24E, Mount Diablo Baseline and Meridian (MDB&M). APN:

C. TYPE OF ACTIVITY: (Check applicable boxes):

- ☐ 1. DISPOSAL
  - a. TYPE :
- ☑ 2. COMPOSTABLE MATERIALS HANDLING
  - a. TYPE: 14 CCR §17854
- ☐ 3. TRANSFORMATION
- ☐ 4. TRANSFER/PROCESSING
- ☐ 5. C&D/INERT DEBRIS PROCESSING
- ☐ 6. IN-VESSEL DIGESTION
- ☐ 7. OTHER (describe):

D. IDENTIFICATION OF FACILITY IN CIWMP [CONFORMANCE FINDING]:

☐ 1. FACILITY IS IDENTIFIED IN (Check one):

- ☐ SITING ELEMENT DATE OF DOCUMENT ______ PAGE # ______
- ☐ NONDISPOSAL FACILITY ELEMENT DATE OF DOCUMENT ______ PAGE # ______

E. TYPE OF PERMITTED WASTES TO BE RECEIVED: (Check applicable boxes):

- ☑ 1. AGRICULTURAL
- ☐ 2. ASBESTOS Friable Non-friable
- ☐ 3. ASH
- ☐ 4. AUTO SHREDDER
- ☑ 5. COMPOSTABLE MATERIAL (describe): Green waste, food waste, vegetative waste, wood waste, manure, biosolids, Anaerobic digestate
- ☑ 6. CONSTRUCTION/DEMOLITION
- ☐ 7. CONTAMINATED SOILS
- ☐ 8. DEAD ANIMALS
- ☐ 9. INDUSTRIAL
- ☐ 10. INERT
- ☐ 11. LIQUIDS
- ☐ 12. MUNICIPAL SOLID WASTE (MSW)
- ☑ 13. SEWAGE SLUDGE
- ☐ 14. WASTE TIRES
- ☐ 15. OTHER (describe):

Part 3. FACILITY INFORMATION

A. FACILITY INFORMATION:

1. INFORMATION APPLICABLE TO ALL EXISTING FACILITIES:

a. MAXIMUM DAILY TONNAGE OR CUBIC YARDS: 2000

b. AS-DESIGNED DAILY TONNAGE or CUBIC YARDS: 500

c. FACILITY SIZE (acres): 631

d. MAXIMUM TRAFFIC VOLUME PER DAY (vpd): 900

e. DAYS AND HOURS OF OPERATION: mon-fri 7am - 4pm; Sat 8am - 4pm

2. PROPOSED CHANGE(S) OR INFORMATION APPLICABLE TO NEW SWFP AND/OR WDRs

a. MAXIMUM DAILY TONNAGE OR CUBIC YARDS: 850 TPD

b. AS-DESIGNED DAILY TONNAGE or CUBIC YARDS: 650 TPD

c. FACILITY SIZE (acres): 24

d. MAXIMUM TRAFFIC VOLUME PER DAY (vpd): 900

e. DAYS AND HOURS OF OPERATION: mon-fri 7am - 4pm; Sat 8am - 4pm

f. OTHER:

3. ADDITIONAL INFO. REQUIRED FOR COMPOSTABLE MATERIALS HANDLING FACILITIES ONLY:

a. TOTAL SITE CAPACITY (cu yds): 200,000

4. ADDITIONAL INFORMATION REQUIRED FOR LANDFILLS ONLY:

a. AVERAGE DAILY TONNAGE (TPD)

b. SITE CAPACITY CURRENTLY PERMITTED (Airspace) (cu yds)

c. SITE CAPACITY PROPOSED (Airspace) (cu yds)

d. SITE CAPACITY USED TO DATE (Airspace) (cu yds)

e. SITE CAPACITY REMAINING (Airspace) (cu yds)

f. DATE OF CAPACITY INFORMATION (Date) (See instructions):

g. LAST PHYSICAL SITE SURVEY (Date)

h. ESTIMATED CLOSURE DATE (month and year)

i. DISPOSAL FOOTPRINT (acres)

j. SITE CAPACITY PLANNED (cu yds)

k. 1. (i) IN-PLACE WASTE DENSITY (lbs of waste per cu yd of waste)
AND
(ii) WASTE-TO-COVER RATIO (Estimated) (v:v)
OR
2. AIRSPACE UTILIZATION FACTOR (tons of waste per cu yd of landfill airspace)

Part 4. SOURCE OF WATER SUPPLY (Check applicable boxes)

☐ A. MUNICIPAL OR UTILITY SERVICE:

☑ B. INDIVIDUAL (wells): “cotton gin well” , “Northeast well”

☐ C. SURFACE SUPPLY:

1. NAME OF STREAM, LAKE, ETC. :

2. TYPE OF WATER RIGHTS:

☐ RIPARIAN ☐ APPROPRIATION

3. STATE PERMIT OR LICENSE NUMBER , IF APPLICABLE:

☐ D. OTHER:

Part 5. COMPLIANCE WITH CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) (Check applicable boxes)

A. CHECK BOX(ES) IF ENVIRONMENTAL DOCUMENT WAS OR WILL BE PREPARED FOR THIS PROJECT:

☐ 1. ENVIRONMENTAL DOCUMENT WAS PREPARED:

- ☐ ENVIRONMENTAL IMPACT REPORT (EIR) SCH# ______
- ☐ NEGATIVE DECLARATION (ND)/MITIGATED NEGATIVE DECLARATION (MND) SCH# ______
- ☐ ADDENDUM TO (Identify environmental document) ______ SCH# ______

☑ 2. ENVIRONMENTAL DOCUMENT WILL BE PREPARED (Enter lead agency if known): Tulare County Health and Human services Agency - Environmental Health Services Division

B. IF ENVIRONMENTAL DOCUMENT(S) WAS NOT PREPARED, PLEASE PROVIDE THE FOLLOWING INFORMATION:

☐ CATEGORICAL/STATUTORY EXEMPTION (CE/SE)
EXEMPTION TYPE ______ GUIDELINE # ______

Part 6. LIST OF ATTACHMENTS (Fill in the date for each document checked)

A. REQUIRED WITH ALL APPLICATION SUBMITTALS:

- ☑ RFI/JTD ______
- ☑ LOCATION MAP ______
- ☑ MITIGATION MONITORING & REPORTING PROGRAM ______
- ☑ LIST OF PUBLIC HEARINGS AND OTHER MEETINGS OPEN TO THE PUBLIC ______

☑ ENVIRONMENTAL DOCUMENT(S):
- ☑ EIR ______
- ☐ MND/ND ______
- ☐ EXEMPTION ______
- ☐ ADDENDUM ______

B. ADDITIONAL REQUIRED DOCUMENTS FOR DISPOSAL FACILITIES ONLY:

- ☐ OPERATING LIABILITY FINANCIAL MECHANISM ______
- ☐ CLOSURE/POST CLOSURE MAINTENANCE PLAN
  - ☐ PRELIMINARY ______
  - ☐ FINAL ______
- ☐ FINANCIAL RESPONSIBILITY DOCUMENTATION ______
- ☐ KNOWN OR REASONABLY FORSEEABLE CORRECTIVE ACTION COST ESTIMATES ______
- ☐ LANDFILL CAPACITY SURVEY RESULTS (see instructi ______

C. IF APPLICABLE:

- ☑ REPORT OF WASTE DISCHARGE ______
- ☐ STORMWATER PERMIT APPLICATION ______
- ☐ NPDES PERMIT APPLICATION ______
- ☐ OTHER ______
- ☐ DEPT. OF TOXIC SUBSTANCES CONTROL OR CERTIFIED UNIFIED PROGRAM AGENCY PERMIT ______
- ☐ SWAT (Air and water) ______
- ☐ WETLANDS PERMITS ______
- ☐ VERIFICATION OF FIRE DISTRICT COMPLIANCE ______

Part 7. OWNER INFORMATION (For disposal site, if operator is different from land owner, attach lease or other agreement)

TYPE OF BUSINESS:
☐ SOLE PROPRIETORSHIP ☐ PARTNERSHIP ☐ CORPORATION ☐ GOVERNMENT AGENCY

OWNER(S) OF LAND (Name): Tulare County	SSN OR TAX ID #
ADDRESS, CITY, STATE, ZIP: 5961 S. Mooney Blvd., Visalia, CA, 93277	TELEPHONE #: (559) 624-7400, (559) 285-2440
	FAX #: (559) 687-6941
	E-MAIL ADDRESS:
	CONTACT PERSON (Print Name): Nilsa

Part 8. OPERATOR INFORMATION (For disposal site, if operator is different from land owner, attach lease or other agreement)

TYPE OF BUSINESS:

☐ SOLE PROPRIETORSHIP ☐ PARTNERSHIP ☐ CORPORATION ☐ GOVERNMENT AGENCY

FACILITY OPERATOR(S) (Name): Tulare County	SSN OR TAX ID #:
ADDRESS, CITY, STATE, ZIP 5961 S. Mooney Blvd., Visalia, CA, 93277	TELEPHONE #: (559) 624-7195
	FAX #:
	E-MAIL ADDRESS:
	CONTACT PERSON (Print Name):

ADDRESS WHERE LEGAL NOTICE MAY BE SERVED:

Part 9. SIGNATURE BLOCK

Owner:

I certify under penalty of perjury that the information I provided for this application and for any attachments is true and accurate to the best of my knowledge and belief. I am aware that the operator intends to operate a solid waste facility at the site specified above pursuant to this application and understand that I may be responsible for the site should the operator fail to meet applicable requirements.

SIGNATURE (LAND OWNER OR AGENT):

PRINTED NAME:

TITLE: DATE:

Lessee:

I certify under penalty of perjury that the information I provided for this application and for any attachments is true and accurate to the best of my knowledge and belief. I am aware that the operator intends to operate a solid waste facility at the site specified above pursuant to this application.

SIGNATURE (LESSEE):

PRINTED NAME:

TITLE: DATE:

Operator:

I certify under penalty of perjury that the information contained in this application and all attachments are true and accurate to the best of my knowledge and belief.

SIGNATURE (FACILITY OPERATOR OR AGENT):

PRINTED NAME:

TITLE: DATE:

Part 10. OTHER (Attach additional sheets to explain any responses that need clarification).

ATTACHMENT B – MONITORING AND REPORTING PROGRAM

This Monitoring and Reporting Program (MRP) is issued pursuant to Water Code section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Regional Water Board.

This MRP includes monitoring, reporting and record keeping requirements for composting operations. Monitoring requirements include facility inspections, detention basin water quality, groundwater protection monitoring, and general sampling, as appropriate. Reporting includes requirements for the Annual Monitoring and Maintenance Report, notification of violations, and reporting of significant events. Record keeping describes the types of information and length of time that the Discharger must keep and maintain reports.

The Discharger owns and/or operates the composting operation subject to the NOA and this General Order. The reports are necessary to ensure that the Discharger complies with the NOA and the General Order. Pursuant to Water Code section 13267, the Discharger shall implement this MRP and shall submit monitoring reports described herein.

A. ROUTINE MONITORING REQUIREMENTS

1. FACILITY INSPECTIONS

Any discharger enrolled under this General Order must inspect the composting operation in accordance with the following schedule and record, at a minimum, the observations described below:

a. Operations Areas – Perform quarterly inspections of the working surfaces, berms, ditches, facility perimeter, erosion control best management practices (BMPs), and any other operational surfaces (as specified in the NOI and/or a technical report, and approved by the Regional Water Board). The Discharger shall include the following observations in the Annual Monitoring and Maintenance Report:
   1) Date and time of inspections, along with the name of the inspector;
   2) Evidence of areas of deficiency such as cracking or subsidence in the working surfaces;
   3) Evidence of ponding over the working surfaces and within ditches (show affected area on a map);
   4) Effectiveness of erosion control BMPs;
   5) Maintenance activities associated with, but not limited to, the working surfaces, berms, ditches, and erosion control BMPs;
   6) Evidence of any water or wastewater leaving or entering the facility, estimated size of affected area, and estimated flow rate (show affected area on a map);
   7) Integrity of drainage systems during the wet season; and
   8) Photographs of observed and corrected deficiencies.

b. Wastewater Management System - Perform quarterly inspections of the wastewater management system and submit the following observations and records in the Annual Monitoring and Maintenance Report:
   1) Date and time of inspections along with name of inspector;
   2) The overall condition of the wastewater management system (i.e. pond liner, storage tank construction, municipal wastewater connection points);
   3) The available capacity within storage systems and the current volume of wastewater (gallons) or solids (cubic yards) contained;
   4) Presence of odors from the wastewater management system – characterization, source, and distance from source;
   5) Volume of wastewater treated and discharged, if applicable; and
   6) Volume of wastewater disposed at an off-site treatment system and name and location of the wastewater treatment facility, if applicable.

c. Annual Survey – Perform annual survey of the facility to confirm that all containment structures are prepared for the pending wet season. Dischargers shall conduct an annual survey prior to the anticipated wet season, but no later than August 31 and complete any necessary construction, maintenance, or repairs by **October 31**. The Discharger shall include the following in the Annual Monitoring and Maintenance Report:
   1) The observation date and time of the survey, along with the name of the inspector
   2) The type of deficiency/non-compliance observed;
   3) The cause for the deficiency/noncompliance;
   4) Map showing the area of deficiency/noncompliance;
   5) The corrective actions undertaken, or planned to resolve the deficiency/non-compliance, including the date and time of repairs;
   6) The measures undertaken by the Discharger to prevent the recurrence of the observed deficiency/noncompliance; and
   7) Photographs of the observed deficiencies/noncompliance with corresponding location on the map.

d. Major Storm Events - The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage within **7 days** following major storm events. Necessary repairs shall be completed within **30 days** of the inspection. The Discharger shall report any damage and subsequent repairs including photographs of the problem and repairs in the Annual Monitoring and Maintenance Report.

2. DETENTION POND MONITORING (IF APPLICABLE)

a. Any Discharger enrolled under this General Order that has a detention pond to manage wastewater onsite must conduct monitoring of the wastewater within the detention pond quarterly when there is sufficient water and analyze the sample for the parameters listed Table B-1. Water sample analyses shall be conducted by a laboratory certified for such analyses by the State Water Board's Environmental Laboratory Accreditation Program. These laboratory analyses shall be conducted in accordance with 40 Code of Federal Regulations part 136 (Guidelines Establishing Test Procedures for the Analysis of Pollutants) or other test methods approved by the Regional Water Board.

Table B-1

Detention Pond Monitoring

Constituent	Units	Sample Frequency	Reporting Frequency
pH	std. units	Quarterly	Annually
Dissolved Oxygen	mg/L	Quarterly	Annually
Total Dissolved Solids	mg/L	Quarterly	Annually
Fixed Dissolved Solids	mg/L	Quarterly	Annually
Total Nitrogen	mg/L	Quarterly	Annually
Specific Conductance	µmhos/cm	Quarterly	Annually

Note: These field parameters are measured during each sampling event.

Detention Pond Leak Detection Monitoring (Tier II only) – The leak detection monitoring device (i.e. pan lysimeter) shall be checked monthly during the wet season for liquid. Upon detection of liquid in a previously dry monitoring device Discharger shall notify the Regional Water Board within **48 hours**; collect a sample and analyze the liquid for the constituents listed in Table B-1; remove the liquid from the device; and continue to monitor weekly. If liquid reappears, another sample must be collected and analyzed for the constituents in Table B-1. If the liquid is confirmed to be wastewater, the Discharger must submit a Response Action Plan within 30 days for review and approval by the Regional Water Board.

b. The results of any monitoring conducted more frequently than required at the locations specified in this General Order shall be reported to the Regional Water Board.

3. BIOSOLIDS MONITORING (IF APPLICABLE)

a. Any Discharger enrolled under this General Order that uses biosolids as a feedstock, shall present analytical results from a certified laboratory to show proof that the biosolids meet, at a minimum, with the ceiling concentrations listed in Table 1 of 40 Code of Federal Regulations part 503. Biosolids may be characterized by the entity that generates or otherwise processes the material. Use of analytical data prepared by such an entity may be accepted in lieu of the sampling listed below. The characterization shall contain a description of the sample procedures, the analytical report, and a statement by a responsible person that the characterization was performed in a way that accurately characterizes the quality of the biosolids. The statement shall be signed by, and shall contain the certification language contained in the General Order under Reporting Requirements. U.S. EPA regularly reviews, and may revise, the limitations and requirements of 40 Code of Federal Regulations part 503 and should be reviewed for updates.

b. Any discharger enrolled under this General Order that uses biosolids as a feedstock and does not show results from a certified laboratory shall perform monitoring to characterize the material for the parameters listed in Table B-2. The characterization shall contain a description of the sample procedures, the analytical report, and a statement by a responsible person that the characterization was performed in a way that accurately characterizes the quality of the biosolids. The statement shall be signed by, and shall contain the certification language contained in the General Order under Reporting Requirements.

Table B-2

Biosolids Monitoring

Constituent	Units	Sample Frequency	Reporting Frequency
Arsenic	mg/kg	Sample each delivery	Annually
Cadmium	mg/kg	Sample each delivery	Annually
Copper	mg/kg	Sample each delivery	Annually
Lead	mg/kg	Sample each delivery	Annually
Mercury	mg/kg	Sample each delivery	Annually
Molybdenum	mg/kg	Sample each delivery	Annually
Nickel	mg/kg	Sample each delivery	Annually
Selenium	mg/kg	Sample each delivery	Annually
Zinc	mg/kg	Sample each delivery	Annually

4. GROUNDWATER PROTECTION MONITORING (IF APPLICABLE)

a. A Discharger that is required to perform groundwater monitoring due to site conditions shall perform the monitoring shown in Table B-3. Sample analysis shall be conducted by a laboratory certified by the State Water Board's Environmental Laboratory Accreditation Program. These laboratory analyses shall be conducted in accordance with 40 Code of Federal Regulations part 136 (Guidelines Establishing Test Procedures for the Analysis of Pollutants) or other test methods approved by the Regional Water Board.

b. Discharger is required to implement the sampling and analysis program detailed in the approved Groundwater Protection Monitoring Plan submitted with the NOI as part of the accompanying technical report described in Attachment D, which is hereby incorporated by reference as part of this MRP.

c. The results of any monitoring conducted more frequently than required at the locations specified in this General Order shall be reported to the Regional Water Board.

Table B-3

Groundwater Monitoring

Constituent	Units	Sample Frequency	Reporting Frequency
Groundwater Elevation [a]	0.01 Feet	Quarterly	Annually
Depth to Groundwater	0.01 Feet	Quarterly	Annually
Gradient	Feet/Feet	Quarterly	Annually
Gradient Direction	Degrees	Quarterly	Annually
pH	Std. Units	Quarterly	Annually
Total Dissolved Solids	mg/L	Quarterly	Annually
Nitrate as Nitrogen	mg/L	Quarterly	Annually
Sodium	mg/L	Quarterly	Annually
Chloride	mg/L	Quarterly	Annually
Total Coliform Organisms [b]	MPN/100 mL	Quarterly	Annually

a. Groundwater elevation shall be based on depth to water using a surveyed measuring point elevation on the well and a surveyed reference elevation.
b. Using a minimum of 15 tubes, or three dilutions.

5. GENERAL SAMPLING REQUIREMENTS

a. The Discharger shall use clean sample containers and sample handling, storage, and preservation methods that are accepted or recommended by the selected analytical laboratory or, as appropriate, in accordance with approved U.S. EPA analytical methods.

b. All samples collected shall be representative of the volume and nature of the material being sampled.

c. All sample containers shall be labeled and records maintained to show the time and date of collection as well as the person collecting the sample and the sample location.

d. All samples collected for laboratory analyses shall be preserved and submitted to the laboratory within the required holding time appropriate for the analytical method used and the constituents analyzed.

e. All samples submitted to a laboratory for analyses shall be identified in a properly completed and signed Chain of Custody form.

f. Field instruments may be used provided:
   1) The operator is trained in the proper use and maintenance of the instruments;
   2) The instruments are field calibrated prior to each monitoring event; and
   3) Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency.

g. Analytical results falling between the method detection limit (MDL) and the practical quantitation limit (PQL) shall be reported as “estimated,” be accompanied by documents reporting both the MDL and PQL values for that analytical run, and be flagged appropriately (i.e., “J-flagged”).

h. MDLs and PQLs shall be derived by the laboratory for each analytical procedure in accordance with the State Water Board’s Environmental Laboratory Accreditation Program. In a relatively interference-free laboratory, derived MDLs and PQLs are expected to agree closely with published U.S. EPA MDLs and PQLs.

i. If the laboratory suspects that, due to a change in matrix or other effects, the MDL or PQL for a particular analytical run differs significantly from historic MDL or PQL values, results shall be flagged and reported in the quality assurance/quality control (QA/QC) report.

j. The MDL shall always be calculated such that it represents the lowest achievable concentration associated with a 99 percent reliability of non-zero results.

k. The PQL shall represent the lowest concentration at which a numerical value can be assigned with reasonable certainty.

l. All quality assurance/quality control data shall be reported, along with sample results to which it applies. This information shall include method, equipment, analytical detection, quantitation limits, recovery rates, an explanation for any recovery rate that is outside method specifications, results of equipment and method blanks, results of matrix spikes and surrogate samples, and the frequency of quality control analysis. Sample results shall be reported unadjusted for blank results or spike recovery. In cases where contaminants are detected in the quality assurance/quality control samples (i.e., field, trip, or laboratory blanks), the accompanying sample results shall be appropriately flagged.

B. REPORTING REQUIREMENTS

1. ANNUAL MONITORING AND MAINTENANCE REPORT

The Annual Monitoring and Maintenance Report shall be submitted to the Regional Water Board by **April 1st** each year. The Discharger must submit this report in a searchable, electronic format (i.e., Portable Document Format (PDF) and Electronic Deliverable Format (EDF) via the State Water Board’s Internet GeoTracker system at <http://geotracker.waterboards.ca.gov/> as required by this General Order. The report must include the following:

a. A transmittal letter explaining the essential points shall accompany each report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted and a description of the actions taken or planned for correcting those violations, including any references to previously submitted time schedules. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter;

b. A map or aerial photograph showing the locations of observation stations and monitoring points;

c. Tabular and graphical summaries of all water quality data collected during the year, including wastewater monitoring if applicable; and

d. All historical monitoring data collected during the previous 5 years, and for which there are detectable results, including data for the previous year, shall be submitted in tabular form and in a digital file format.

e. Monitoring information must include at a minimum:

   1) The date, identity of sample, monitoring point from which the sample was collected, and time of sampling or measurement;
   2) The name of the individual(s) who performed the sampling or measurements;
   3) Date and time that analyses were started and completed;
   4) The analytical techniques or method used, including method of preserving the sample and the identity and volume of reagents used; and
   5) Field instrument calibration logs.

f. Copy of the complete laboratory analytical report(s), signed by the laboratory director or project manager, and at a minimum contain:

   1) Complete sample analytical reports;
   2) Complete laboratory QA/QC reports;
   3) A discussion of the sample and QA/QC data;
   4) A properly completed "chain of custody" from the analyzed samples; and
   5) A transmittal letter stating whether or not all of the analytical work was supervised by the director of the laboratory, and contain the following statement:
      "All analyses were conducted at a laboratory certified for such analyses by the State Water Board's Environmental Laboratory Accreditation Program in accordance with current U.S. EPA procedures."

g. Results and discussion from the annual survey;

h. Results and discussion of the groundwater protection monitoring, if applicable, including statistical analysis as submitted in the NOI and accompanying technical report, and approved by the Regional Water Board;

i. A summary of completion of inspections and maintenance of the working surfaces, berms, ditches, erosion control BMPs or other containment structures;

j. An evaluation of completion of inspections and maintenance on the effectiveness of the wastewater handling facilities including results of the annual testing of wastewater, capacity issues, nuisance conditions, and system problems;

k. A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with this General Order; and

l. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.

2. NOTIFICATION OF VIOLATIONS

If the Discharger determines there has been a violation of the requirements specified in either the General Order or this MRP, the Discharger must notify the Regional Water Board office by telephone or email, within **48 hours**, once the Discharger has knowledge of the violation. The notification must include a description of the noncompliance and its cause, the period of noncompliance (dates and times); and if the noncompliance has not been corrected, the anticipated time the noncompliance is expected to continue. The notification must also include steps taken or planned to reduce, eliminate, or prevent recurrence of the noncompliance.

The Regional Water Board may, depending on the severity of the violation, require the Discharger to submit a separate technical report regarding the violation within **10 working days** of the initial notification.

3. PRIORITY REPORTING OF SIGNIFICANT EVENTS

The Discharger shall report any noncompliance that endangers human health or the environment within **24 hours** of becoming aware of its occurrence. The incident shall be reported to the Regional Water Board, the local environmental health department, and to the California Governor's Office of Emergency Services (CalOES). During non-business hours, the Discharger shall leave a message on the Regional Water Board's voice mail. The message shall include the time, date, place, and nature of the noncompliance, name, and number of the reporting person, and shall be recorded in writing by the Discharger. CalOES is operational 24 hours a day. A written report shall be submitted to the Regional Water Board office within **10 working days** of the Discharger becoming aware of the incident. The report shall contain a description of the noncompliance, causes, duration, and the actual or anticipated time for achieving compliance. The report shall include complete details of steps that the Discharger has taken or intends to take to prevent recurrence. All intentional or accidental spills shall be reported as required by this provision. The written submission shall contain:

a. The approximate date, time, and location of the noncompliance including a description of the ultimate destination of any unauthorized discharge and the flow path of such discharge to a receiving water body;

b. A description of the noncompliance and its cause;

c. The flow rate, volume, and duration of any discharge involved in the noncompliance;

d. The amount of precipitation (in inches) the day of any discharge and for each of the seven days preceding the discharge;

e. A description (location, date and time collected, field measurements of pH, temperature, dissolved oxygen and electrical conductivity, sample identification, date submitted to laboratory, and analyses requested) of noncompliance discharge samples and/or surface water samples taken;

f. The period of noncompliance, including dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue;

g. A time schedule and a plan to implement corrective actions necessary to prevent the recurrence of such noncompliance; and

h. The laboratory analyses of the noncompliance discharge sample and/or upstream and downstream surface water samples shall be submitted to the Regional Water Board office within **45 days** of the discharge.

C. RECORD-KEEPING REQUIREMENTS

The Discharger must retain records of all monitoring information, including all calibration and maintenance records, and copies of all reports required by this MRP, for a minimum of **5 years** from the date of sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding the discharge or when requested by the Regional Water Board. Records of monitoring information must include at a minimum:

a. The date, identity of sample, monitoring point from which the sample was collected, and time of sampling or measurement;

b. The name of the individual(s) who performed the sampling or measurements;

c. Training logs and records;

d. Date and time that analyses were started and completed;

e. The analytical techniques or method used, including method of preserving the sample and the identity and volume of reagents used;

f. Calculation of results;

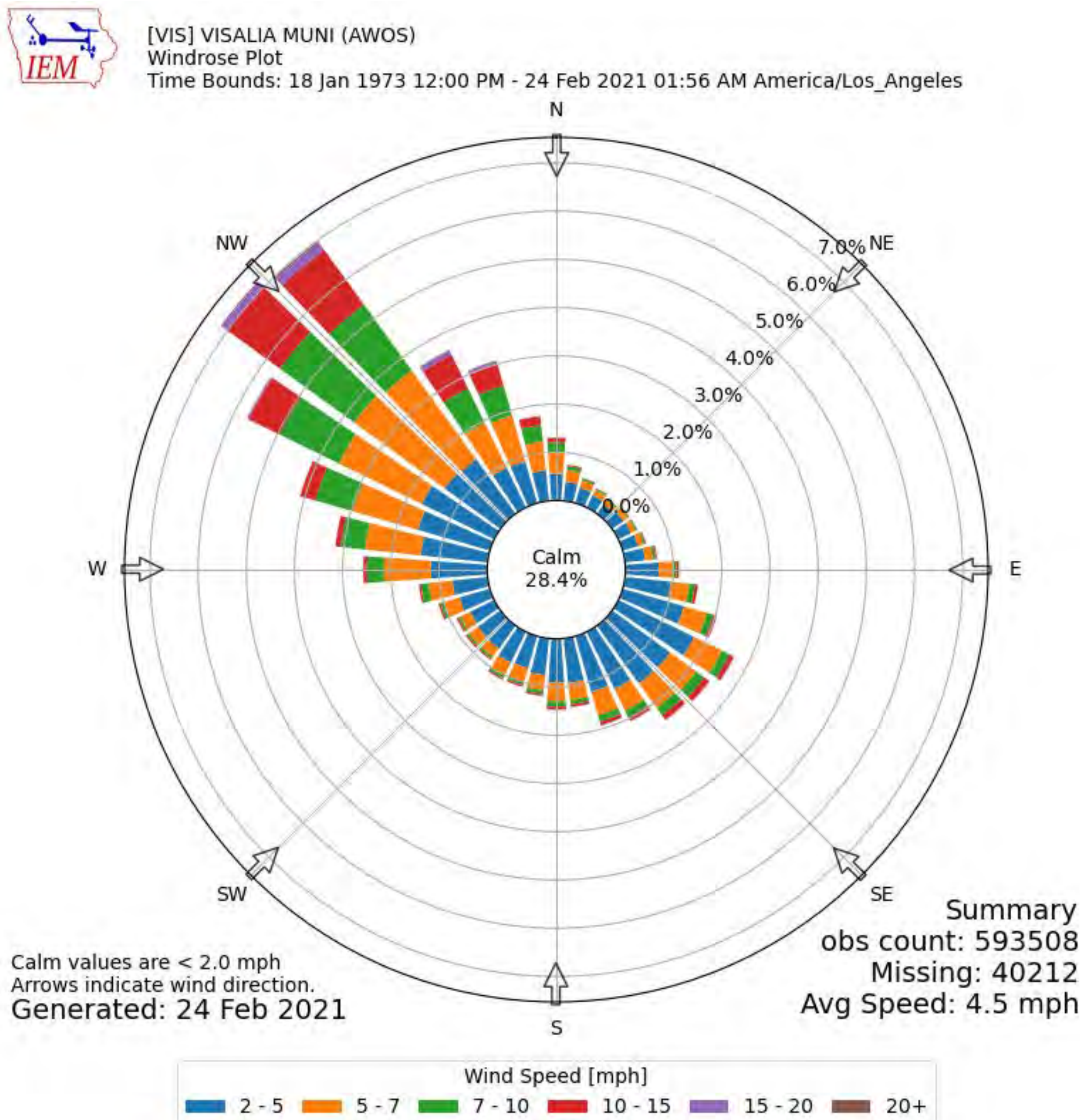
g. Results of analyses performed and method used (as proposed in an NOI and accompanying technical report, and approved by the Regional Water Board) for calculating the concentration limits for each naturally occurring constituents, based on background water quality monitoring data;

h. Results of analyses and the MDL for each non-naturally occurring constituent;

i. Laboratory quality assurance results (e.g., percent recovery, response factor, etc.); and

j. Chain of Custody forms.

Ordered by:_________________________
Regional Water Board
Executive Officer



https://mesonet.agron.iastate.edu/sites/windrose.phtml?station=VIS&network=CA_ASOS)

APPENDIX "E"

CEQA PROCESS

Notice of Preparation Tracking Table

NOTICE OF PREPARATION
Visalia Landfill Compost and Biomass Conversion Facility (SCH# 2021020054)

AGENCY / ENTITY	DOCUMENTS SENT						DELIVERY METHOD					NOTES / COMMENTS RECEIVED
	Electronic				Hard Copy							
	Electronic Submittal Form NOC	NOC	Notice	NOP	Notice	NOP	Hand Delivered / Interoffice	E-mail	FedEx	Certified US Mail	Return Receipt	
AVAILABILITY OF PUBLIC VIEWING												
Tulare County Resource Management Agency 5961 S. Mooney Blvd. Visalia, CA 93277-9394						X	2/3/21					
Tulare County Clerk/Recorder County Civic Center Courthouse, Room 105 221 S. Mooney Blvd. Visalia, CA 93291			X					2/3/21				
Tulare County Website: https://tularecounty.ca.gov/rma/index.cfm/planning-building/environmental-planning/environmental-impact-reports/visalia-landfill-compost-and-biomass-conversion-facility/												
STATE CLEARINGHOUSE (Agencies below were marked with "X" on the NOC)	X	X		X			2/3/21 Direct Upload					**2/3/21**, email from Meng Heu stating project has been posted **2/19/21**, RMA email sent requesting notification to Agencies regarding another scoping meeting.
• Air Resources Board												
• Caltrans District #6												
• Department of Conservation												
• Energy Commission												
• Fish and Wildlife Region #4												see below
• Native American Heritage Commission												see below
• Public Utilities Commission												
• Regional Water Quality Control Board District #5F												see below
• Resources Recycling and Recovery – CalRecycle												**3/3/21**, letter from Joy Isaacson received.
• Resources Agency												
• State Water Resources Control Board – Water Quality												
• Toxic Substances Control												

NOTICE OF PREPARATION
Visalia Landfill Compost and Biomass Conversion Facility (SCH# 2021020054)

AGENCY / ENTITY	DOCUMENTS SENT						DELIVERY METHOD					NOTES / COMMENTS RECEIVED
	Electronic				Hard Copy							
	Electronic Submittal Form NOC	NOC	Notice	NOP	Notice	NOP	Hand Delivered / Interoffice	E-mail	FedEx	Certified US Mail	Return Receipt	
MILITARY												
Mr. David S. Hulse Naval Facilities Engineering Command Community Plans Liaison Officer (CPLO) 1220 Pacific Highway AM-3 San Diego, CA 92132						X				2/4/21 7014015000 0115371176	2/8/21 per USPS website	
STATE & REGIONAL AGENCIES												
CA Environmental Protection Agency P.O. Box 2815 Sacramento, CA 95812-2815						X				2/4/21 7014015000 0115371183	2/8/21 per USPS website	
CA Dept. of Fish and Wildlife Region 4 – Central Region 1234 E. Shaw Avenue Fresno, CA 93710 R4CEQA@wildlife.ca.gov				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021. **3/5/21**, comments from Julie Vance received.
CA Dept. of Toxic Substances Control P.O. Box 806 Sacramento, CA 95812-0806						X				2/4/21 7014015000 0115371190	2/8/21 per USPS website	
CA Dept. of Transportation, District 6 1352 W. Olive Ave P.O. Box 12616 Fresno, CA 93778-2616 david.deel@dot.ca.gov lorena.mendibles@dot.ca.gov				X				2/3/21			2/3/21 email delivery receipt	**2/16/21**, comment letter from David Deel received. 2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
CA Department of Water Resources 1416 Ninth Street Sacramento, CA 95814						X				2/4/21 7014015000 0115371206	2/8/21 per USPS website	**3/17/21**, letter from Richard Draeger received.

NOTICE OF PREPARATION
Visalia Landfill Compost and Biomass Conversion Facility (SCH# 2021020054)

AGENCY / ENTITY	DOCUMENTS SENT						DELIVERY METHOD					NOTES / COMMENTS RECEIVED
	Electronic				Hard Copy							
	Electronic Submittal Form NOC	NOC	Notice	NOP	Notice	NOP	Hand Delivered / Interoffice	E-mail	FedEx	Certified US Mail	Return Receipt	
CA Natural Resources Agency 1416 Ninth Street, Suite 1311 Sacramento, CA 95814						X				2/4/21 7014015000 0115371213	2/8/21 per USPS website	
CA Public Utilities Commission 770 L. Street Sacramento, CA 95841						X				2/4/21 7014015000 0115371220	---	2/17/21, envelope returned as "Insufficient Address, Unable to Forward"
Native American Heritage Commission 1550 Harbor Blvd, Suite 100 West Sacramento, CA 95691 NAHC@nahc.ca.gov				X				2/3/21			2/3/21 email delivery receipt	**2/3/21**, letter from Nancy Gonzalez-Lopez received. 2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
State Water Resources Control Board P.O. Box 100 Sacramento, CA 95812						X				2/4/21 7014015000 0115371237	2/8/21 per USPS website	
Regional Water Quality Control Board Region 5 – Central Valley 1685 E Street Fresno, CA 93706 CentralValleyFresno@waterboards.ca.gov				X				2/3/21			2/3/21 email delivery receipt	**2/3/21**, automated confirmation of receipt email received. 2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.

NOTICE OF PREPARATION
Visalia Landfill Compost and Biomass Conversion Facility (SCH# 2021020054)

AGENCY / ENTITY	DOCUMENTS SENT						DELIVERY METHOD					NOTES / COMMENTS RECEIVED
	Electronic				Hard Copy							
	Electronic Submittal Form NOC	NOC	Notice	NOP	Notice	NOP	Hand Delivered / Interoffice	E-mail	FedEx	Certified US Mail	Return Receipt	
San Joaquin Valley APCD Permit Services – CEQA Division 1990 E. Gettysburg Ave. Fresno, CA 93726 CEQA@valleyair.org				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021. **3/5/21**, letter from John Stagnaro (via Eric McLaughlin) received.
LOCAL AGENCIES												
City of Visalia Attn: Randy Groom, City Manager 220 N. Santa Fe Street Visalia, CA 93292 Randy.Groom@visalia.city				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
City of Visalia Attn: Planning Director 315 E. Acequia Avenue Visalia, CA 93291 Paul.Bernal@visalia.city				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
City of Visalia Solid Waste Attn: Jason Serpa, Manager Jason.Serpa@visalia.city								2/25/21			---	**2/25/21**, email rom Jason Serpa received; J. Willis responded and provided a copy of the NOP via email
Tulare County Agricultural Commissioner 4437 S. Laspina Street Tulare CA 93274 TTucker@co.tulare.ca.us				X				2/3/21			2/3/21 email delivery receipt	**2/4/21**, email from Tom Tucker received 2/19/21, RMA email sent with update for another

NOTICE OF PREPARATION
Visalia Landfill Compost and Biomass Conversion Facility (SCH# 2021020054)

AGENCY / ENTITY	DOCUMENTS SENT						DELIVERY METHOD					NOTES / COMMENTS RECEIVED
	Electronic				Hard Copy							
	Electronic Submittal Form NOC	NOC	Notice	NOP	Notice	NOP	Hand Delivered / Interoffice	E-mail	FedEx	Certified US Mail	Return Receipt	
												scoping meeting scheduled for Feb. 25, 2021.
Tulare County Association of Governments Attn: Ted Smalley 210 N. Church Street, Suite B Visalia, CA 93291 TSmalley@tularecog.org				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
Tulare County Farm Bureau Tricia Stever Blattler, Exec. Director P.O. Box 748 Visalia, CA 93291 pstever@tulcofb.org				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
Tulare County Fire Warden 835 S. Akers Street Visalia, CA 93277						X	2/4/21 Interoffice				---	
Tulare County Health & Human Services Agency Environmental Health Department Attn: Allison Shuklian 5957 S. Mooney Blvd Visalia, CA 93277 AShuklia@tularehhsa.org Nilsa Gonzalez, Public Health Deputy Director and Environmental Health Director				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021. **3/8/21**, letter received from Jessica Gocke, REHS, DPA, Supervising Environmental Health Specialist
Tulare County Local Agency Formation Commission 210 N. Church Street, Suite B Visalia, CA 93291						X	2/4/21 Interoffice				---	
Tulare County Office of Emergency Services Attn: Sabrina Bustamante / Megan Fish				X				2/3/21			2/3/21	2/19/21, RMA email sent with

NOTICE OF PREPARATION
Visalia Landfill Compost and Biomass Conversion Facility (SCH# 2021020054)

AGENCY / ENTITY	DOCUMENTS SENT						DELIVERY METHOD					NOTES / COMMENTS RECEIVED
	Electronic				Hard Copy							
	Electronic Submittal Form NOC	NOC	Notice	NOP	Notice	NOP	Hand Delivered / Interoffice	E-mail	FedEx	Certified US Mail	Return Receipt	
5957 S. Mooney Blvd Visalia, CA 93277 slbustamante@co.tulare.ca.us mfish@co.tulare.ca.us											email delivery receipt	update for another scoping meeting scheduled for Feb. 25, 2021.
Tulare County Resource Management Agency- 5961 S. Mooney Blvd. Visalia, CA 93277 Economic Development - jmartinez2@co.tulare.ca.us Fire – gportillo@co.tulare.ca.us Flood Control – rschenke@co.tulare.ca.us rmiller@co.tulare.ca.us Public Works – hbeltran@co.tulare.ca.us jwong@co.tulare.ca.us				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
Tulare County Resources Conservation District 3530 W. Orchard Ct Visalia, CA 93277						X				2/4/21 7014015000 0115371244	2/8/21 per USPS website	
Tulare County Sheriff's Office – Headquarters 2404 W. Burrel Avenue Visalia, CA 93291						X	2/4/21 Interoffice				---	
Tulare County U.C. Cooperative Extension 4437 S. Laspina Street Tulare, CA 93274						X				2/4/21 7014015000 0115371251	2/8/21 per USPS website	
TRIBES												
Kern Valley Indian Tribe Robert Robinson, Co-Chairperson P.O. Box 1010 Lake Isabella, CA 93240 bbutterbredt@gmail.com				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.

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	Electronic Submittal Form NOC	NOC	Notice	NOP	Notice	NOP	Hand Delivered / Interoffice	E-mail	FedEx	Certified US Mail	Return Receipt	
Kern Valley Indian Tribe Julie Turner, Secretary P. Box 1010 Lake Isabella, CA 93240 meindiangirl@sbcglobal.net				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
Kern Valley Indian Tribe Brandi Kendricks 30741 Foxridge Court Tehachapi, CA 93561 krazykendricks@hotmail.com				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
Santa Rosa Rancheria Tachi Yokut Tribe Leo Sisco, Chairperson P. O. Box 8 Lemoore, CA 93245 LSisco@tachi-yokut-nsn.gov				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
Santa Rosa Rancheria Tachi Yokut Tribe Robert Jeff, Vice-Chair P. O. Box 8 Lemoore, CA 93245 RGJeff@tachi-yokut-nsn.gov				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
Santa Rosa Rancheria Tachi Yokut Tribe Bianca Arias, Admin. Assistant. P. O. Box 8 Lemoore, CA 93245 BArias@tachi-yokut-nsn.gov				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
Santa Rosa Rancheria Tachi Yokut Tribe Cultural Department Shana Powers, Director P. O. Box 8 Lemoore, CA 93245 SPowers@tachi-yokut-nsn.gov				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.

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Santa Rosa Rancheria Tachi Yokut Tribe Cultural Department Greg Cuara, Cultural Specialist P. O. Box 8 Lemoore, CA 93245 GCuara@tachi-yokut-nsn.gov				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
Santa Rosa Rancheria Tachi Yokut Tribe Cultural Department Samantha McCarty, Cultural Specialist P. O. Box 8 Lemoore, CA 93245 SMcCarty@tachi-yokut-nsn.gov				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
Tubatulabals of Kern Valley Robert L. Gomez, Jr., Chairperson P.O. Box 226 Lake Isabella, CA 93240 rgomez@tubatulabal.org				X		X		2/3/21		2/4/21 7014015000 0115371268	2/3/21 email delivery failure 2/6/21 per USPS website	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
Tule River Indian Tribe Neil Peyron, Chairperson P. O. Box 589 Porterville, CA 93258 neil.peyron@tulerivertribe-nsn.gov				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
Tule River Indian Tribe Dept. of Environmental Protection Kerri Vera, Director P. O. Box 589 Porterville, CA 93258 tuleriverenv@yahoo.com				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
Tule River Indian Tribe Dept. of Environmental Protection Felix Christman, Archaeological Monitor P. O. Box 589 Porterville, CA 93258				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting

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Tuleriverarchmon1@gmail.com												scheduled for Feb. 25, 2021.
Wuksache Indian Tribe/ Eshom Valley Band Kenneth Woodrow, Chairperson 1179 Rock Haven Ct. Salinas, CA 93906 Kwood8934@aol.com				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
OTHER INTERESTED PARTIES												
Tulare County Public Works 5961 S. Mooney Blvd. Visalia, CA 93277 jtrevino@tularecounty.ca.gov lbfeldstein@tularecounty.ca.gov				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
Edgar Engineering Inc. 1822 21st Street Sacramento, CA 95811 evan@edgarinc.org neil@edgarinc.org				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
Yorke Engineering RKingsley@YorkeEngr.com												2/19/21, e RMA mail sent with update for another scoping meeting scheduled for Feb. 25, 2021.
ekul79@sbcglobal.net												
Michael Lozeau Lozeau Drury LLP 1939 Harrison St, Ste 150 Oakland, CA 94612 michael@lozeaudrury.com				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.

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Hannah Hughes Lozeau Drury LLP 1939 Harrison St, Ste 150 Oakland, CA 94612 hannah@lozeaudrury.com				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
Komalpreet Toor Lozeau Drury LLP 1939 Harrison St, Ste 150 Oakland, CA 94612 komal@lozeaudrury.com				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.
Maya Vishwanath Lozeau Drury LLP 1939 Harrison St, Ste 150 Oakland, CA 94612 maya@lozeaudrury.com				X				2/3/21			2/3/21 email delivery receipt	2/19/21, RMA email sent with update for another scoping meeting scheduled for Feb. 25, 2021.

Notice of Preparation
February 3, 2021

NOTICE OF PREPARATION

To:	State Clearinghouse	From:	County of Tulare – RMA
	PO Box 3044/ 1400 Tenth St		5961 S Mooney Blvd
	Sacramento, CA 95814		Visalia CA 93277

Date: February 2, 2020

Subject: Notice of Preparation (NOP) of a Draft Focused Environmental Impact Report (EIR) and Scoping Meeting

Project Title: Visalia Landfill – Compost and Biomass Conversion Facility

Project Applicant: County of Tulare

Project Location: Physical Address: 8614 Avenue 328, Visalia, CA 93291;
Assessor Parcel Number (APN): 119-010-039;
Section/Township/Range: Sec. 4, T. 19 S., R. 24 E, MDB&M
Latitude/Longitude: 36° 23' 10.64" N, 119° 22' 13" W

Tulare County Resource Management Agency (RMA) will be the Lead Agency and will prepare a focused environmental impact report for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit(s) or other approval(s) for the project. In addition, please provide us with contact information of the person(s) in your agency that we may contact during the CEQA process.

The project description, location, and the potential environmental effects are contained in the attached materials. The NOP is also available on the County website at:
https://tularecounty.ca.gov/rma/index.cfm/planning-building/environmental-planning/environmental-impact-reports/visalia-landfill-compost-and-biomass-conversion-facility/

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

A scoping meeting is scheduled for **Thursday, February 18, 2021, at 1:30 P.M.** in the Main Conference Room of the Tulare County Resource Management Agency at the address shown above. You can also participate via Zoon at: Join Zoom Meeting
https://tularecounty-ca.zoom.us/j/96654431762?pwd=ejJoK3NjZUtNTWZhQytvNS95aE1zQT09;
Meeting ID: 966 5443 1762; Passcode: 39516; One tap mobile at +16699009128,,96654431762# US (San Jose); or Dial by your location at +1 669 900 9128 US (San Jose).

Please direct your response to Hector Guerra, Chief Environmental Planner at the address shown above. He may be contacted by e-mail at hguerra@co.tulare.ca.us or by telephone at 559-624-7121.

Signature: Hector Guerra
Hector Guerra
Title: Chief Environmental Planner
Date: 2/2/21

Signature: RS
Reed Schenke, P.E.
Title: RMA Director / Environmental Assessment Officer
Date: 2/2/21

PROJECT DESCRIPTION: The full Project description, location, and identification of potential environmental effects are contained in the attached materials. In accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (RMA) will be preparing a Focused Environmental Impact Report (EIR) to evaluate the environmental effects associated with the development of an Compost and Biomass Conversion Facility (Project) on the existing Visalia Landfill site an approximately 36.0 acre site located at the northeast corner of Avenue 328 and Road 80 approximately six miles northwest of the City of Visalia. The site is currently zoned as AE-40. See Figures 1, 2a, and 2b for site plans illustrating the facility's location and features.

Compost Facility

The County intends to develop and operate a covered aerated static pile (CASP) compost facility to comply with the upcoming SB 1383 regulations. The compost facility will be located on the County's Visalia Landfill property that encompasses approximately 634 acres, of which the compost facility will occupy 36 acres, located in a soil borrow recessed approximately 20 feet below grade. The compost facility will be designed to accept up to 200,000 tons per year (TPY) in increments of 50,000 TPY technology modules and can store up to 200,000 cubic yards on-site of organic material that would have otherwise been landfilled. The compost facility would include installing processing and composting equipment, a 50,000 square foot processing building, compacted compost pads, and a lined pond. When operational, the proposed Project is proposing to operate Monday-Friday between 6:00 a.m. to 4:00 p.m., and 7:00 a.m. to 12:00 p.m. (noon) on Saturdays. Depending upon demand, summer hours may begin earlier than 6:00 a.m. A majority of the trips will occur between 7:00 a.m. and 9:00 a.m., and between 4:00 and 6:00 p.m. The Project would utilize approximately 15-20 employees and include an approximate 1,000 square foot office.

Biomass Facility

Tulare County Public Works is proposing to amend their CUP application to add a 2.0 mega-watt (MW) biomass conversion facility at their landfill. The facility will produce electricity, heat and biochar using wood fuel that will be provided by local activities to reduce landfill disposal to meet the mandates of SB 1383 to reduce 75% of all organic, which includes wood waste, from landfill disposal by 2025. The facility will utilize approximately 18,000 bone dry tons (BDT) of wood chips per year or 25,000 tons of per year of wet recovered wood waste and produce approximately a net amount (after parasitic load) 2.0 MW of electrical energy per hour. In addition to this the facility will also produce approximately 20-30 MM BTU of waste heat and approximately 300-600 pounds of biochar per hour. The facility is planned to operate 24/7, however given there will be maintenance requirements for the equipment it is anticipated that the gas production equipment and the GE Jenbacher internal combustion engine generator sets ("gensets") will likely only operate between 7,000 and 8,000 hours per year, or approximately 80-90% capacity.

Figures included in this Notice:

Figure 1 – Regional and Vicinity Location
Figures 2a and 2b – Site Maps

Potential Approvals Required:

The following agencies may have jurisdiction/interests concerning the proposed Project:

California Department of Resources and Recycling and Recovery (Cal Recycle)
City of Visalia
County of Tulare Health and Human Services Agency
County of Tulare Resource Management Agencies (Fire, Flood, Public Works)
Regional Water Quality Control Board
San Joaquin Valley Unified Air Pollution Control District

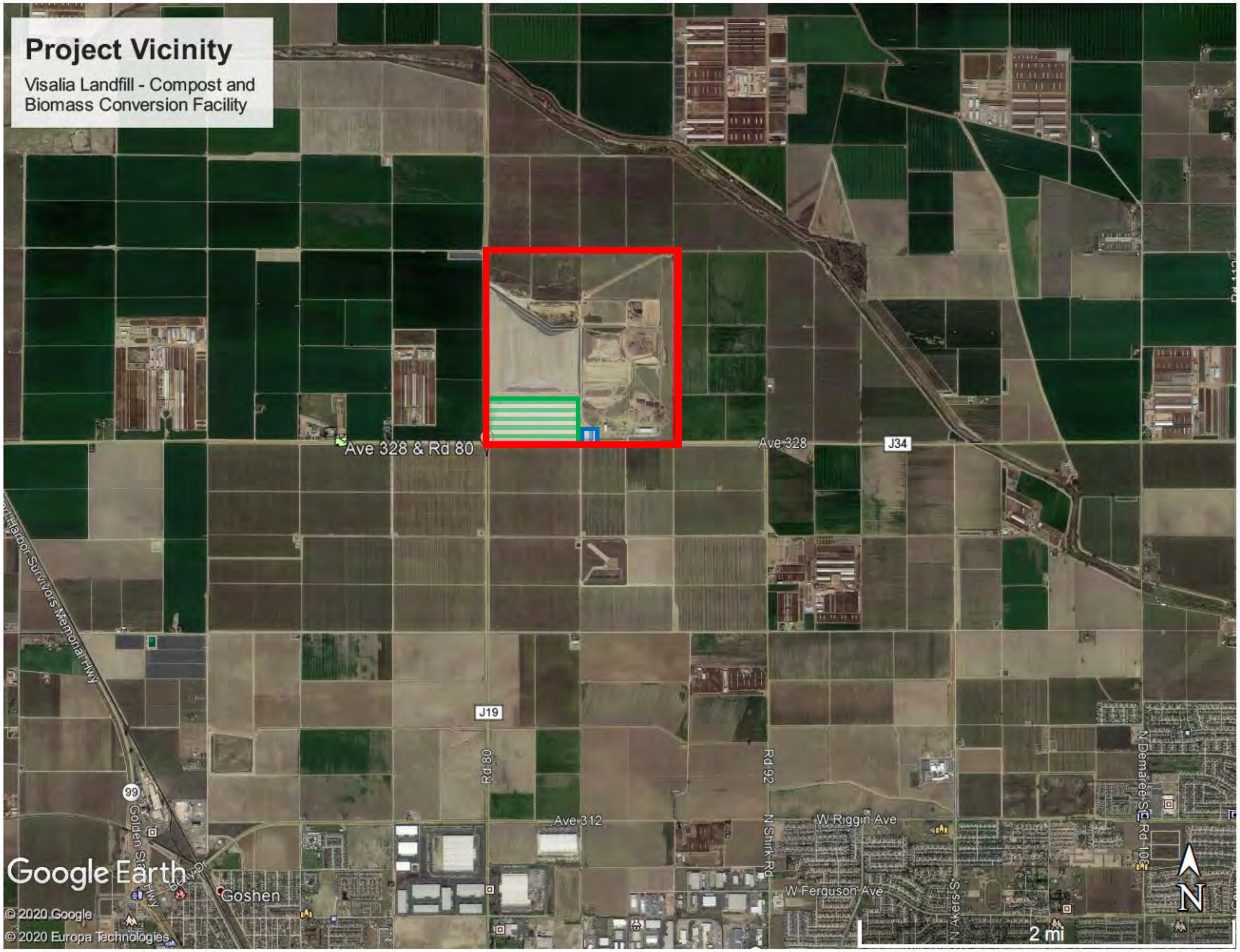
The following interested persons/parties are also included in this notification:

Evan Edgar: evan@edgarinc.org

If you require additional information related to this notice, please contact:

Hector Guerra, Chief Environmental Planner at:
E-mail: hguerra@co.tulare.ca.us; or
Phone: (559) 624-7121

Figure 1 - Vicinity Map



Landfill Boundary　Composting Area　Biomass Area

Figure 2a – Entire Visalia Landfill Site Plan

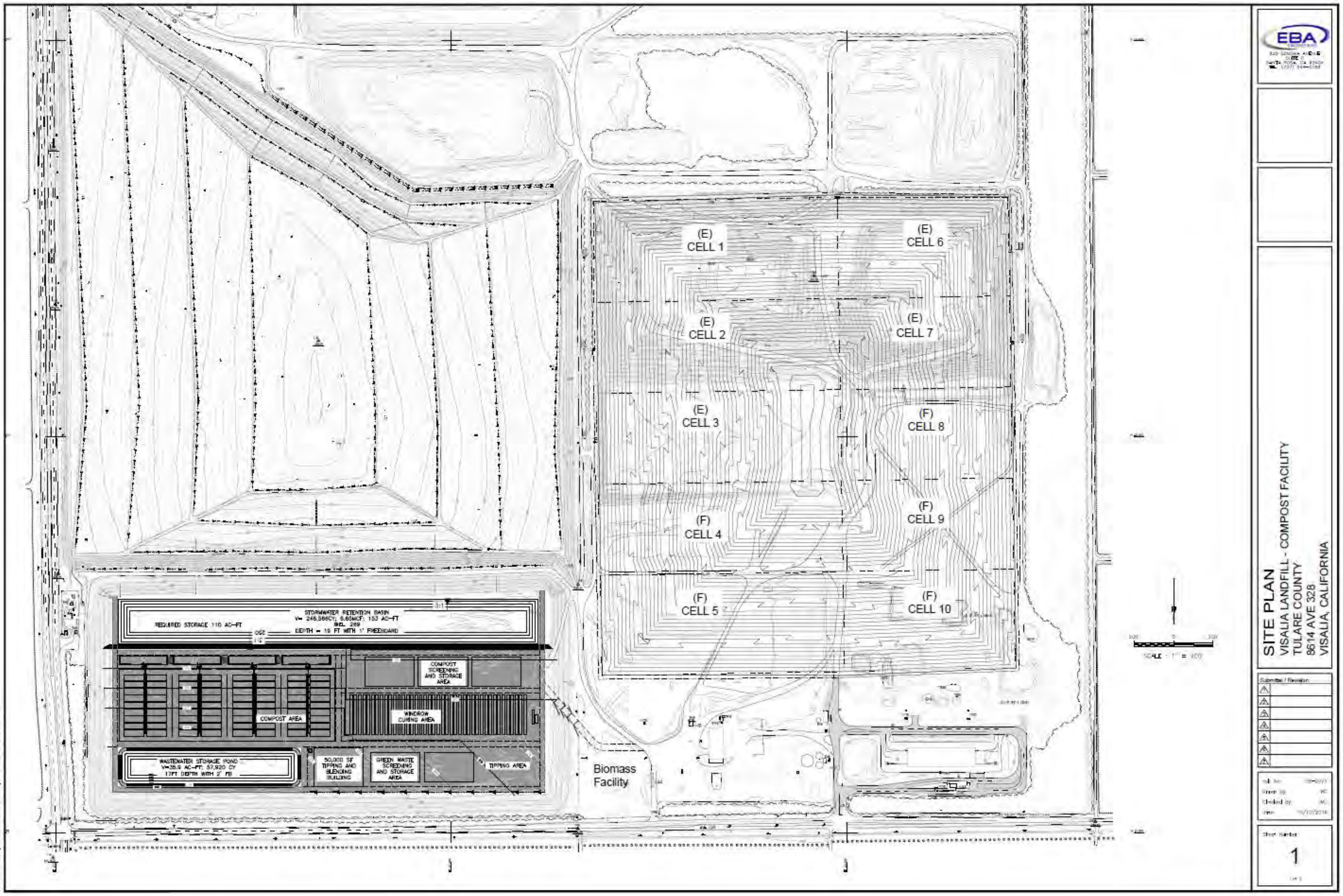
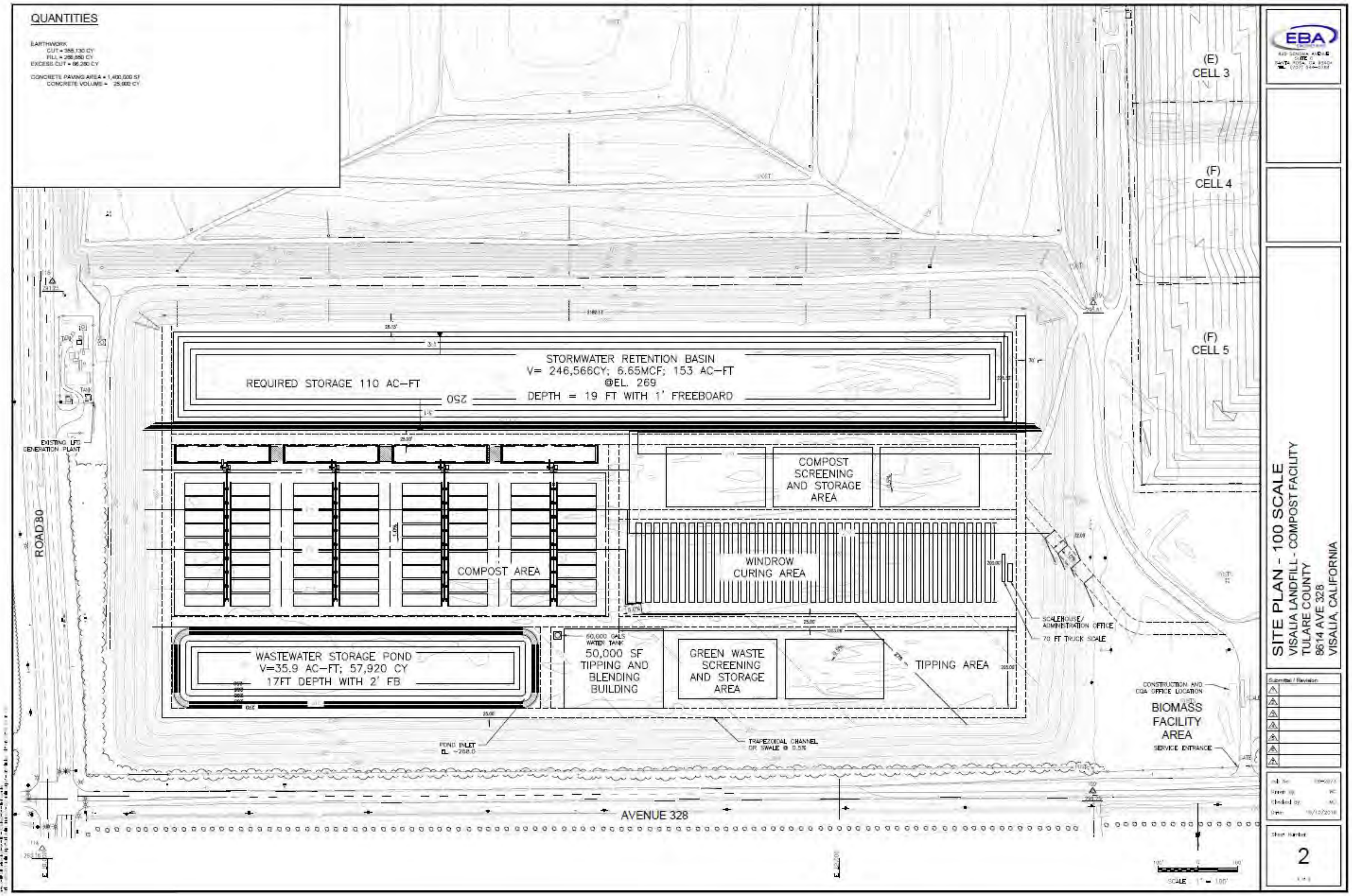


Figure 2b – Visalia Landfill Site Plan Showing Composting and Biomass Facilities



PROJECT LOCATION AND SETTING

As noted earlier, the proposed Project will be located on the existing Visalia Landfill site on an approximately 36.0-acre portion of the site located at the northeast corner of Avenue 328 and Road 80 approximately six miles northwest of the City of Visalia. The Visalia Landfill site (634 acres) is located entirely within an unincorporated area of Tulare County. Specifically, the proposed Project is located on APN: 119-010-039 with a physical address of 7763 Avenue 280, Visalia, California.

The proposed Project is located with the Visalia Urban Area Boundary. State Route 99 is proximate to the site thereby providing regional access to the proposed Project site: State Route 198 is located approximately two miles north of the site and could be accessed via SR 99, (see Figure 1).

The site is flat with minimal slope and is currently used as the Visalia landfill. The site is zoned as AE-40 (Exclusive Agriculture-40 Acre minimum) and is proposed to remain as such pending approval of a Special Use Permit, which is the subject matter of this NOP and forthcoming Focused EIR. No expansion of the existing footprint is being proposed. The site is surrounded by intensive agricultural operations. A walnut orchard is located north of the landfill property, while row crops are immediately to the east and south. A dairy is located immediately to the west.

DESCRIPTION OF PROPOSED FACILITIES

As indicated earlier, the proposed Project will be entirely within the existing Visalia Landfill. The compost facility will be designed to accept up to 200,000 tons per year (TPY) in increments of 50,000 TPY technology modules and can store up to 200,000 cubic yards on-site of organic material that would have otherwise been landfilled. The compost facility would include installing processing and composting equipment, a 50,000 square foot processing building, compacted compost pads, and a lined pond. See Sheets 1 and 2 (attached) for site plans illustrating the facility's location and features.

The proposed 2.0 mega-watt (MW) biomass conversion facility will produce electricity, heat and biochar using wood waste as fuel. The facility will utilize approximately 18,000 bone dry tons (BDT) of wood chips per year or 25,000 tons of per year of wet recovered wood waste. The facility is anticipated to produce approximately 20-30 MM BTU of waste heat and approximately 300-600 pounds of biochar per hour and operate 24/7. However; as noted earlier, due to maintenance requirements for the equipment it is anticipated that the gas production equipment and internal combustion engine "gensets" will likely operate between 80-90% capacity (or approximately 7,000 and 8,000 hours per year).

More detail is provided in the Project Descriptions in Attachments "A" and "B".

POTENTIAL ENVIRONMENTAL EFFECTS

The EIR will evaluate, among other things, the probable direct and cumulative environmental impacts associated with expansion of uses within Visalia Landfill and operation of the Project. Mitigation measures will be recommended, where feasible, to mitigate potentially significant impacts. The proposed Project will be evaluated on its own merits, resource specific facts, and determinations; therefore, a project specific environmental document will be prepared. The following resources will not be impacted by the proposed Project and will not be discussed in the Focused EIR: Aesthetics, Agriculture and Forestry Resources, Hazards and Hazardous Materials, Land Use/Planning, Mineral Resources, Noise, Population/Housing, Public Services, Recreation, Utilities/Service Systems, and Wildfire.

The following resources are proposed for analysis in the Focused EIR:

Air Quality/Energy/ Greenhouse Gas Emissions

The EIR will describe regional and local air quality in the vicinity of the proposed Project site and evaluate impacts to air quality associated with the construction, expansion, and continued operation of the Project. It is anticipated that an air quality study will be prepared to establish baseline, project, and cumulative impacts. The proposed Project's estimated air emissions will be compared to emissions thresholds of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The EIR will describe existing air quality conditions within the San Joaquin Valley Air Basin and will evaluate the proposed Project's potential air quality impacts. Potential air quality emissions impacts include odor, dust, pathogens, and construction related activities; however, the Project will be required to comply with applicable rules, regulations, permits, health risk assessment, etc.

Biological Resources

Although unlikely, construction of some proposed Project features may modify biotic habitats used by sensitive plant and wildlife species. As such, site development may be regulated by state or federal agencies, subject to provisions of the California Environmental Quality Act (CEQA), and/or covered by policies and ordinances of Tulare County. A biological report will be prepared to address issues related to: 1) sensitive biotic resources occurring on the project site; 2) the federal, state, and local laws regulating such resources; and 3) mitigation measures that may be required to reduce the magnitude of anticipated impacts and/or comply with permit requirements of state and federal resource agencies. The proposed Project's potential to affect biological resources will be analyzed in the EIR.

Cultural and Tribal Cultural Resources

There are no visibly identifiable or recognizable cultural resources within the proposed Project expansion areas. Native American tribes will be consulted consistent with AB 52; a Sacred Lands File Search will be requested from the California Native American Commission (NACH). A cultural resources records search will be requested of The California Historical Resources Information System/Southern San Joaquin Valley

Information Center (SSJVIC). The results will be incorporated into the Focused EIR. As such, this DEIR will include an analysis of the proposed Project's potential to affect cultural and tribal cultural resources.

Energy

Electrical Service would be extended to the site and an electrical utility pole would be constructed on-site to provide power to run compost equipment, processing equipment, blowers, and an electric grinder. It is not anticipated that energy usage (e.g., gas, gasoline/diesel fuels, electricity) will substantially increase. Rather, as the biomass facility will generate electricity, this energy resource will likely result in a net benefit. The EIR will include an analysis of the energy resource.

Geology/Soils

Construction and operation of the proposed Project facilities on the project site could result in impacts related to geotechnical hazards, including seismicity of the area, potential for liquefaction and subsidence, potential for soil erosion, soil stability characteristics, and shrink/swell potential of site soils, as applicable. According to the USDA Natural Resources Conservation Service Soil Resource Report for Western Tulare County, the site contains approximately 99% Calgro-Calgro, saline-sodic complex, 0-2% slopes; and Crosscreek-Kai association, loam, 0-2% slopes. As noted in the Visalia Landfill EIR, Initial Study (page 14), "The soil beneath the site consists of coarse-grained sand, silty sand, and silty clay units." It is currently unknown whether the proposed Project site soils have the potential to contain paleontological resources. If such resources exist on the site, construction, expansion, and continued operational activities could result in potentially significant impacts. The EIR for the proposed Project will evaluate potential site-specific impacts related to geology, soils, and paleontological resources.

Greenhouse Gas Emissions

Implementation of the proposed Project would result in beneficial impacts resulting from project-related greenhouse gases. The EIR will include a discussion of greenhouse gas emissions and the proposed Project's contribution to potential cumulative impacts on global climate. The proposed Project's estimated greenhouse gas emissions will be evaluated for consistency with the Tulare County 2030 General Plan, the Tulare County Climate Action Plan, and the State's 2017 Scoping Plan. The EIR will include a discussion of greenhouse gas emissions and the proposed Project's contribution to potential cumulative impacts on global climate.

Hydrology/Water Quality

FEMA FIRM maps indicate that the proposed Project area site is located in Flood Zone B (the 500-year flood boundary) and outside the 100-year flood hazards area. and is also located outside of a Dam Failure Inundation Area. Water is supplied through existing on-site wells for use in landfill operations (e.g., dust control), the future composting operations, a minor amount for the office facility. The EIR will describe the proposed Project's effect, both directly and cumulatively on the hydrology, water quality, and water supply resources. The EIR will analyze the proposed Project's effect on the hydrology, water quality, and water supply resources.

Transportation/Traffic

The EIR will evaluate the Project's impact on regional and local transportation facilities based on a transportation analysis that will assess construction-related impacts (heavy truck trips and construction worker trips), as well as operational impacts (employee trips, incoming and outgoing materials heavy-duty truck transport, access, and parking). Site access will be provided via one main driveway connecting to the north side of Avenue 328. There would be no increase in the current tons traffic permit limits stated in the Solid Waste Facility Permit for the landfill, as the current green waste and wood waste is being diverted now, and the new organic wastes tons would be diverted directly to the compost facility instead of to the landfill. The EIR will analyze outgoing vehicle trips delivering finished compost and other potential traffic impacts.

Tribal Cultural Resources

See earlier discussion at Cultural and Tribal Cultural Resources.

GROWTH INDUCEMENT

The EIR will evaluate the proposed Project's potential for growth inducement resulting from expansion or extension of infrastructure improvements, as well as new demand for housing, and goods and services. The effect of primary and secondary increases in employment and economic activity will be discussed.

CUMULATIVE IMPACTS

The EIR will discuss the incremental contribution of the proposed Project to cumulative effects of other past, current, and planned and reasonably foreseeable Projects in the vicinity. The summary of projects method will be used where applicable. Also, to the extent feasible, the Cumulative Impacts section will quantify the degree of severity of any cumulative impact.

ALTERNATIVES EVALUATED IN THE EIR

In accordance with the CEQA Guidelines Section 15126.6, the EIR will describe a reasonable range of alternatives to the proposed Project that are capable of meeting most of the proposed Project's objectives, but would avoid or substantially lessen any of the significant effects of the proposed Project. The EIR will also identify any alternatives that were considered but rejected by the Lead Agency as infeasible and briefly explain the reasons why. The EIR will also provide an analysis of the No Project Alternative.

OPPORTUNITY FOR PUBLIC COMMENT

Interested individuals, groups, and agencies may provide to the County of Tulare Resource Management Agency, Planning Branch, written comments on topics to be addressed in the EIR for the proposed Project. Because of time limits mandated by state law, comments should be provided no later than ***5:00 p.m. March 5, 2021***. Agencies that will need to use the EIR when considering permits or other approvals for the proposed Project should provide the name of a staff contact person. Please send all comments to:

Hector Guerra, Chief Environmental Planner
Tulare County Resource Management Agency
Economic Development and Planning Branch
5961 South Mooney Boulevard
Visalia, CA 93277-9394
E-mail at: HGuerra@co.tulare.ca.us;
Phone: (559) 624-7121

Attachment A

Project Description – Biomass Facility

2MW Biomass Facility

I. Project Overview

Tulare County Public Works is proposing to amend their CUP application to add a 2.0 mega-watt (MW) biomass conversion facility at their landfill. The facility will produce electricity, heat and biochar using wood fuel that will be provided by local activities to reduce landfill disposal to meet the mandates of SB 1383 to reduce 75% of all organic, which includes wood waste, from landfill disposal by 2025.

The facility will utilize approximately 18,000 bone dry tons (BDT) of wood chips per year or 25,000 tons of per year of wet recovered wood waste and produce approximately a net amount (after parasitic load) 2.0 MW of electrical energy per hour. In addition to this the facility will also produce approximately 20-30 MM BTU of waste heat and approximately 300-600 pounds of biochar per hour.

The facility is planned to operate 24/7, however given there will be maintenance requirements for the equipment it is anticipated that the gas production equipment and the GE Jenbacher internal combustion engine generator sets ("gensets") will likely only operate between 7,000 and 8,000 hours per year, or approximately 80-90% capacity.

II. Process Overview

Phoenix Energy system is the proposed vendor technology, or equivalent, which converts woody biomass into a synthesis gas ("syngas") through the process of thermo-chemical conversion. Essentially the process "bakes" the biomass in an oxygen-starved environment. By depriving the fuel of sufficient oxygen, the biomass does not convert to combustion products and pollutants, but rather gives off a hydrogen rich syngas. As the biomass gives off the syngas, it is transformed into biochar of approximately 6-9% of the weight of biomass fuel. The syngas is then captured, cleaned and conditioned before being sent as fuel to the genset to produce electricity. The gensets that have been selected for this project are two new *GE Jenbacher Model J-612* (see Internal Combustion Engine Supplemental Form in Appendix B). The process is summarized in Figure 1.

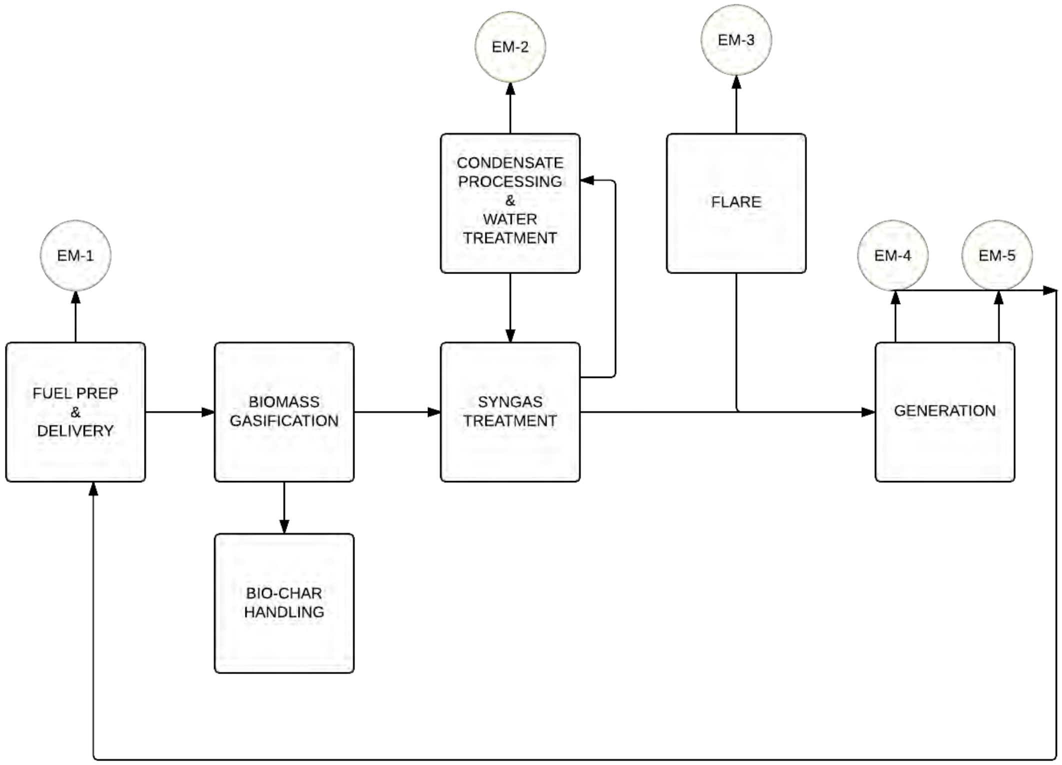


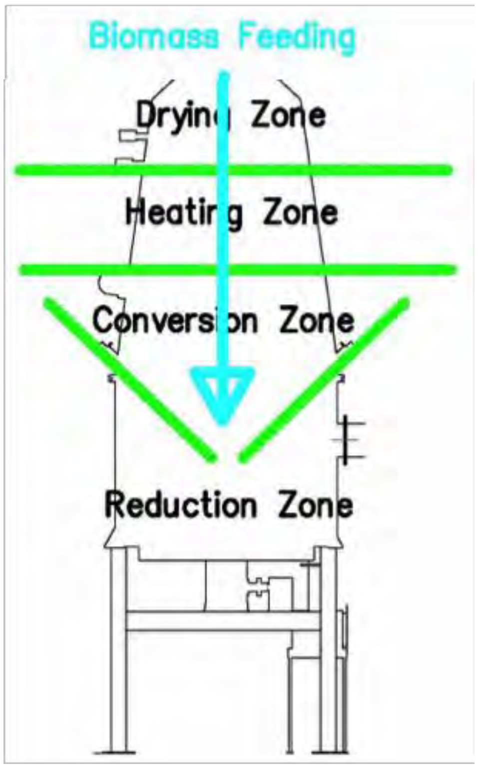
Figure 1: Tulare County 2MW Process Flow Diagram

Fuel Preparation and Delivery

Fuel will be procured in accordance with the fuel eligibility criteria for the BioMAT tariff under SB1122 for urban-sourced fuel, or through the Marin Clean Energy Program. Deliveries to the facility will be generate from on-site MSS wood recovery and processing activity.

As the source for the fuel is either recovered from urban sources or from the forest-source biomass material to mitigate forest fires. it is anticipated that the in-bound fuel will arrive and could contain up to 50% moisture. Depending on final equipment selection, it is anticipated drying this material to approximately 10% moisture content through the use of a rotary drum dryer with a cyclone that will be powered by the waste heat from the system.

Biomass Conversion



The biomass conversion chamber is essentially a chemical reactor where various complex thermo-chemical processes take place. As it flows through the reactor, the biomass gets dried, heated, converted into gas and reduced into bio-char.

Although there is a considerable overlap, each process can be considered to be occupying a separate zone, in which fundamentally different chemical and thermal reactions take place. The fuel must pass through all of these zones to be completely converted.

For this project, Phoenix Energy will utilize a downdraft gasifier. The essential characteristic of the downdraft design is that the tars given off in the heating zone are drawn through the conversion zone, where they will be broken down or oxidized. When this happens, the energy they contain is usefully recovered and the mixture of gases in the exit stream can be recovered for fuel use. The exit stream gas is moved through the gasifies to downstream treatment processes in an enclosed system and the only emission point for the gas stream prior to engine utilization is the emergency and maintenance process flare described as EM-3 in the process flow diagram (see Appendix D for the Flare Supplemental Form).

Bio-char handling

Biochar produced during this process is conveyed from the bottom of the gasifier in an enclosed water-cooled auger to a hopper from which it is packaged into 2 cubic yard supersacks.

Syngas Treatment

After the syngas has been extracted from the conversion chamber it is cleaned by a series of cyclones, scrubbers, and filters. First the gas passes through a series of scrubbers, which removes particulates and condensibles. Then the gas is passed through a series of filters to be conditioned for fuel use in the Jenbacher gensets.

Power Generation

Phoenix systems are based on a spark-ignited engine genset. In this case Phoenix will be using two new GE Jenbacher model J-612 that have been customized by the manufacturer for syngas fuel. The engines will be equipped with emissions control system to control air pollutants to meet SJVAPCD requirements. In case of engine shutdown or process upset, an emergency flare will be utilized for the syngas, until syngas generation is safely shutdown. Phoenix does not expect use of the flare to exceed 250 hours at 100% capacity. Phoenix Energy will provide standard paralleling switchgear for electrical output.

The two GE Jenbacher ICE gensets will meet Best Available Control Technology (BACT) per SJVAPCD District Guidelines. The flare will also meet SJVAPCD BACT.

Condensate Processing and Water Treatment

Water, which is entrained in the biomass fuel, is vaporized with the production of syngas. This water is then condensed out of the gas as it cools. This is very similar to the condensate found in natural gas or propane pipe and will contain trace amounts of hydrocarbons. Phoenix Energy and our technology partners utilize a suite of separation technologies including flocculation, settling, and other treatment, which will remove the majority of particulates and hydrocarbons in the water loop. This limits the need for make-up water in the systems cooling towers instead of solely utilizing fresh water for process needs. The water passed through the cooling tower will have trace amounts of hydrocarbons and as a result, the cooling tower will be a permitted emission point.

The cooling tower circulation rate will be between 200-300 m3/hr. The VOC emission rates are expected to be 0.27lbs/hr. (see emissions table below). VOC content in the circulation water is expected to be 0.39 lbs./hr. and an emission factor of 0.7 was utilized based on AP-42 guidelines for cooling tower emissions. The applicant cannot at the moment provide VOC analysis of the cooling tower water nor provide specificity regarding the VOC content in the cooling tower water.

A lengthy review of potential BACT for VOC emissions, not from leaks of VOC into the cooling water stream, indicated no existing BACT for such VOC emissions from the proposed projects process cooling water tower.

III. Emissions Source Summary

The applicant believes that the potential-to-emit equipment can be summarized as follows below for a 2 MW facility.

1) Fuel drying

2) Process Cooling Tower
3) Stand-by/shutdown flare
4) GE Jenbacher J-612 Engine #1
5) GE Jenbacher J-612 Engine #2

A summary table of emissions is presented below.

Emissions Calculations for MSS

	IC Engine		Cooling Tower		Flare		Feedstock Dryer		Total for 1 MW	**Total for 2 MW**	SJVAPCD CEQA Threshold	Major Source and ERC threshold
Pollutant	Emission Factor	Total Emissions	Emission Factor	Total Emissions	Emission Factor	Total Emissions	Emission Factor	Total Emissions				
	(lb/hr)	TPY	(lb/hr)	TPY	(lb/hr)	TPY	(lb/hr)	TPY	TPY	TPY	TPY	TPY
VOC	0.364	1.59	0.27	1.18	0.74	0.09	0.11	0.49	3.36	**6.73**	10	10
NOx	0.38	1.66	N/A	-	0.80	0.10	N/A	-	1.76	**3.53**	10	10
CO	2.56	11.21	N/A	-	4.37	0.55	N/A	-	11.76	**23.52**	100	100
PM10	0.1	0.44	ND	-	0.09	0.01	0.31	1.36	1.81	**3.61**	15	15
SOx	0.03	0.00	N/A	-	N/A	-	N/A		0.00	**0.00**	27	27

ND = not determined N/A = not applicable

Emissions above based on following operating hours

	IC Engine	Cooling Tower	Flare	Feedstock Dryer
Operating hours per year	8760	8760	500	8760
Capacity factor	100%	100%	N/A	100%

Notes on emission factors

- IC Engine emission factors from Manufacturer's specifications w/SCR control device. SOx emission factor from SJVAPCD ATC No. N-8071-1-0 and N-8071-2-0
- Cooling tower VOC emissions factor calculated by applicant
- Dryer VOC emissions calculated per 12/11/84 source test at Sierra Pacific Industries lumber mill in Lincoln, CA
- Dryer PM emission factor from AP-42 Table 10.6.2-1
- Flare emission factors from SJVAPCD ATC No. N-8071-1-0 and N-8071-2-0
- Cooling tower PM emissions subject to SJVAPCD Guideline 8.3.10

Attachment B

Project Description – Composting Facility

PROJECT DESCRIPTION

March 23, 2020

1. **Project Title:** Visalia Landfill – Compost Facility

2. **Lead Agency:** County of Tulare – Resource Management Agency

3. **Contact Person:** Hector Guerra, Chief Environmental Planner

4. **Project Location:** Northeast comer of Road 80 and Avenue 328 – Approximately 6 miles northwest of the City of Visalia.

5. **Latitude, Longitude:** SEC. 4, T 18 S. R 24 E MDB & M

6. **General Plan Designation:** Agriculture

7. **Zoning:** The landfill property, contiguous parcels, and the surrounding area are designated by the Tulare County Zoning Ordinance No. 352 as AE-40, Exclusive Agriculture Zoned.

8. **Description of Project (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.):** The County intends to develop and operate a covered aerated static pile (CASP) compost facility to comply with the upcoming SB 1383 regulations. The compost facility will be located on the County's Visalia Landfill property that encompasses approximately 634 acres, of which the compost facility will occupy 36 acres, located in a soil borrow recessed approximately 20 feet below grade. The compost facility will be designed to accept up to 200,000 tons per year (TPY) in increments of 50,000 TPY technology modules and can store up to 200,000 cubic yards on-site of organic material that would have otherwise been landfilled. The compost facility would include installing processing and composting equipment, a 50,000 square foot processing building, compacted compost pads, and a lined pond. See Sheets 1 and 2 (attached) for site plans illustrating the facility's location and features.

9. **Surrounding land uses and setting (Brief description):** Land uses surrounding the site are characterized by intensive agricultural operations. Tree crops are to the north of the landfill property, while row crops are immediately to the east and south. A dairy is located to the west.

10. **Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):**

    - Tulare County Health and Human Services Agency, Environmental Health
    - CalRecycle

- San Joaquin Valley Air Pollution Control District (SJVAPCD)
- California Regional Water Quality Control Board, Central Valley Region

In addition to applying to the Tulare County Resources Management Agency for a Conditional Use Permit (CUP), regulatory oversight of compost facilities is provided by CalRecycle [formerly the California Integrated Waste Management Board (CIWMB)] and the Local Enforcement Agency (LEA), Tulare County Environmental Health Department. The project would also be subject to SJVAPCD requirements.

CalRecycle requires that the project applicant meet design, operation, record keeping, environmental health standards, and employee training requirements for a Compostable Materials Handling Facility, apply for and maintain permit conditions, and be inspected at least monthly. A “Compostable Materials Handling Operation” is defined in Title 14 of the California Code of Regulations (14 CCR), section 17852, as follows:

> (a)(12) “Compostable Materials Handling Operation” or “Facility” means an operation or facility that processes, transfers, or stores compostable material. Handling of compostable materials results in controlled biological decomposition. Handling includes composting, screening, chipping and grinding, and storage activities related to the production of compost, compost feedstocks, and chipped and ground materials. “Compostable Materials Handling Operation or Facility” also includes:
>
> (A) agricultural material composting operations;
> (B) green material composting operations and facilities;
> (C) research composting operations; and
> (D) chipping and grinding operations and facilities.

Site improvements will be required by the State Water Resources Control Board (SWRCB) as part of the approval process for this project. The facility currently has a site-specific permit, called Waste Discharge Requirements (WDRs), to water quality for the disposal operations. The permit would need to be revised to reflect operational changes associated with this project and additional regulatory requirements imposed by the SWRCB. Alternatively, the facility may be put under the General Waste Discharge Requirements for Composting Operations (General Order) instead of revised site-specific WDRs. Site improvements include constructing a new lined detention pond, as well as making additional onsite drainage improvements to continue to direct stormwater and process water runoff into these detention pond(s), and improvements to working surfaces such as paving active composting and/or processing areas or compacting the soil to meet the SWRCB’s specifications.

11. **Compliance with Organic Waste Laws – Unfunded State Mandates:** AB 1826 (Chesbro, 2014) phased in mandatory commercial organic waste collection to 2020 following AB 341 (Chesbro, 2011) for mandatory commercial recycling collection; and

SB 1383 (Lara, 2016) requires generators with local government and the local haulers within a shared responsibility framework to reduce 50% of all organics by 2020 and to reduce 75% of all organics by 2025 to mitigate methane. AB 876 (McCarty, 2015) requires the County to identify organic processing capacity to 2035 in their Annual Report, where all jurisdictions need to describe the progress made on AB 1826 in their Annual Report. AB 341 and AB 1826 placed the burden of mandatory collection on the generators with a local government planning effort. SB 1383 explicitly shares the responsibility with local government, where CalRecycle may add fines and penalties much like AB 939 (Sher, 1989), but with delayed enforcement until 2024. SB 1383 requires CalRecycle, in consultation with the California Air Resources Board (CARB), to adopt regulations that achieve the specified targets for reducing organic waste in landfills. SB 1383 regulations are slated for approval by CalRecycle in December 2019, becoming effective in 2022. SB 1383 would authorize local jurisdictions to charge and collect fees to recover the local jurisdiction's costs incurred in complying with the regulations.

The total targeted tons for reducing 50% of all organic waste by 2022 and 75% of all organic waste by 2025 for SB 1383 compliance is calculated based on current disposal, using 2014 waste characterization and tonnage amounts as the baseline. A statewide fair-share model has been calculated and is provided in Table 1. Population growth following the California Department of Finance projections is factored in from 2014 to 2035.

Table 1: New Tons Organics Diversion

	2022 50% Reduction	2025 75% Reduction	2030 75% reduction	2035 75% reduction
Food Waste Diversion	69,397	84,652	92,663	100,675
Green Waste Diversion	22,311	27,216	29,791	32,367
Wood Waste Diversion	29,686	36,211	39,638	43,066
Compostable Paper Diversion	16,010	19,529	21,378	23,226
TOTAL:	**137,405**	**167,608**	**183,471**	**199,334**

In addition, to satisfy the jurisdiction's requirements under AB 876, the amount of organic waste that is generated up to 2035 was determined. This identifies 15 years of organic waste processing capacity using the CalRecycle Disposal Reporting System and Waste Characterization Studies. Based on the existing permits from CalRecycle's SWIS database, currently there is a maximum of 120,375 tons of identified organics processing capacity in Tulare County using current tons being diverted, mostly green waste and wood waste. This capacity would serve Tulare County's immediate need for 2020's requirements, but would need to expand by 2022 to accommodate the new tons diverted when the SB 1383 regulations become effective. Tulare County needs a minimum of 137,000 tons of new capacity in 2022, 167,000 tons of new capacity in 2025, and up to 200,000 tons of new capacity by 2035.

12. Project Objectives: The following are the objectives of the proposed project:

- Provide compost capacity for a transformative organics diversion program in California as required by California legislation;
- Reduce methane emissions from landfills by removing organics from landfills and by composting new feedstocks and reducing greenhouse gasses (GHG) by sequestering nutrient rich compost in soils;
- Modify an existing, strategically integrated waste management facility (Visalia Landfill) to accommodate the growing regulatory demand for mixed materials, organic waste, and food waste composting;
- Receive and compost food wastes derived from commercial and residential sources, increase diversion of organic materials from landfills by expanding the approved feedstock list to include digestates that can be received and processed;
- List the organics waste feedstocks for the facility, using terms and definitions consistent with new State composting regulations (14 CCR) and the adopted SB 1383 regulations;
- Allow pre-processing food waste operations at the facility;
- Continue to provide economic benefits to Tulare County through employment of local residents, by the expansion of operational solid waste management activities and construction of new processing equipment;
- Compliance with SJVAPCD rules and regulations;
- Facilitate the accomplishment of AB 341, which directs CalRecycle to increase statewide diversion from landfills to 75% by 2020;
- Enhance the business community's ability to comply with AB 1826, which as of April 1, 2016 requires businesses that generate a specific amount of organic waste per week must arrange for recycling services for that organic waste in a specified manner (such as composting), to substantially reduce landfill disposal of food wastes; and
- Create water saving opportunities by using compost to enhance agricultural soil.

13. Site Preparation: The 36-acre proposed site would be located in a soil borrow pit and would be designed to accommodate up to 200,000 tons per year that can be built in phases of 50,000 tons per year in a modular units, using CASP technology, recessed approximately 20 feet below grade and is currently vacant, graded, and would not need to be cleared and grubbed for the proposed compost facility. Construction at the site would last approximately five to six months for Phase 1, a 100,000 TPY CASP module, and would include installing processing and composting equipment, a 50,000 square foot processing building, a 10-acre concrete compost pad, and a 35.9 acre-foot (AF) lined pond to collect contact water.

Temporary construction equipment would include a grader, tractor, loader, backhoe, and rubber-tired bulldozer. The existing access to the landfill would be utilized to gain access to the compost facility. Typical operations and site equipment are described in the Operational Plan.

Site improvements would be required by the SWRCB as part of the approval process for this project. The landfill property currently has a site-specific WDR permit for water quality protection. This permit would need to be revised to reflect operational changes associated with the proposed compost facility and additional regulatory requirements imposed by the SWRCB for compacted compost pads and lined wastewater storage ponds. Alternatively, the compost facility may be placed under the General Order instead of revised site-specific WDRs. Regardless, site improvements include constructing a new lined wastewater storage pond, as well as making additional on-site drainage improvements to continue to direct stormwater and process water runoff into these detention pond(s), and improvements to working surfaces such as paving active composting and/or processing areas or amending/compacting the soil to meet the SWRCB's specifications.

14. Utilities: Utilities would be limited to those currently serving the project area, as follows:

- ***Water Supply:*** Two existing wells are available on the landfill property for water supply (see Sheet 1). The "Cotton Gin Well" is located in the south-central portion of the property and has a well yield ranging from approximately 400 to 900 gallons per minute (GPM). This well is currently used for the landfill operations. The average daily water use for the landfill operations is approximately 118,000 gallons per day (GPD). As for the composting operations, the typical summer day for an average 400 tons per day (TPD) CASP compost facility, or 100,000 TPY, is 168 TPD of water or 40,000 GPD or 56 GPM for 12 hours pumping per day, or 10 trips per day for a 4,000 gallon water truck. The typical summer day for an average 800 TPD CASP compost facility, or 200,000 TPY, is 336 TPD of water or 80,000 GPD or 112 GPM for 12 hours pumping per day or 20 trips per day for a 4,000 gallon water truck. These usages equate to an average daily demand for both the landfill operations and compost facility of approximately 158,000 to 198,000 GPD. The Cotton Gin Well's 400 to 900 GPM yield is sufficient to accommodate this demand.

  The second on-site well ("Northeast Well") is located in the northeast corner of the property and is currently used for contingency purposes only. No information is currently available with regard to its well yield characteristics. However, based on the local hydrogeologic depositional environment, it is reasonable to conclude that its yield is likely on the order of several hundred GPM, which would be sufficient to service the composting operations.

A 60,000-gallon dedicated water tank for fire control purposes will be located within the compost facility operating area.

- ***Sewer Service:*** There is no public wastewater service or septic system on the compost site or planned for development. Portable toilet facilities would be provided for employees. The employees would have access to the landfill facilities' gate for access.
- ***Electrical Service:*** Service would be extended to the site and an electrical utility pole would be constructed on-site to provide power to run compost equipment, processing equipment, blowers, and an electric grinder.
- ***Solid Waste Service:*** Residual waste from contamination that is delivered with the organic waste would be containerized on-site for up for 48 hours prior to disposal at the landfill.
- ***Site Access, Circulation and Fire Safety:*** The compost project site would be accessed from Avenue 328 via an entry roadway that services the landfill. There would be no increase in the current tons traffic permit limits stated in the Solid Waste Facility Permit for the landfill, as the current green waste and wood waste is being diverted now, and the new organic wastes tons would be diverted directly to the compost facility instead of to the landfill. A 20-foot-wide perimeter fire lane would surround the site. An additional 20-foot fire lane would be placed between the phased composting areas and distinct operational areas.

The proposed Project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system nor would it conflict with an applicable congestion management program. The development of the compost facility would not result in an increase in population nor corresponding to an increase in vehicle travel; therefore new or modified intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit would not be required.

Fire protection services to the compost project site would be provided by the Tulare County Fire Department substation (south of the city of Dinuba), which is approximately 6 miles north of the site. The project may be required to meet access and other fire safety standards established by the Tulare County Fire Department. The project as designed would comply with the following California Fire Code (CFC) requirements:

- Pile sizes shall not exceed 25 feet in height, 150 feet in width and 250 feet in length. (2803.3 CFC)
- Piles shall be separated from adjacent piles by approved fire apparatus access roads. (1908.4 CFC). The project's fire lanes are designed to be 20 feet wide.
- Static piles shall be monitored by an approved means to measure temperature within the static piles. Internal pile temperatures shall be monitored and recorded weekly. (2808.6 CFC)
- Fire extinguishers with a minimum rating of 4A 60B: C shall be provided on all vehicles, equipment operating on the piles, and at all processing equipment. (2808.8 CFC)

- All access routes shall be all-weather and certified by an engineer that they will support the load of a 75,000 lb. piece of apparatus. (D102.1, Appendix-D CFC)
- The facility shall maintain a dedicated water tank with appropriate hook-ups for firefighting purposes capable of delivery at least 500 GPM at 20 psi for 2 hours. The water tank shall be maintained in ready state and shall remain unobstructed at all times.
- The storage, accumulation, and handling of combustible materials and control of vegetation shall comply with Chapter 3 of the fire code.

OPERATIONAL PLAN

The following operational procedures are planned for project operation for the proposed compost facility to comply with environmental permits and other regulatory requirements. Phase 1 would include construction of the compost pad for a 100,000 TPY CASP Module with a seasonal peak flow of 500 TPD and the 50,000 square-foot processing building, develop the rest of the site to receive and process materials, cure and store the finished compost, and install the lined pond. Phase 2 would add another 50,000 TPY compost pad and CASP module and Phase 3 would add the final compost pad and CASP module, bringing the total compost facility capacity to 200,000 TPY. Upon final build out, the average and seasonal peak flows would be 650 and 850 TPD, respectively.

Organic Waste and Material Types

The proposed project would authorize the composting facility to accept organic waste and materials types of 'mixed materials' consistent with the new regulations (AB 1826 and SB 1383), which have changed the requirements for disposal of organic waste as well as expanding the list of organic wastes that can be accepted at a Compostable Materials Handling Facility. The additional types of 'mixed materials' and organic wastes would include all types of food material (including post-consumer food waste, food-soiled paper, compostable plastics), and digestate consistent with current regulations. Based on this, the CUP would list acceptable materials that can be received by the composting facility and includes (see definitions in Appendix A):

- 'Mixed Materials' pursuant to 14 CCR
- 'Food Material' pursuant to 14 CCR; and
- 'Organic Wastes' pursuant to SB 1383 regulations.

The landfill currently accepts construction and demolition debris, green waste, wood waste, and agricultural waste for diversion operations, as well as municipal solid waste for landfill disposal. The landfill currently disposes of the organic waste within the municipal solid waste stream, which instead would be diverted from the landfill to the compost facility.

Composting is the biological decomposition of organic material under aerobic conditions (i.e., in the presence of oxygen). Composting is a self-limiting biological process. Conditions that limit the microbial population include: nutrient availability, temperature, aeration, moisture content, and pH. The composting process requires that microorganisms be supplied with the primary nutrients carbon and nitrogen. Carbon to nitrogen ratios (C/N), which range from 20:1 to 30:1, are considered optimal for microorganisms. The more the C/N ratio deviates from this range, the slower the decomposition process becomes. With a ratio greater than 40:1, nitrogen represents a limiting factor and the reaction rate slows. With a C/N ratio lower than 15:1, excess nitrogen is driven off as ammonia. While this loss of nitrogen is not detrimental to the decomposition process, it does lower the nutrient value of the compost product.

CASP technology can be permitted to receive a variety of composting feedstocks including all types of compostable organic wastes, green wastes, food wastes, and clean wood wastes. Many compost facilities receive feedstocks that are predominately composed of tree prunings, leaves, grass clippings, and contain a small percentage of food waste. Leaves generally have a high C/N ratio. Lawn clippings lack structure to maintain porosity for aeration but have a favorable C/N ratio and moisture content for composting, as does food waste. The CASP compost ‘recipe’ would vary over time as the participation in residential food waste collection programs increases over time, along with SB 1383 commercial organic wastes, however the recipe would be a balanced C/N ratio and would yield an excellent finished compost product.

The proposed project would be authorized to receive and handle any ‘compostable material’ or ‘digestate’ as authorized under current regulations. Some organic material may be delivered pre-processed and feedstock-ready from local material recovery facilities and may be deposited directly into the CASP unit without further processing. The following definitions are consistent with current and future state regulations as administered by CalRecycle and SWRCB, as defined in 14 CCR and SB 1383. Any feedstocks approved to be processed at the facility would comply with all applicable regulations. *Table 2: Feedstock Definitions for Feedstocks to Be Accepted under the Project,* as presented on the following page, provides a description of the feedstocks the composting facility would use.

Under the proposed project, the composting facility would obtain a Solid Waste Facility Permit where the following types of wastes would be prohibited at the compost facility:

- Hazardous, radioactive, designated, and medical wastes;
- Dead animals, septage, ash, painted or treated wood;
- Mixed (municipal) solid waste and mixed construction and demolition materials;
- Burning material;
- Manure from known infected herds or sources as monitored and reported by the California Department of Food and Agriculture (CDFA); and
- Biosolids or any type of sewage sludge.

Hours of Operations

The hours of operations for receiving waste material will harmonize with the landfill with the following hours of operations:

Monday – Friday	7:00 am to 4:00 pm
Saturday	8:00 am to 4:00 pm

The hours of operations of processing material will be 24 hours per day, 7 days per week. The waste material received in the processing building may be processed 24 hours per day to accommodate surge piles and process within a 48-hour holding time period from the time of receipt. The CASP piles will be provided moisture control and oxygen via the fans that are controlled electronically on a timer throughout the 24 hour day. CASP piles may be processed throughout the day to accommodate wind patterns that could limit processing during the calmer portions of the day.

Materials and Receiving

The facility would be designed to process organic waste that would be considered new tons to comply with SB 1383, as well as current tons that may be recycled on-site or at other at other facilities in the County. The organic waste would be delivered to the proposed compost facility by collection vehicles, transfer trailers and self-haul vehicles. Wood waste would be stored outdoors for up to 30 days in a designated area. Green waste would be stored outdoors for up to 7 days in a designated area. Co-collected residential organic wastes would be stored outdoors for up to 48 hours. Commercial organic waste would be delivered into the proposed processing building.

Pre-Processing Operations

Though education and awareness with monitoring and reporting, the County would work with the cities and their haulers to minimize contamination placed in the organic waste carts and bins. Once received the organic waste would be load-checked for non-compatible wastes and contamination, which would be removed by manual floor sort for outdoor operations or mechanical processing equipment within the processing building. The project allows for pre-processed feedstock-ready material to be placed directly into the CASP unit.

The equipment would be used for material handling, size reduction and residual/contamination removal (such as film plastic) from the materials, wastes, and finish compost. Non-compostable residual material would be sorted and containerized on-site and transported for disposal at the landfill within 48 hours of being generated.

The proposed equipment support the processes as follows with a list provided in Table 4:

1. Pre-processing to support receipt of green materials;
2. Pre-processing to support receipt of food material, mixed material, and organic waste;
3. Post-processing to size and classify compost; and
4. On-site conveyance connecting process areas to transport material.

Under existing conditions, the landfill currently accepts construction and demolition debris, green waste, and wood waste and agricultural waste for diversion operations. These material would continue to be received and processed, where recovered green waste and wood waste would be added into the composting facility.

Table 2: Feedstock Definitions for Feedstocks to be Accepted under the Project	
Feedstocks	***Description***
Agricultural Materials	Waste material of plant or animal origin, which results directly from the conduct of agriculture, animal husbandry, horticulture, aquaculture, silviculture, vermiculture, viticulture and similar activities undertaken for the production of food or fiber for human or animal consumption or use, which is separated at the point of generation, and which contains no other solid waste. With the exception of grape pomace or material generated during nut or grain hulling, shelling, and processing, agricultural material has not been processed except at its point of generation and has not been processed in a way that alters its essential character as a waste resulting from the production of food or fiber for human or animal consumption or use. Material that is defined in this Section 17852 as "food material" or "vegetative food material" is not agricultural material. Agricultural material includes, but is not limited to, manures, orchard and vineyard prunings, grape pumice, and crop residues. (14 CCR §17852)
Food Material	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. (14 CCR §17852)
Digestate	Organic by-product (solid or liquid) of anaerobic digestion process.
Green Material	Any plant material except food material and vegetative food material that is separated at the point of generation, contains no greater than 1.0% of physical contaminants by dry weight, and meets the requirements of section 17868.5. Green material includes, but is not limited to tree and 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. Agricultural material, as defined in this section 17852(a) (5), that meets this definition of "green material" may be handled as either agricultural material or green material. (14 CCR §17852)
Mixed Material	Any compostable material that is part of the municipal solid waste stream, and is mixed with or contains non-organics, processed industrial materials, mixed demolition or mixed construction debris, or plastics. A feedstock that is not source separated or contains 1.0% or more of physical contaminants by dry weight is mixed material (14 CCR § 17852).
Organic Wastes	Solid wastes containing material originated from living organisms and their metabolic waste products, including but not limited to food waste, green waste material, landscape and pruning waste, applicable organic textiles and carpets, wood, lumber, fiber, paper products, printing and writing paper, manure, biosolids, digestate, and sludges. (SB 1383 or as may be amended).
Pre-processed feedstock-ready CASP materials	Some organic material may be delivered pre-processed and feedstock-ready from local material recovery facilities and may be deposited directly into the covered aerated static pile (CASP) unit without further processing.

In preparation for the active composting phase, feedstock materials are pre-processed by grinding. Grinding of the feedstock reduces the volume of material, increases the surface area to promote biological decomposition, and provides a relatively uniform mixture of material and particle size. Feedstock may consist of any organic materials including green waste, clean dimensional lumber, agricultural materials (such as grape pomace), and food wastes. The amounts of these materials which makeup the feedstock ‘recipe’ are critical for both C/N ratio and most importantly bulk density. Green waste materials, with small percentages of food waste introduced to the mixture are ideal for the CASP technology, based on experience with the materials generated in the region. High percentages of food waste or other similar high-density feedstocks of the total recipe may lead to a feedstock that is too dense and does not allow for proper airflow through the CASP. Bulking materials, such as compost overs or wood waste can be added to increase the bulk density as required, however these materials also reduce the amount of capacity available for new inbound feedstocks. A typical recipe for CASP compost systems can vary from 10% to 25% food material to green and wood materials.

Grinding Pre-Processing Operations

The existing CUP for the landfill property allows for reception and storage of green waste and wood waste and the grinding process, which would be re-located from the current location near the landfill to the compost operations. This project would allow these wastes to continue to be ground; and will allow further processing through a screen or similar equipment to further size separate and be blended with processed food waste in ratio of 10% to 25% food material to green and wood materials and be placed in the CASP unit for composting. Additional equipment, such as a grinder, conveyors, and shaker deck, would be installed on the project site to complete these process operations.

The co-collection of green waste with food material from residential sources (co-collected residential organics) is an emerging trend in California to meet SB 1383 objectives. The amount of residential food material varies from 3% to 7%, with seasonal peaks up to 10%, of the green waste volume, based on seasonal factors and special holiday events. The co-collected residential organics would be delivered to the site by local collection vehicles or from transfer trailers and would be received and processed outdoors in the tipping area and not within the processing building, unless later specified as part of an enhanced odor mitigation plan. A site-specific Odor Impact Minimization Plan will be prepared, which includes multiple design and operational measures to reduce odors, including an outdoor storage time limit of 48 hours for un-processed co-collected materials.

The outdoor organic waste processing area would have a capacity to store up to 10,000 cubic yards of received green waste and co-collected waste. Two stockpiles would be separated by fire lanes consistent with applicable fire district standards of 20 feet. The co-collected residential organics would be stockpiled on a pad for a maximum period of 48 hours and green waste and wood waste could be stored for up to 30 days. Chipping and grinding would generally occur on the day of receipt from co-collected residential organics, and up for 7 days for green waste. The processed co-collected organics material storage area would be constructed with a compacted all-weather pad equipped with a gravity drain to the lined wastewater storage pond.

Food Waste Pre-Processing

Adding pre-processing lines and processing equipment within the processing building could allow for adequate upfront processing of unprocessed material before beginning the composting process. The project would allow for reception and pre-processing of commercial organic waste and food material/mixed material pre-processing at the facility. Statistics on the comingled commercial loads materials indicate loads have an average of approximately 30% by-weight non-compostable contamination rate, even when the best management practices are followed at the source. Transfer trailers, collection trucks, or end dump vehicles would transport unprocessed commercial organic waste to the project site where it would weigh in across certified scales. The truck would travel to a dedicated receiving and storage area within a designated bunker, within the processing building, where the material would be offloaded. Vectors would be controlled by good housekeeping practices within the enclosed building.

The project proposes to utilize state-of-the-art extruder-type food processing technology to pre-process commercial organic waste. Materials and organic waste would be loaded from the bunker, with a front-end loader, into an infeed bin to be mechanically separated from the residual waste. The resulting food waste, targeting less than 1% contamination by weight, would be blended with green waste either within the building or within the CASP unit. This material would be mixed with green waste and/or bulking agent into a compost feedstock unit with blends of 10% to 25% food material to green material.

Covered Aerated Static Pile (CASP) Technology

CASP technology is superior to traditional composting methods, such as windrows because air is mechanically added to the piles as needed, based on continuous temperature monitoring, and a biological ‘cap’ or ‘cover’ of compost is placed over the pile to significantly reduce the uncontrolled emissions. The proposed CASP composting process consists of multiple phases, with primary and secondary operations, with both positive and/or negative air. Integral to the CASP operations is feedstock receiving and pre-processing as previously described, active composting with aeration, curing, screening and storing finished compost prior to sale. There are approximately 36 acres available at the facility for composting activities. The active composting area would feature a 10-acre paved pad. Once active composting is complete, the materials are then moved to a curing area, then to final screening and finishing at the compost storage until products are sold.

Aeration System

The proposed CASP technology has been determined to be the best available control technology (BACT) by the SJVAPCD. The CASP system includes infrastructure to push air flow into the compost material (‘positive aeration’) and/or pull air flow from the compost material (‘negative aeration') during the active compost phase, which may include both primary and secondary batch systems. The positive air heats up the composting process as needed and the negative air better controls odors and emissions during the active compost process.

An active aeration system, which can help provide more ideal conditions for the composting process, is expected—on a per ton of compost basis—to reduce system footprint and retention time for composting, reduce movement of material once on-site and the amount of off-road equipment needed compared to traditional windrow composting, and reduces odor and volatile organic compound (VOC) emissions. The system would be designed to satisfy the requirements of the SJVAPCD Rule 4566, which regulates organic material composting operations.

As described above, the aeration system would utilize either positive and/or negative pressure. An active aeration system that utilizes positive airflow utilizes a biocover. An active aeration system that utilizes negative airflow utilizes a biofilter (i.e., separate pile consisting of finished compost overs and/or wood chips). A push/pull system can switch between positive and negative air flow and would therefore utilize both a biocover and a biofilter. The CASP composting system would still use wet suppression/water sprays to help reduce fugitive dust during material receiving/mixing, active and curing phase composting, and finished compost storage and loadout.

Temperature & Moisture Control

The composting process produces heat as a result of bacteriological metabolism. Initially, the heat generated by mesophilic bacteria elevates the temperature to about 50°C (122°F) or more. As the mesophilic bacteria population decreases due to the high temperature, thermophilic bacteria take over and elevate the temperature up to 60°C (140°F) or more. Over time and under the proper environmental conditions (i.e., the presence of oxygen, water, and nutrients), the microorganisms are self-limiting and the temperature stabilizes at between 55°C (131°F) and 75°C (167°F).

Temperatures would be monitored to ensure that the prescribed regulatory period of 72 consecutive hours at no less than 55°C (131°F) are met for the Process to Further Reduce Pathogens (PFRP). Maintaining the proper moisture content for a composting pile is also important; for the composting operations, the optimum water content lies around 50%. If the pile is too dry, the microbes go dormant; therefore, moisture is added to the feedstock prior to inclusion into the CASP operation in order to maintain the proper water content. If the pile is too wet, saturated conditions can cause the pile to become anaerobic due to lack of oxygen circulation. The optimum pH for composting is between 6.0 and 7.5 (near neutral).

Composting

Following grinding, pre-processing and blending or receipt of feedstock-ready materials, the materials would be placed in static piles not exceeding 250 feet long by 100 feet wide and approximately 10 feet in height within the primary CASP unit as to meet Fire Code standards. The piles would be constructed using a loader to stack the material. Underlying the piles are perforated pipes (up to 32 pipes and 8 blowers per CASP unit, or fan group), which may be embedded in the concrete below or may be flexible pipes placed on grade within each static pile, which provide positive aeration to the bottom of the piles from adjacent air handling units or 'blowers' as part of the initial phases to heat up the mass. After the piles are constructed, they are covered with a minimum of 12 inches of compost material, which acts as a biofilter which reduces harmful emissions and potential odors. The compost cover itself is moisture conditioned through the active composting phase as needed to maintain its effectiveness in controlling emissions and odors.

The CASP aeration process is highly automated and controlled. The composting piles are instrumented with wireless automated temperature probes for ongoing temperature monitoring throughout the active composting process. Based on monitoring and operational protocol, the aeration system is activated to induce airflows through the CASP. The aeration timing and flow rates are varied as needed to optimize the composting process and minimize odors. A push/pull system can then switch from positive to negative air flow and would therefore utilize a biofilter to control emissions and minimize odors.

Composting piles remain on the primary CASP unit for 24 days prior to being moved by a bucket loader or conveyance system to the secondary CASP unit for another 24 days, with some variation in composting time depending on feedstock composition, temperature, moisture, season of the year, and stability of the compost at the end of the active phase. The secondary CASP serves to ensure that adequate decomposition is attained in the event uniform composting was not achieved during the primary CASP phase. After secondary CASP, the material is moved to the curing pad to mature.

The project may consist of negative air, positive air, or a reversing air scenarios design that will be analyzed as part of the California Environmental Quality Act (CEQA) process. There are excepted VOC emission factors (EF) associated with the aeration type, as noted in Table 3 below. Plus there are several aeration floor models that could be pipe-on-grade with a static pile placed on top, or an in-floor Trench or Sparger system within concrete bunkers with variable sized biofilters as shown in Table 3 below.

Curing

When the active composting phase is complete, the curing phase begins. The composting piles are dismantled and hauled to the curing area. Curing allows the compost material to mature and is essential in the development of a high-quality product. Curing piles are constructed with front loaders and are approximately 20 feet wide, 250 feet long and 15 feet high. Material placed in the curing area will typically cure for 3 months or more. Moisture may also be added to the curing windrows as needed to maintain suitable curing conditions and control dust. After the curing process, the composted materials are screened based on customer demand, but typically to 3/8-inch and smaller, to remove oversize particles and contaminants (plastic, glass, etc.) and provide a final compost product specific for its end use.

Table 3: Aeration Type and Floor Type in relation to Emission factors sizing of Biofilters					
Annual Tonnage	**Expected VOC EF, ln/tons**	**Aeration Type**	**Working Surface/ Walls**	**Aeration Floor Type**	**Mass-Bed CASP & Biofilter Area (ft2) for 24-day retention**
50,000	.004 - .05	Negative	Compacted earth/ Block	Pipe-on-grade	60,000
50,000	.004 - .05	Negative	New concrete/ Cast	In-floor LF Trench	41,000
50,000	.004 - .5	Reversing	New concrete/ Cast	In-floor LF Trench	40,000
50,000	.5 - 1.5	Positive	Compacted earth/ Block	Pipe-on-grade	55,000
50,000	.5 - 1.5	Positive	New concrete/ Cast	In-floor Sparger	36,000
100,000	.004 - .05	Negative	Compacted earth/ Block	Pipe-on-grade	90,000
100,000	.004 - .05	Negative	New concrete/ Cast	In-floor LF Trench	71,000
100,000	.004 - .5	Reversing	New concrete/ Cast	In-floor LF Trench	68,000
100,000	.5 - 1.5	Positive	Compacted earth/ Block	Pipe-on-grade	81,000
100,000	.5 - 1.5	Positive	New concrete/ Cast	In-floor Sparger	62,000

Screening

Through this process an over-sized finished compost (>3/8-inch typically) is also produced through the screening effort. This material is typically referred to as ‘overs’ and they generally consist of composted pieces of woody material. There are many uses for ‘overs’ such as composted mulch, biofilter media, erosion control, compost bulking agent, and soil amendment, but due to the rather low nitrogen content and size of this material the value tends to be significantly less than the unders fraction. In addition, film plastic contaminants are a common problem in composting residential wastes and film plastics tend to be concentrated into the overs fraction of the finished compost process. Because of this contamination some end uses may be limited with regard to overs. Eventually, through additional processing and screening, contamination of overs may become so high that landfill alternative daily cover (ADC) will count as disposal starting 2020. Overs are not generally considered a residual; they are a valuable part of the finished compost. But depending on inbound feedstock contamination and the natural process of concentrating film plastics into the overs fraction through screening a portion of overs will generally end up as landfill ADC due to this contamination.

Equipment List

Table 4 provides a summary of the equipment proposed for the facility.

Table 4: Equipment Proposed for Compost Facility

Equipment	**Process Used In**	**Power Source**
Fuel Truck	Refueling Equipment (Off-road and On-Road Equipment)	Diesel
2 Tractors	Material Transfer (Off-road Equipment)	Diesel
Excavator	Material Transfer (Off-road Equipment)	Diesel
6 Loaders	Material Transfer (Off-road Equipment)	Diesel
Office Vehicle	Composting Process (Off-road Equipment)	Diesel
Sweeper Truck	Composting Process (Off-road Equipment)	Diesel
2 Water Trucks	Composting Process (Off-road Equipment)	Diesel
Shop Truck	Composting Process (Off-road Equipment)	Diesel
2 Grinders	Feedstock Products (Mulching)	Electric
2 Conveyors	Feedstock Products (Mulching)	Electric
Pre-Processing Line Shredders/Grinders	Compost Processing (Feedstock Pre-processing line)	Electric
Pre-Processing Line Conveyors	Compost Processing (Feedstock Pre-processing line)	Electric
Food Waste Processing Equipment	Depackage and remove contaminates to produce slurry feedstock	Electric
2 Processing Trommel	Compost Processing (Finished Processing	Electric
1 Film Plastic Separator	Compost Processing (Finished Processing line)	Electric
Processing Line Sizing Screen	Compost Processing (Finished Processing line)	Electric
Processing Line Conveyors	Compost Processing (Finished Processing line)	Electric
Shop Truck	Composting Process (Off-road Equipment)	Diesel
2 Processing Trommel	Compost Processing (Finished Processing line)	Electric
1 Film Plastic Separator	Compost Processing (Finished Processing line)	Electric
Processing Line Sizing Screen	Compost Processing (Finished Processing	Electric
Processing Line Sizing Screen	Compost Processing (Finished Processing	Electric

Air Quality Permitting for Compost Facilities

The SJVAPCD has primary responsibility for regulating stationary sources of air pollution situated within its jurisdictional boundaries. To this end, the SJVAPCD implements air quality programs required by State and federal mandates, enforces rules and regulations based on air pollution laws, and educates businesses and residents about their role in protecting air quality. The SJVAPCD is also responsible for managing and permitting existing, new, and modified sources of air emissions within the Tulare County portion of San Joaquin Valley Air Basin.

In 1998, SJVAPCD adopted its Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) to provide lead agencies, consultants, and project applicants with uniform procedures for addressing air quality in environmental documents. SJVAPCD subsequently revised its GAMAQI document in 2002 and then again in 2015. Key elements of the 2015 GAMAQI document (SJVAPCD 2015a) that are evaluated as part of this analysis include:

- ***CAP Emissions Thresholds:*** These thresholds have been developed for construction and operational emissions, as specified on the next page.

TABLE 5: Air Quality Thresholds of Significance for Criteria Pollutants

		Operational Emissions (ton/year)	
Pollutant/ Precursor	**Construction Emissions (ton/year)**	**Permitted Equipment and Activities**	**Non-Permitted Equipment and Activities**
CO	100	100	100
NOx	10	10	10
ROG	10	10	10
SOx	27	27	27
PM10	15	15	15
PM2.5	15	15	15

Source: SJVAPCD 2015a.

As indicated in the 2015 GAMAQI, permitted sources and activities are subject to SJVAPCD Regulation II (Permits), notably Rule 2201 (New and Modified Stationary Source Review) and Rule 2301 (Emission Reduction Credit Banking). Rule 2201 requires that any emission increases from new permitted stationary sources are mitigated by emission offsets. In most cases, permitted stationary source emissions, therefore will be reduced or mitigated to below the SJVAPCD's recommended significance thresholds (SJVAPCD 2015a).

- ***CAP Modeling:*** When assessing the significance of project-related impacts on air quality, impacts may be significant when emission increases from construction activities or operational activities exceed SJVAPCD's 100 pounds per day screening level, which is applicable to any criteria pollutant after implementation of all enforceable mitigation measures. When on-site emissions are in excess of the screening threshold, SJVAPCD recommends that an ambient air quality analysis be performed. An ambient air quality analysis uses air dispersion modeling (e.g. atmospheric dispersion modeling system (AERMOD) to determine if emission increases from a project will cause or contribute to a violation of the ambient air quality standards. SJVAPCD's March 2015 GAMAQI states that a project should be considered to have a significant impact if its emissions would cause or contribute to a violation of any California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS).

- ***Assessment of Carbon Monoxide (CO) Impacts:*** Due to the fact that increased CO concentrations are usually associated with roadways that are congested and with heavy traffic volume, SJVAPCD established that preliminary screening can be used to determine if a project would result in a CO hotspot at any given intersection. SJVAPCD established that if neither of the following criteria are met at all intersections affected by the project, the project will result in no potential to create a violation of the CO air quality standard:

    - A traffic study for the project indicates that the Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity will be reduced to LOS E or F; or

    - A traffic study indicates that the project will substantially worsen an already existing LOS F on one or more streets or at more intersections in the project vicinity.

  If either of the above criteria can be associated with any intersection affected by the project, the applicant/consultant would need to conduct a CO analysis to determine a project's significance.

- ***Odor Assessment:*** SJVAPCD recommends that odors associated with a proposed project should be evaluated on a case-by-case basis, and suggests a two-part process for evaluating a project's potential odor impacts. Initially, the proximity of a potential odor generator with respect to sensitive receptors (residences, schools, day care centers, hospital, etc.) should be compared to District recommended odor screening distances. For composting facilities, SJVAPCD recommends more detailed analysis of potential odor impacts if sensitive receptors are located within one mile of an odor source. If receptors are located within the recommended screening distance, SJVAPCD suggests that the odors should be assessed qualitatively, taking into consideration project design elements, local meteorological conditions, and the nature of the odor source. SJVAPCD also recommends reviewing historical odor complaints in the project vicinity. An Odor Impact Minimization Plan will be prepared and is required to be part of the Solid Waste Facility Permit application package.

- ***Health Risk Assessment (HRA):*** SJVAPCD's thresholds of significance for health risks associated with toxic air contaminants (TACs) emitted from project operations are as follows:

- Carcinogens: increased cancer risk of 20 per one million or greater for the maximally exposed individual.
- Non-Carcinogens: hazard index of 1 or greater for the maximally exposed individual. Note that the hazard index is expressed as a ratio of exposure levels to acceptable levels.

SJVAPCD recommends that risk assessments be conducted in accordance with California Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines (Cal/EPA 2015a).

The SJVAPCD established the following rules and regulations to ensure compliance with local, State, and federal air quality regulations:

Rule 2010 - Authority to Construct and Permit to Operate

Rule 2010 requires owners of any new or modified equipment that emits, reduces, or controls air contaminants, except those specifically exempted by the SJVAPCD, to apply for an Authority to Construct and Permit to Operate.

Rule 2201 - New and Modified Stationary Source Review

Rule 2201 requires that any emission increases from new permitted stationary sources are mitigated by emission offsets. In most cases, permitted stationary source emissions, therefore, will be reduced or mitigated to below the SJVAPCD's recommended significance thresholds (SJVAPCD 2015a).

Rule 4566 - Organic Material Composting Operations

Rule 4566 regulates organic material composting operations. Rule 4566 controls VOC emissions from composting operations. Additionally, Rule 4566 mandates controlling at least 80% of the VOC emissions that are the common cause of odor issues at uncontrolled composting facilities.

Rule 8021 – Dust Control Plan

Rule 8021 Section 6.3, requires applicants to develop, prepare, submit, obtain approval of, and implement a Dust Control Plan, which would reduce fugitive dust impacts to less than significant for all construction phases of a project, which would also control the release of the Coccidioides immitis fungus from construction activities.

The SJVAPCD will require 'New Source Review' (NSR) for the permitting of new composting operations in accordance with Rule 2201 and Rule 4566. Typically, emissions of VOCs, are the only emissions that will trigger mitigation. The threshold of significance for VOCs in the SJVAPCD is 10 tons per year. Facilities subject to NSR are required to employ BACT, which will be to aerate and maintain a biofilter throughout the 24-day period of active composting; possibly requiring some level of control during curing as well.

Default emission factors are generally conservative, and experts who have experience with compost emissions testing have shown that the real emission factors are much lower. It is possible to accept an Authority to Construct based on default emission factors with the understanding that emission testing after construction will be conducted, and based on those results the permit could be modified to allow more throughput.

Default VOC emission factors in the SJVAPCD are:

- 5.71 lbs./ton of feedstock during composting and curing; and
- 0.2 lbs./ton/day for feedstock storage (These potential emissions may not be required in calculating the total for composting operations, or may be mitigated with compost cover).

It is assumed that 90% of VOCs are generated during active composting and that a finished compost layer will reduce emissions by 80%.

A lower compost emission factor is likely achievable, derived from other site specific studies, of 2.5 lbs./ton.

VOC emissions and offset costs are estimated for the maximum throughput level of each 50,000 TPY for each proposed CASP unit where up to 4 are being proposed. Emission Reduction Credit (ERC) values fluctuate with demand. The following scenario is provided.

- Two-day retention time for feedstock
- Composting with aeration during the active compost phase but not curing.

Table 6: Aeration and Biofiltration during composting only

Feedstock	**Emission Factor**	**Gross VOCs**	**BACT 80% reduction**		**SJVAPCD ERC Costs**	**Offset 2019 cost**
TPY	Lbs./Ton	Lbs.	Lbs.	Tons	Per ton*	
50,000	5.71	285,500	57,100	28.55	$ 4,200	$ 119,910
50,000	2.5	125,000	25,000	12.5	$ 4,200	$ 52,500

*Based upon SJVAPCD posted 2019 costs
(http://www.valleyair.org/busind/pto/erc/ERC_Cost_idx.htm)

Reductions in overall emissions could be achieved with a one day retention time.

APPENDIX A

Title 14 definitions are linked below:

https://govt.westlaw.com/calregs/Document/I2735C56A57C94FB0BB2C821C37CA68B5?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData= (sc.Default) &bhcp=1

T14: “Agricultural Material” means waste material of plant or animal origin, which results directly from the conduct of agriculture, animal husbandry, horticulture, aquaculture, silviculture, vermiculture, viticulture and similar activities undertaken for the production of food or fiber for human or animal consumption or use, which is separated at the point of generation, and which contains no other solid waste. With the exception of grape pomace or material generated during nut or grain hulling, shelling, and processing, agricultural material has not been processed except at its point of generation and has not been processed in a way that alters its essential character as a waste resulting from the production of food or fiber for human or animal consumption or use. Material that is defined in this section 17852 as “food material” or “vegetative food material” is not agricultural material. Agricultural material includes, but is not limited to, manures, orchard and vineyard prunings, grape pomace, and crop residues.

T14 “Digestate” means the solid and/or liquid residual material remaining after organic material has been processed in an in-vessel digester, as defined in section 17896.2(a)(14). Digestate intended to be composted pursuant to this Chapter may only be handled at a facility that has obtained a Compostable Materials Handling Facility Permit pursuant to section 17854.

(14) “Domestic Sewage” means waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

(15) “Disposal of compostable material and/or digestate” means:

(A) 1. the final deposition of compostable material and/or digestate on land, unless excluded from this Chapter 3.1 pursuant to section 17855;

(20) “Food Material” 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.

(A) “Vegetative Food Material” means that fraction of food material, defined above, that is a plant material and is separated from other food material and the municipal solid waste stream. Vegetative food material may be processed or cooked but must otherwise retain its essential natural character and no salts, preservatives, fats or oils, or adulterants shall have been added. Vegetative food material includes, but is not limited to, fruits and vegetables, edible flowers and plants, outdated and spoiled produce, and coffee grounds. Vegetative food material contains no greater than 1.0% of physical contaminants by dry weight, and meets the requirements of section 17868.5.

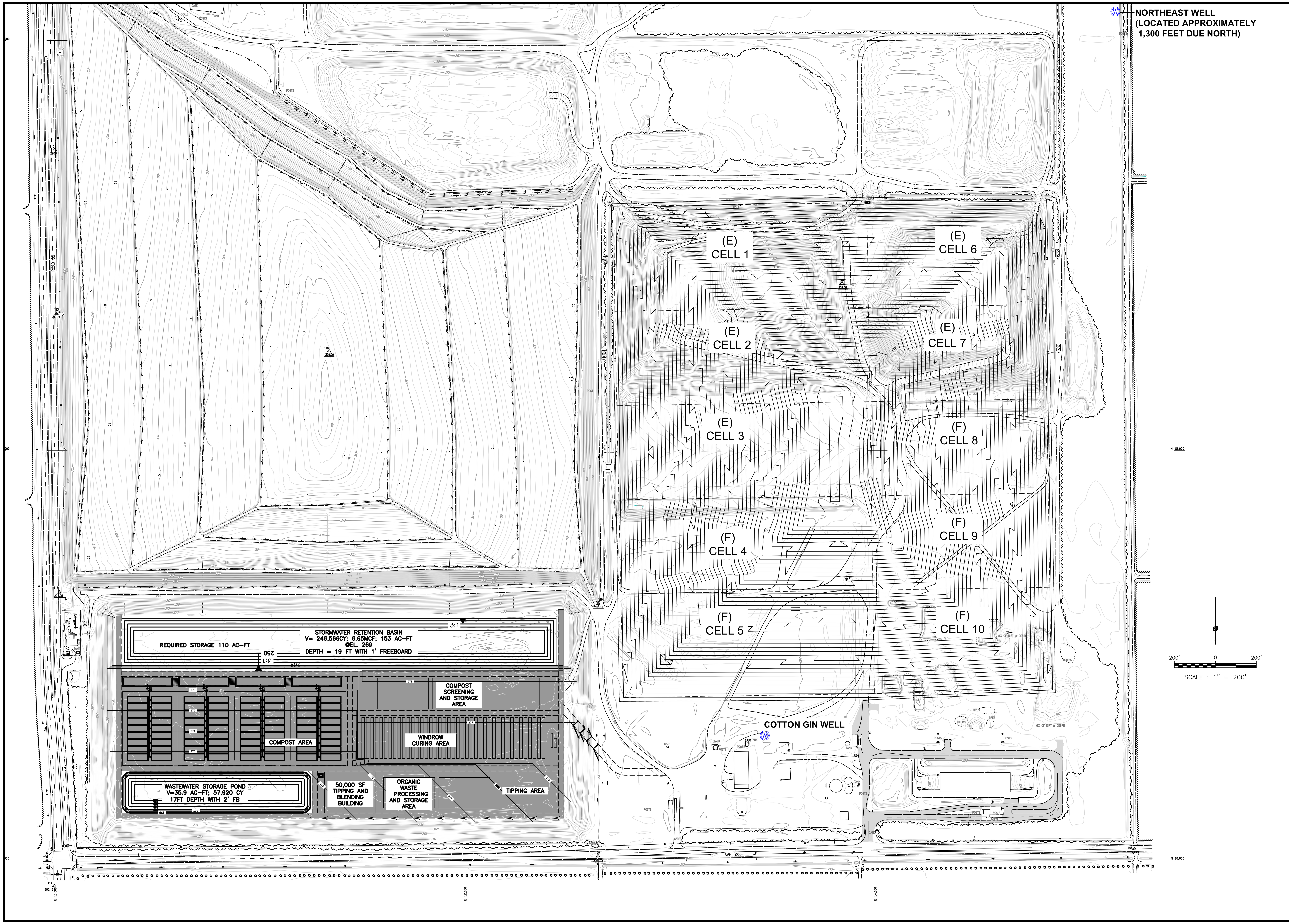
(21) “Green Material” means any plant material except food material and vegetative food material that is separated at the point of generation, contains no greater than 1.0 of percent physical contaminants by dry weight, and meets the requirements of section 17868.5. Green material includes, but is not limited to, tree and 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. Agricultural material, as defined in this section 17852(a)(5), that meets this definition of “green material” may be handled as either agricultural material or green material.

(26) “Mixed Material” means any compostable material that is part of the municipal solid waste stream, and is mixed with or contains non-organics, processed industrial materials, mixed demolition or mixed construction debris, or plastics. A feedstock that is not source separated or contains 1.0% or more of physical contaminants by dry weight is mixed material.

From the proposed SB 1383 regulations for organic waste:

https://www2.calrecycle.ca.gov/PublicNotices/Details/2366

“Organic Waste” means solid wastes containing material originated from living organisms and their metabolic waste products, including but not limited to food waste, green waste material, landscape and pruning waste, applicable organic textiles and carpets, wood, lumber, fiber, paper products, printing and writing paper, manure, biosolids, digestate, and sludges.



EBA ENGINEERING
825 SONOMA AVENUE
SUITE C
SANTA ROSA, CA 95404
TEL: (707) 544-0784

SITE PLAN
VISALIA LANDFILL - COMPOST FACILITY
TULARE COUNTY
8614 AVE 328
VISALIA, CALIFORNIA

Submittal / Revision:

1	
2	
3	
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5	
6	
7	

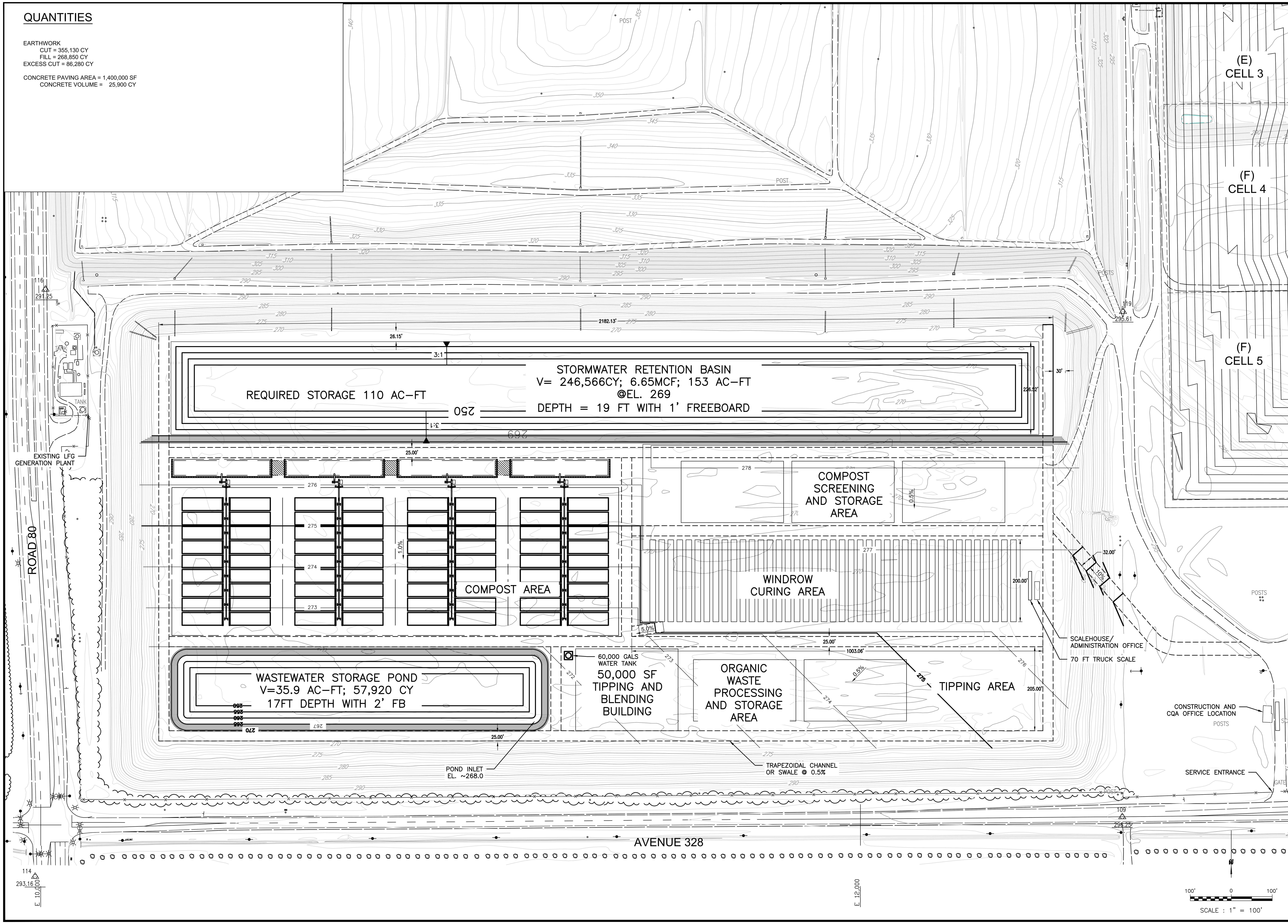
Job No:	18-2573
Drawn By:	WC
Checked By:	MD
Date:	10/10/2019

Sheet Number
1
1 of 2

QUANTITIES

EARTHWORK
CUT = 355,130 CY
FILL = 268,850 CY
EXCESS CUT = 86,280 CY

CONCRETE PAVING AREA = 1,400,000 SF
CONCRETE VOLUME = 25,900 CY



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SITE PLAN - 100 SCALE
VISALIA LANDFILL - COMPOST FACILITY
TULARE COUNTY
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VISALIA, CALIFORNIA

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Sheet Number
2
2 of 2

Scoping Meeting
February 18, 2021

Visalia Landfill Compost & Biomass Conversion Facility
Scoping Meeting
Thursday, February 18, 2021,1:30 p.m. RMA Main Conference Room
SCH No. 2021020054

Name	Agency/Organization	Mailing Address	Phone Number	E-mail
KEVIN Riggi	TCFD	835 S. AKERS	559-802-9805	KRiggi@tularecounty.ca.gov
Mike Feldstein				
Aaron Bock				
Neil Edgar				
Russell Kingsley	zoom			
iPhone # 805-320-8059				
Hector Guerra				
Jessica Willis				

Scoping Meeting
February 25, 2021

From:	Mikayla Vaba
To:	Jessica R Willis
Subject:	RE: Correction for SCH# 2021020054 - Visalia Landfill Compost and Biomass Conversion Facility
Date:	Friday, February 19, 2021 3:35:06 PM
Attachments:	_Memo.pdf

Hello,

The submission has been updated with the information you have provided:
https://ceqasubmit.opr.ca.gov/Document/Index/267393/2

Let us know if you have any further questions or concerns.

Mikayla Vaba
State Clearinghouse
(916) 445-0613

From: Jessica R Willis <JWillis@tularecounty.ca.gov>
Sent: Friday, February 19, 2021 1:46 PM
To: OPR State Clearinghouse <State.Clearinghouse@opr.ca.gov>
Cc: Hector Guerra <HGuerra@tularecounty.ca.gov>
Subject: Correction for SCH# 2021020054 - Visalia Landfill Compost and Biomass Conversion Facility

Good afternoon.

The NOP submitted for the Visalia Landfill Compost and Biomass Conversion Facility Project (SCH# 2021020054) inadvertently included a typo in the Passcode for the Scoping Meeting (via Zoom). As such, the County is extending an invitation to a second Scoping Meeting on Thursday, February 25, 2021 at 1:30 p.m. Please provide the Agencies listed on the Notice of Completion (submitted on February 3, 2021) with this invitation, including the updated Zoom instructions below.

Thank you for your assistance.

Jessica Willis, Planner IV
Tulare County Resource Management Agency
Economic Development and Planning Branch
Environmental Planning Division
Phone: (559) 624-7122
E-mail: JWillis@tularecounty.ca.gov

Topic: Visalia Landfill C&B
Time: Feb 25, 2021 01:30 PM Pacific Time (US and Canada)

Join Zoom Meeting
https://tularecounty-ca.zoom.us/j/95263866948?pwd=WW8xTHowQ0RiZk5QeTJ0L1kvUFB2Zz09

Meeting ID: 952 6386 6948
Passcode: 260206

One tap mobile
+16699009128,,95263866948# US (San Jose)
+12532158782,,95263866948# US (Tacoma)

Dial by your location
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+1 253 215 8782 US (Tacoma)
+1 346 248 7799 US (Houston)
+1 301 715 8592 US (Washington DC)
+1 312 626 6799 US (Chicago)
+1 646 558 8656 US (New York)

Meeting ID: 952 6386 6948
Find your local number: https://tularecounty-ca.zoom.us/u/adBLAMMtqO

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Gavin Newsom
Governor

Kate Gordon
Director

Memorandum

Date: February 19, 2021

To: All Reviewing Agencies

From: Scott Morgan, Director

Re: SCH # **2021020054**

Visalia Landfill – Compost and Biomass Conversion Facility

The Lead Agency has corrected a typo in the Passcode for the Scoping Meeting (via Zoom). Please see the attached document **Invitation to Second Scoping Meeting** for more specific information. All other project information remains the same.

From:	Jessica R Willis
To:	CDFW Tracking (R4CEQA@wildlife.ca.gov); David Deel (david.deel@dot.ca.gov); Mendibles, Lorena@DOT; Native American Heritage Commission (nahc@nahc.ca.gov); Central RWQCB (CentralValleyFresno@waterboards.ca.gov); CEQA Division (CEQA@valleyair.org); Randy.Groom@visalia.city; Paul Bernal (Paul.Bernal@visalia.city); Tom T Tucker II; Theodore Smalley (TSmalley@tularecog.org); Tricia Stever Blattler; Allison Shuklian (AShuklia@tularehhsa.org); Sabrina Bustamante (SLBustamante@tularehhsa.org); Megan Fish (MFish@tularehhsa.org); "Julieta Martinez"; Gilbert Portillo; Reed Schenke; Ross W Miller; Hernan Beltran Herrera; Johnny Wong; Michael Lozeau (michael@lozeaudrury.com); Hannah Hughes (hannah@lozeaudrury.com); Komalpreet Toor (komal@lozeaudrury.com); maya@lozeaudrury.com
Cc:	Hector Guerra; Jonah J Trevino; Lucas Feldstein; Evan Edgar (evan@edgarinc.org); "neil@edgarinc.org"; Russell Kingsley (RKingsley@YorkeEngr.com)
Subject:	UPDATE: Scoping Meeting for Visalia Landfill Compost and Biomass Conversion Facility
Date:	Friday, February 19, 2021 2:01:22 PM

Good afternoon all.

You are receiving this update because Tulare County previously provided you with a copy of the Notice of Preparation (NOP) of an Environmental Impact Report for the Visalia Landfill Compost and Biomass Conversion Facility. The NOP inadvertently included a typo in the Passcode for the Zoom Meeting. As such, the County is extending an invitation to a second Scoping Meeting on Thursday, February 25, 2021 at 1:30 p.m. per the Zoom instructions below.

My sincerest apologies for any inconvenience. Please feel free to contact me via phone or email if I can be of further assistance.

Jessica Willis
Planner IV
Tulare County Resource Management Agency
Environmental Planning Division

County of Tulare Scoping Meeting – Visalia Landfill Compost and Biomass Conversion Facility

Topic: Visalia Landfill C&B
Time: Feb 25, 2021 01:30 PM Pacific Time (US and Canada)

Join Zoom Meeting
https://tularecounty-ca.zoom.us/j/95263866948?pwd=WW8xTHowQ0RiZk5QeTJ0L1kvUFB2Zz09

Meeting ID: 952 6386 6948
Passcode: 260206

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+1 346 248 7799 US (Houston)
+1 301 715 8592 US (Washington DC)
+1 312 626 6799 US (Chicago)
+1 646 558 8656 US (New York)

Meeting ID: 952 6386 6948

Find your local number: https://tularecounty-ca.zoom.us/u/adBLAMMtqO

From:	Jessica R Willis
To:	Robert Robinson (bbutterbredt@gmail.com); Julie Turner (meindiangirl@sbcglobal.net); Brandy Kendricks (krazykendricks@hotmail.com); Leo Sisco (LSisco@tachi-yokut-nsn.gov); Robert Jeff (RGJeff@tachi-yokut-nsn.gov); Shana Powers (SPowers@tachi-yokut-nsn.gov); Greg Cuara (GCuara@tachi-yokut-nsn.gov); Samantha McCarty (SMcCarty@tachi-yokut-nsn.gov); Bianca Arias (barias@tachi-yokut-nsn.gov); Robert L. Gomez (rgomez@tubatulabal.org); "Neil Peyron"; "Kerri Vera"; "Felix Christman"; "Ken Woodrow"
Cc:	Hector Guerra; Cheng Chi
Subject:	UPDATE: Scoping Meeting for Visalia Landfill Compost and Biomass Conversion Facility
Date:	Friday, February 19, 2021 2:08:31 PM

Good afternoon all.

Earlier today you were provided with a copy of the Notice of Preparation (NOP) of an Environmental Impact Report for the Visalia Landfill Compost and Biomass Conversion Facility. The NOP inadvertently included a typo in the Passcode for the Zoom Meeting. As such, the County is extending an invitation to the Scoping Meeting being held on Thursday, February 25, 2021 at 1:30 p.m. per the Zoom instructions below.

My sincerest apologies for any inconvenience. Please feel free to contact me via phone or email if I can be of further assistance.

Jessica Willis
Planner IV
Tulare County Resource Management Agency
Environmental Planning Division

County of Tulare Scoping Meeting – Visalia Landfill Compost and Biomass Conversion Facility

Topic: Visalia Landfill C&B
Time: Feb 25, 2021 01:30 PM Pacific Time (US and Canada)

Join Zoom Meeting
https://tularecounty-ca.zoom.us/j/95263866948?pwd=WW8xTHowQ0RiZk5QeTJ0L1kvUFB2Zz09

Meeting ID: 952 6386 6948
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+1 301 715 8592 US (Washington DC)
+1 312 626 6799 US (Chicago)
+1 646 558 8656 US (New York)

Meeting ID: 952 6386 6948

Find your local number: https://tularecounty-ca.zoom.us/u/adBLAMMtqO

Jessica Willis
Planner IV
Tulare County Resource Management Agency
Environmental Planning Division
Ph: (559) 624-7122
Email: JWillis@tularecounty.ca.gov

Visalia Landfill Compost & Biomass Conversion Facility
Scoping Meeting
Thursday, February 25, 2021, 1:30 p.m. RMA (virtual Zoom meeting only)
SCH No. 2021020054

Name	Agency/Organization	Mailing Address	Phone Number	E-mail
Aaron Bock	RMA – Planning			
Hector Guerra	RMA – Planning			
Jessica Willis	RMA – Planning			
Luke Feldstein	RMA – Solid Waste			
Jonah Trevino	RMA – Solid Waste			
Luis Aguilar	RMA – Public Works			
Johnson Vang	RMA – Public Works			
Mike Winton	RMA – Public Works			
Russell Kingsley	Yorke Engineering			
Evan Edgar	Edgar Engineering			
Neil Edgar	Edgar Engineering			
No other Agencies or Tribes were in attendance.				

From:	Jessica R Willis
To:	Jason Serpa
Cc:	Hector Guerra; Aaron R Bock
Subject:	RE: Scoping Meeting for Visalia Landfill Compost and Biomass Conversion Facility
Date:	Thursday, February 25, 2021 6:21:01 PM
Attachments:	Visalia Landfill_NOP_2-3-21.pdf

Good evening Jason.

Please see attached the Notice of Preparation for the Project. The commenting period for the NOP ends on March 5, 2021. Please feel free to contact me any time if you have any questions or concerns.

Best Regards.

Jessica Willis
Planner IV
RMA Environmental Planning
Ph: (559) 624-7122

From: Jason Serpa <Jason.Serpa@visalia.city>
Sent: Thursday, February 25, 2021 4:18 PM
To: Jessica R Willis <JWillis@tularecounty.ca.gov>
Subject: Scoping Meeting for Visalia Landfill Compost and Biomass Conversion Facility

Hi Jessica –

My name is Jason Serpa and I am the City of Visalia Solid Waste Manager. I missed this meeting today. Is there a Powerpoint or any material from it that I may be able to review?

Any material you may have is appreciated. Thank you!

Comment Letters and Emails Received

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Ave
Fresno, California 93710
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

Governor's Office of Planning & Research

Mar 08 2021

STATE CLEARINGHOUSE

March 5, 2021

Hector Guerra
Chief Environmental Planner
Tulare County Resource Management Agency
5961 South Mooney Boulevard
Visalia, California 93277

Subject: Visalia Landfill – Compost and Biomass Conversion Facility Notice of Preparation (NOP) SCH No.: 2021020054

Dear Mr. Guerra:

The California Department of Fish and Wildlife (CDFW) received a Notice of Intent to Adopt an NOP from Tulare County Resource Management Agency for the Project pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statue for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (*Id.*, § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.
CDFW is also submitting comments as a **Responsible Agency** under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

authority (Fish & G. Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code may be required.

PROJECT DESCRIPTION SUMMARY

Proponent: Tulare County Public Works; Visalia Landfill

Objective: The objective of the Project is to development of a Compost and Biomass Conversion Facility at the existing Visalia Landfill. The compost facility will include a processing and composting equipment, a 50,000-square foot processing building, compacted compost pads, 1,000-square foot office, and a lined pond. The biomass facility will produce electricity, heat and biochar using wood fuel that will be provided by local activities to reduce landfill disposal.

Location: 8614 Avenue 328, Visalia, California 93291. APN's: 077-020-030, and 077-020-021. Approximately 36-aces on the northeast corner of Avenue 328 and Road 80.

Timeframe: Unspecified

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist Tulare County Resource Management Agency in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions may also be included to improve the document.

Special-status resources have been documented in and adjacent to the Project area. Though the Landfill has present in the Project area for several years, there is still potential for these resources to occur as a result of habitat presence in the Project area vicinity. These resources may need to be evaluated and addressed prior to any approvals that would allow ground-disturbing activities or land use changes. The NOP indicates there are potentially significant impacts without implementation of mitigation measures, but the mitigation measures listed in the NOP are non-specific and/or may be inadequate to reduce impacts to less than significant. CDFW is concerned regarding potential impacts to special-status species including, but not limited to: the state threatened and federally endangered San Joaquin Kit Fox (*Vulpes macrotis mutica*), and the State threatened Swainson's Hawk (*Buteo swainsoni*) and Tricolored Blackbird (*Agelaius tricolor*). To adequately assess any potential impacts to biological resources, focused biological surveys should be conducted by a qualified wildlife biologist/botanist during the appropriate survey period(s) in order to determine whether any special-status species and/or suitable habitat features may be present within the Project area. Properly conducted biological surveys, and the information assembled from them, are essential to identify any mitigation, minimization, and avoidance measures and/or the need for additional or protocol-level surveys, especially in the areas not in irrigated agriculture, and to identify any Project-related impacts under CESA and other species of concern.

I. Environmental Setting and Related Impact
Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or United States Fish and Wildlife Service (USFWS)?

COMMENT 1: San Joaquin Kit Fox (SJKF)

Issue: SJKF have been documented to occur near the vicinity of the Project site (CDFW 2021). SJKF den in right-of-ways, vacant lots, etc., and populations can fluctuate over time. Based on aerial imagery, most of the land use surrounding the Project site is active agriculture with isolated patches of annual or ruderal grasslands. SJKF are known to forage in fallow and agricultural fields as well as natural habitats. Fallow fields, annual grasslands, and ruderal grasslands may provide denning opportunities. Presence/absence in any one year is not necessarily a reliable indicator of SJKF potential to occur on a site. SJKF may be attracted to the Project area because of ground-disturbing activities and the loose, friable soils resulting from intensive ground disturbance. As a result, there is potential for SJKF to occur the Project site.

Specific impact: Without appropriate avoidance and minimization measures for SJKF, potential significant impacts include den collapse, inadvertent entrapment, reduced reproductive success, reduction in health and vigor of young, and direct mortality of individuals.

Evidence impact is potentially significant: Habitat loss resulting from agricultural, urban, and industrial development is the primary threat to SJKF (Cypher et al. 2013). Subsequent ground-disturbing activities have the potential to significantly impact local SJKF populations.

Recommended Potentially Feasible Mitigation Measure(s)
To evaluate potential impacts to SJKF associated with the Project, CDFW recommends conducting the following evaluation of the Project site, incorporating the following mitigation measures into the EIR prepared for this Project, and that these measures be made conditions of approval for the Project.

Recommended Mitigation Measure 1: SJKF Habitat Assessment

CDFW recommends that a qualified biologist conduct a habitat assessment in advance of Project implementation, to determine if the Project site or its immediate vicinity contains suitable habitat for SJKF.

Recommended Mitigation Measure 2: SJKF Surveys

If potential SJKF dens occur on the Project site, CDFW recommends assessing presence/absence of SJKF by conducting surveys following the USFWS "Standardized recommendations for protection of the San Joaquin kit fox prior to or during ground disturbance" (2011). Specifically, CDFW advises conducting these surveys in all areas of potentially suitable habitat no less than 14 days and no more than 30 days prior to beginning of ground disturbing activities.

Recommended Mitigation Measure 3: SJKF Take Authorization

SJKF detection warrants consultation with CDFW to discuss how to avoid take, or if avoidance is not feasible, to acquire an Incidental Take Permit (ITP) prior to ground-disturbing activities, pursuant to Fish and Game Code section 2081 subdivision (b).

COMMENT 2: Swainson's Hawk (SWHA)

Issue: SWHA has the potential to nest or forage near the Project site. The Project location is within known SWHA range and the species occurs throughout the area (CDFW 2021). SWHA have the potential to forage near or on the Project site. The California Natural Diversity Database (CNDDB) shows SWHA occurrences throughout the area near the Project sites (CDFW 2021). In addition to annual grasslands, SWHA are known to forage in alfalfa, fallow fields, dry-land and irrigated pasture, rice land (during the non-flooded period), cereal grain crops (including corn after harvest), beet, tomato, and other low-growing row or field crops.

Specific impacts: Without appropriate avoidance and minimization measures for SWHA, potential significant impacts that may result from Project activities include nest abandonment, loss of nest trees, loss of foraging habitat that would reduce nesting success (loss or reduced health or vigor of eggs or young), and direct mortality. Any take of SWHA without appropriate incidental take authorization would be a violation of Fish and Game Code.

Evidence impact is potentially significant: SWHA exhibit high nest-site fidelity year after year and lack of suitable nesting habitat in the San Joaquin Valley limits their local distribution and abundance (CDFW 2016). The Project as proposed will involve noise, groundwork, and movement of workers that could affect nests and has the potential to result in nest abandonment, significantly impacting local nesting SWHA.

Recommended Potentially Feasible Mitigation Measure(s)
Because suitable habitat for SWHA is present at and adjacent to the Project site, CDFW recommends conducting the following evaluation of the Project site, incorporating the following mitigation measures into the EIR prepared for this Project, and that these measures be made conditions of approval for the Project.

Recommended Mitigation Measure 4: SWHA Surveys

CDFW recommends that a qualified wildlife biologist conduct surveys for nesting SWHA following the survey methods developed by the Swainson's Hawk Technical Advisory Committee (SWHA TAC, 2000) prior to project implementation if Project activities will occur in the normal bird breeding season (March 1 through September 15). The survey protocol includes early season surveys to assist the project proponent in implementing necessary avoidance and minimization measures, and in identifying active nest sites prior to initiating ground-disturbing activities.

Recommended Mitigation Measure 5: No-disturbance Buffer

CDFW recommends a minimum no-disturbance buffer of ½-mile be delineated around active nests until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.

Recommended Mitigation Measure 6: SWHA Take Authorization

CDFW recommends that in the event an active SWHA nest is detected during surveys and the ½-mile no-disturbance buffer around the nest cannot feasibly be implemented, consultation with CDFW is warranted to discuss how to implement the project and avoid take. If take cannot be avoided, take authorization through the acquisition of an ITP, pursuant to Fish and Game Code section 2081 subdivision (b) is necessary to comply with CESA. In addition, compensatory habitat mitigation would be warranted to offset impacts to nesting habitat or habitat utilized by migrating individuals.

Recommended Mitigation Measure 7: SWHA Foraging Habitat

CDFW recommends compensation for the loss of SWHA foraging habitat to reduce impacts to SWHA foraging habitat to less than significant based on CDFW's "Staff Report Regarding Mitigation for Impacts to Swainson's Hawks" (CDFG, 1994), which recommends that mitigation for habitat loss occur within a minimum distance of 10 miles from known nest sites and the amount of habitat compensation is dependent on nest proximity. In addition to fee title acquisition or conservation easement recorded on property with suitable grassland habitat features, mitigation may occur by the purchase of conservation or suitable agricultural easements. Suitable agricultural easements would include areas limited to production of crops such as alfalfa, dry land and irrigated pasture, and cereal grain crops. Vineyards, orchards, cotton fields, and other dense vegetation do not provide adequate foraging habitat.

COMMENT 3: Tricolored Blackbird (TRBL)

Issue: TRBL have been documented in the Project vicinity (CDFW 2021). Review of aerial imagery indicates that the Project site is near dense low vegetation fields and silage fields that may serve as nest colony sites. Directly to the West of the Project site there is a dairy which has the potential for TRBL to aggregate.

Specific impact: Without appropriate avoidance and minimization measures for TRBL, potential significant impacts include nest and/or colony abandonment, reduced reproductive success, and reduced health and vigor of eggs and/or young.

Evidence impact would be significant: As mentioned above, aerial imagery indicates that the Project site is near dense low vegetation and silage fields that may serve as nest colony sites. TRBL aggregate and nest colonially, forming colonies of up to 100,000 nests (Meese. 2017). Approximately 86% of the global population is found in the San Joaquin Valley (Kelsey 2008, Weintraub et al. 2016). Increasingly, TRBL are forming larger colonies that contain progressively larger proportions of the species' total population (Kelsey 2008). In 2008, for example, 55% of the species' global population nested in only two colonies, which were located in silage fields (Kelsey 2008). In 2017, approximately 30,000 TRBL were distributed among only 16 colonies in Merced County (TBWG 2007). Nesting can occur synchronously, with all eggs laid within one week (Orians 1961). For these reasons, depending on timing, disturbance to nesting colonies can cause abandonment, significantly impacting TRBL populations (Meese. 2017).

Recommended Potentially Feasible Mitigation Measure(s)
To evaluate potential Project-related impacts to TRBL, CDFW recommends conducting the following evaluation of the Project area prior to ground-disturbing activities, incorporating the following mitigation measures into the EIR prepared for this Project, and that these measures be made conditions of approval for the Project.

Recommended Mitigation Measure 8: TRBL Habitat Assessment

CDFW recommends that a qualified biologist conduct a habitat assessment of the Project site in advance of Project implementation, to determine if the Project site or its vicinity contains suitable habitat for TRBL.

Recommended Mitigation Measure 9: TRBL Surveys

If suitable habitat occurs on the Project site or its vicinity, CDFW recommends that Project activities be timed to avoid the typical bird breeding season (February 1 through September 15). However, if Project activities must take place during that time, CDFW recommends that a qualified wildlife biologist conduct surveys for TRBL, within a minimum 500-foot buffer from the Project site, no more than 10 days prior to the start of implementation to evaluate presence/absence of TRBL nesting colonies in proximity to Project activities and to evaluate potential Project-related impacts.

Recommended Mitigation Measure 10: TRBL Avoidance

If an active TRBL nesting colony is found during pre-activity surveys, CDFW recommends implementation of a minimum 300-foot no-disturbance buffer in accordance with CDFW's "*Staff Guidance Regarding Avoidance of Impacts to Tricolored Blackbird Breeding Colonies on Agricultural Fields in 2015*" (CDFW 2015b). CDFW advises that this buffer remain in place until the breeding season has ended or until a qualified biologist has determined that nesting has ceased, the birds have fledged, and are no longer reliant upon the colony or parental care for survival. It is important to note that TRBL colonies can expand over time and for this reason, the colony may need to be reassessed to determine the extent of the breeding colony within 10 days prior to Project initiation.

Recommended Mitigation Measure 11: TRBL Take Authorization

In the event that a TRBL nesting colony is detected during surveys, consultation with CDFW is warranted to discuss how to implement the Project and avoid take, or if avoidance is not feasible, to acquire an ITP, pursuant to Fish and Game Code section 2081 subdivision (b), prior to any ground-disturbing activities.

II. Editorial Comments and/or Suggestions

Federally Listed Species: CDFW recommends consulting with the USFWS on potential impacts to federally listed species including, but not limited to, SJKF. Take under FESA is more broadly defined than CESA; take under FESA also includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Consultation with the USFWS in order to comply with FESA is advised well in advance of any ground-disturbing activities.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a data base which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNDDB field survey form can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data. The completed form can be mailed electronically to CNDDB at the following email address: CNDDB@wildlife.ca.gov. The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

CONCLUSION

CDFW appreciates the opportunity to comment on the NOP to assist Tulare County Resource Management Agency in identifying and mitigating Project impacts on biological resources.

More information on survey and monitoring protocols for sensitive species can be found at CDFW's website (https://www.wildlife.ca.gov/Conservation/Survey-Protocols). Please see the enclosed Mitigation Monitoring and Reporting Program (MMRP) table which corresponds with recommended mitigation measures in this comment letter. Questions regarding this letter or further coordination should be directed to Aimee Braddock, Environmental Scientist at (559) 243-4014 extension 243 or aimee.braddock@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Julie Vance
FA83F09FE08945A...
Julie A. Vance
Regional Manager

Attachment

cc: Office of Planning and Research, State Clearinghouse, Sacramento

REFERENCES

CDFG, 1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo Swainsoni*) in the Central Valley of California. California Department of Fish and Game.

CDFW. 2015. Staff Guidance Regarding Avoidance of Impacts to Tricolored Blackbird Breeding Colonies on Agricultural Fields in 2015. March 19, 2015.

CDFW. 2016. Five Year Status Review for Swainson's Hawk (*Buteo swainsoni*). California Department of Fish and Wildlife. April 11, 2016.

CDFW. 2021. Biogeographic Information and Observation System (BIOS). https://www.wildlife.ca.gov/Data/BIOS. Accessed March 1, 2021.

Cypher, B. L., S. E. Phillips, P. A. Kelly, 2013. Quantity and distribution of suitable habitat for endangered San Joaquin kit foxes: conservation implications. Canid Biology and Conservation 16(7): 25–31.

Kelsey, R. 2008. Results of the tricolored blackbird 2008 census. Report submitted to U.S. Fish and Wildlife Service, Portland, OR, USA.

Meese, R.J. 2017. Results of the 2017 Tricolored Blackbird Statewide Survey. Calif. Dept. of Fish and Wildlife, Wildlife Branch, Nongame Wildlife Program Report 2017-XX, Sacramento, CA.

Orians, G.H. 1961. The ecology of blackbird (*Agelaius*) social systems. Ecol. Monogr. 31:285-312.

Swainson's Hawk Technical Advisory Committee (SWHA TAC). 2000. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. Swainson's Hawk Technical Advisory Committee, May 31, 2000.

Tricolored Blackbird Working Group (TBWG). 2007. Conservation Plan for the Tricolored Blackbird (*Agelaius tricolor*). https://www.fws.gov/migratorybirds/pdf/management/focal-species/TricoloredBlackbird.pdf

USFWS. 2011. Standardized recommendations for protection of the San Joaquin kit fox prior to or during ground disturbance, January 2011.

Weintraub, K., T.L. George, and S.J. Dinsmore. 2016. Nest survival of tricolored blackbirds in California's Central Valley. The Condor 118(4): 850–861

Attachment 1

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE RECOMMENDED MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

PROJECT: Visalia Landfill – Compost and Biomass Conversion Facility

SCH No.: 2021020054

RECOMMENDED MITIGATION MEASURE	STATUS/DATE/INITIALS
Before Disturbing Soil or Vegetation	
Mitigation Measure 1: SJKF Habitat Assessment	
Mitigation Measure 2: SJKF Surveys	
Mitigation Measure 3: SJKF Take Authorization	
Mitigation Measure 4: SWHA Surveys	
Mitigation Measure 6: SWHA Take Authorization	
Mitigation Measure 7: SWHA Foraging Habitat	
Mitigation Measure 8: TRBL Habitat Assessment	
Mitigation Measure 9: TRBL Surveys	
Mitigation Measure 11: TRBL Take Authorization	
During Construction	
Mitigation Measure 5: SWHA No-disturbance Buffer	
Mitigation Measure 10: TRBL Avoidance	

California Environmental Protection Agency

Department of
Resources Recycling and Recovery

Gavin Newsom
California Governor

Jared Blumenfeld
Secretary for Environmental Protection

Rachel Machi Wagoner
CalRecycle Director

March 3, 2021

Mr. Hector Guerra, Chief Environmental Planner
County of Tulare Resource Management Agency
5961 S. Mooney Blvd.
Visalia, CA 93277

Subject: **Notice of Preparation for a Focused Environmental Impact Report for the Visalia Landfill - Compost and Biomass Conversion Facility SCH# 2021020054, Facility No. 54-AA-0009, Tulare County**

Dear Mr. Guerra:

Thank you for allowing the Department of Resources Recycling and Recovery (CalRecycle) staff to provide comments on the proposed project and for your agency's consideration of these comments as part of the California Environmental Quality Act (CEQA) process.

PROJECT DESCRIPTION

The Tulare County Resource Management Agency (RMA), acting as Lead Agency, has prepared and circulated a Notice of Preparation (NOP) for a Focused Environmental Impact Report (FEIR) in order to comply with CEQA and to provide information to, and solicit consultation with, Responsible Agencies in the approval of the proposed project.

The proposed Compost and Biomass Conversion Facility (proposed project) is located at the existing Visalia Disposal Site, on an approximately 36.0 acre site located at the northeast corner of Avenue 328 and Road 80 approximately six miles northwest of the City of Visalia. The site is currently zoned as AE-40.

The proposed project would allow the operation of a covered aerated static pile (CASP) compost facility. The compost facility would occupy 36 acres of the 634 acre landfill parcel. The compost facility will be designed to accept up to 200,000 tons per year (TPY) in increments of 50,000 TPY, and can store up to 200,000 cubic yards on-site of organic material; Installation and use of composting equipment; installation of a 50,000 square foot processing building and 1,000 square foot office building; construction of compost pads, and a lined pond. The proposed project would employ 15-20 employees and operate Monday-Friday between 6:00 a.m. to 4:00 p.m., and 7:00 a.m. to 12:00 p.m. (noon) on Saturdays; summer hours may begin earlier than 6:00 a.m.

The proposed project would also allow a 2.0 mega-watt (MW) biomass conversion facility at the landfill. The facility will produce electricity, heat and biochar using wood fuel which includes wood waste. The facility will utilize approximately 18,000 bone dry tons (BDT) of wood chips per year or 25,000 tons of per year of wet recovered wood waste and produce approximately a net amount (after parasitic load) 2.0 MW of electrical energy per hour. In addition to this the facility will also produce approximately 20-30 MM BTU of waste heat and approximately 300-600 pounds of biochar per hour. The facility is planned to operate 24/7.

COMMENTS/QUESTIONS

Facility Boundary:

- Does the 36 acres include both the Compost Facility and the Biomass Facility? Please clarify how many acres will be dedicated to each of the two activities.
- Will there be any overlap of operations between the two proposed activities and/or with the landfill activities (i.e., equipment or scales, etc.)?
- Will any portion of these activities be located on top of the landfill waste footprint?
- Since the proposed project also includes new structures in close proximity to the landfill waste footprint and there is the potential for landfill gas migration from the landfill, the design and construction of any structures need to meet the requirements of Title 27, California Code of Regulations, Section 21190.

Solid Waste Facility Permit (SWFP), Facility No. 54-AA-0009:

- The current name of the facility on the SWFP is “Visalia Disposal Site”. Although disposal site and landfill can be used interchangeably, it is best to stay consistent with the name of the facility. Does the operator plan to change the name of the facility to Visalia Landfill or keep the name as Visalia Disposal Site?
- The current permitted maximum tonnage at the Visalia Disposal Site is 2,000 tons per day (tpd). Will the facility need to increase its daily tonnage to accommodate the proposed project? The FEIR will need to evaluate the potential impacts for the additional daily tonnage for the proposed activities and if the 2,000 tpd is expected to be exceeded.
- The current permitted traffic volume is 900 vehicles per day. Will this number be exceeded?
- Will the compost activity be added as an activity to the current SWFP, or will the proposed activities be permitted as separate facilities?
    - The compost activity may need a Compostable Materials Handling Facility Permit.
    - The biomass activity may not be subject to CalRecycle’s permitting requirements if the activity meets biomass conversion as defined in PRC Section 40106.
    - See the following link for CalRecycle’s regulatory tiers - https://www.calrecycle.ca.gov/lea/regs/tiered/tierchart.

Incoming material:

- Please include all the types of materials/feedstocks that will be accepted for each proposed activity.
- Will the material be source-separated?
- Where will all the material be accepted for both the CASP and the biomass operation? Where and how will incoming material be processed?
- Will additional material be accepted from new sources?
- How will any residual material be handled and/or disposed of?

Daily tonnage: How much material can be accepted in one day for each proposed activity? Will there be a daily limit on incoming material (in tons)?

Storage:

- Does the 200,000 cubic yard capacity include all material onsite including incoming material, pre-processed material, CASP capacity, and finished stored material? Please clarify the total site design capacity.
- What is the storage capacity of the biomass activity?
- Please describe how material will be stored and for how long. Will there be a limit on the amount of material or how long the material can be stored onsite?

Hours of Operation:
The project description for proposed hours of operation for the Compost Facility are Monday-Friday between 6:00 a.m. to 4:00 p.m., and 7:00 a.m. to 12:00 p.m. (noon) on Saturdays; summer hours may begin earlier than 6:00 a.m. and 24/7 for the Biomass Facility.

- Page 9 of the Composting Facility Operation Plan lists hours for receiving material as Monday – Friday from 7:00 a.m. to 4:00 p.m. and Saturday 8:00 a.m. to 4:00 p.m., and processing hours will be 24 hours, 7 days per week. The hours in the Operation Plan are not consistent with the project description above. The proposed hours should be consistent throughout the FEIR and clearly identified for each activity.
- Please clarify the allowable hours of operation for the Compost Facility. Will any hours during the day or night be restricted? Is operation on Sundays restricted? Please include operation hours as well as ancillary hours (i.e., maintenance), and/or emergency hours.
- Additionally, the proposed project states, “A majority of the trips will occur between 7:00 a.m. and 9:00 a.m., and between 4:00 p.m. and 6:00 p.m.” These hours are inconsistent with the proposed project hours. Please clarify hours and traffic.
- Will any hours, such as receipt of material be restricted at the Biomass Facility?

Below are links to CalRecycle's CEQA Toolbox which may assist the Lead Agency in preparing the FEIR for solid waste facilities, including composting activities:

- https://www.calrecycle.ca.gov/swfacilities/permitting/ceqa/toolbox
- https://www.calrecycle.ca.gov/SWFacilities/Permitting/CEQA/Documents/Guidance/Compost/

Solid Waste Regulatory Oversight
The Tulare County Department of Health Services, Division of Environmental Health is the Local Enforcement Agency (LEA) for Tulare County and responsible for providing regulatory oversight of solid waste handling activities, including inspections and permitting. Please contact the LEA, Sioux Lee at (559) 624-7400, to discuss the regulatory requirements for the proposed project.

CONCLUSION

CalRecycle staff thanks the Lead Agency for the opportunity to review and comment on the environmental document and hopes that this comment letter will be useful to the Lead Agency in carrying out their responsibilities in the CEQA process and preparation of the Draft FEIR.

CalRecycle staff requests copies of any subsequent environmental documents, copies of public notices and any Notices of Determination for this proposed project.

If the environmental document is adopted during a public hearing, CalRecycle staff requests 10 days advance notice of this hearing. If the document is adopted without a public hearing, CalRecycle staff requests 10 days advance notification of the date of the adoption and proposed project approval by the decision making body.

If you have any questions regarding these comments, please contact me at (916) 341-6772 or by e-mail at Joy.Isaacson@calrecycle.ca.gov.

Sincerely,

JM Isaacson

Joy Isaacson, Environmental Scientist
Permitting & Assistance Branch – South Unit
Waste Permitting, Compliance & Mitigation Division
CalRecycle

cc: Eric Tanner, CalRecycle
Sioux Lee, Tulare County LEA

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Making Conservation
a California Way of Life

February 16, 2021

TUL-99-47.74
NOP FOR EIR
COMPOST AND BIOMASS FACILITY
VISALIA LANDFILL
SCH # NOT ASSIGNED
GTS PROJECT #21878

SENT VIA EMAIL

Mr. Hector Guerra, Chief Environmental Planner
Tulare County Resource Management Agency
Economic Development and Planning Branch
5961 South Mooney Boulevard
Visalia, CA 93277-9394

Dear Mr. Guerra:

Thank you for the opportunity to review the Notice of Preparation (NOP) for an Environmental Impact Report (EIR) for a proposed Compost and Biomass Conversion Facility (Project) at the Visalia Landfill.

The Project will be constructed on 36 acres of the 634-acre Visalia Landfill property. The Compost facility will be designed to accept up to 200,000 tons per year (TPY) of landfill material. The Project proposes to operate Monday-Friday between 6:00 a.m. to 4:00 p.m. and on Saturdays from 7:00 a.m. to 12:00 p.m.(noon). The Compost facility would utilize approximately 15-20 employees.

The Project is located at the northeast corner of Avenue 328 and Road 80, approximately 3 miles east of the State Route (SR) 99/Betty Drive Interchange, approximately 4 miles north of the SR 198/Plaza Drive interchange and about 6-miles northwest of the City of Visalia.

The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. Caltrans provides the *following comments* consistent with the State's smart mobility goals that support a vibrant economy and sustainable communities:

1. Caltrans has determined that once completed, the Project will generate minimal operational traffic. Caltrans has estimated most of the traffic generated by the Project will be during the approximately 5 to 6-month construction phase - due to heavy truck traffic and construction worker trips.

2. Caltrans concurs with the County’s assessment in the Transportation/Traffic section of the NOP, that the EIR will analyze construction-related impacts, analyze outgoing vehicle trips delivering finished compost and other potential traffic impacts as well as operational impacts.

3. Caltrans reviewed the most recent Monitoring Program Reports to determine if any of the identified locations fall within the Project study area. These programs include the Wrong-Way Collision Monitoring Program, Cross-Over Collision Monitoring Program, Run-Off Road Monitoring Program, Pedestrian Monitoring Program, and Bicycle Monitoring Program. The Project <u>is not</u> located within or near any of the monitoring locations for the above-mentioned programs.

4. No Traffic Investigation Reports (TIRs) have been conducted at or near the Project site.

5. Caltrans recommends the Project implement “smart growth” principles regarding parking solutions, providing alternative transportation choices to residents and employees. Alternative transportation choices may include but are not limited to parking for carpools/vanpools, car-share and/or ride-share programs.

6. Based on Caltrans VMT-Focused Transportation Impact Study Guide, dated May 20, 2020 and effective as of July 1, 2020, Caltrans seeks to reduce single occupancy vehicle trips, provide a safe transportation system, reduce per capita Vehicle Miles Traveled (VMT), increase accessibility to destinations via cycling, walking, carpooling, transit and reduce greenhouse gas (GHG) emissions. Caltrans recommends that the project proponent continue to work with the County of Tulare to further implement improvements to reduce vehicles miles traveled and offer a variety of transportation modes for its employees.

If you have any other questions, please call me at (559) 488-7396.

Sincerely,

DAVID DEEL
Associate Transportation Planner
Transportation Planning – South

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
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(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

February 3, 2021

Hector Guerra, Chief Environmental Planner
Tulare County Resource Management Agency
5961 S. Mooney Blvd.
Visalia, CA 93277

Re: 2021020054, Visalia Landfill – Compost and Biomass Conversion Facility Project, Tulare County

Dear Mr. Guerra:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

- **a.** The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
- **b.** A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

- **a.** Avoidance and preservation of the resources in place, including, but not limited to:
  - **i.** Planning and construction to avoid the resources and protect the cultural and natural context.
  - **ii.** Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
- **b.** Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
  - **i.** Protecting the cultural character and integrity of the resource.
  - **ii.** Protecting the traditional use of the resource.
  - **iii.** Protecting the confidentiality of the resource.
- **c.** Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
- **d.** Protecting the resource. (Pub. Resource Code §21084.3 (b)).
- **e.** Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
- **f.** Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

- **a.** The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
- **b.** The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
- **c.** The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.

b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,

Nancy Gonzalez-Lopez
Cultural Resources Analyst

cc: State Clearinghouse

March 5, 2021

Hector Guerra
County of Tulare
Resource Management Agency
5961 South Mooney Blvd.
Visalia, CA, 93277

Project: Notice of Preparation of an Environmental Impact Report (EIR) for the Visalia Landfill – Compost and Biomass Conversion Facility

District CEQA Reference No: 20210119

Dear Mr. Guerra:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the project referenced above from the County of Tulare (County) consisting of development of a compost and biomass conversion facility (Project). The Project is located at the existing Visalia Landfill site on approximately 36-acre site located at the northeast corner of Avenue 328 and Road 80 approximately six miles northwest of the City of Visalia (APN 119-010-039).

Project Scope

The Project consists of the development of a composting and biomass conversion facility. The Project consists of two parts, the first is the construction of the Compost Facility that will operate a covered aerated static pile compost facility to comply with SB 1383 regulations, and the second part is the installation and operation of a Biomass Facility.

- Compost Facility - The compost facility will be able to accept up 200,000 tons per year, in increments of 50,000 tons, and will be able to store up to 200,000 cubic yards of organic material onsite. The compost facility will also include the installation of processing and composting equipment, a 50,000 square foot processing building, compacted compost pads, and a lined pond. The composting facility will have approximately 15-20 employees.

- Biomass Facility - The County will also be amending their CUP application to add a 2.0 mega-watt (MW) biomass conversion facility at the existing landfill. The biomass facility will produce electricity, heat and Biochar using wood as fuel that will be provided by local sources to help meet the mandates of SB 1383. The facility will utilize approximately 18,000 bone dry tons (BDT) or 25,000 per year of wet recovered wood waste and will generate approximately a net amount of 2.0 MW electrical energy per hour. In addition, the biomass facility will also generate 20-30 MM BTU of waste heat and approximately 300-600 pounds of Biochar per hour. This facility will be operated 24/7 with the exception of maintenance requirements.

The District's initial review of the Project concludes that emissions resulting from construction and/or operation of the Project may exceed the following thresholds of significance: 100 tons per year of carbon monoxide (CO), 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), 27 tons per year of oxides of sulfur (SOx), 15 tons per year of particulate matter of 10 microns or less in size (PM10), or 15 tons per year of particulate matter of 2.5 microns or less in size (PM2.5). The District recommends that a more detailed preliminary review of the Project be conducted for the Project's construction and operational emissions.

Other potential significant air quality impacts related to Toxic Air Contaminants (see information below under Health Risk Assessment), Ambient Air Quality Standards, Hazards and Odors, may require assessments and mitigation. More information can be found in the District's Guidance for Assessing and Mitigating Air Quality Impacts at: https://www.valleyair.org/transportation/GAMAQI_12-26-19.pdf

The District offers the following comments:

1) Project Related Criteria Pollutant Emissions

The District recommends that a more detailed preliminary review of the Project be conducted for the Project's construction and operational emissions. The additional environmental review of the Project's potential impact on air quality should consider the following items:

1a) Project Related Construction Emissions

Construction emissions are short-term emissions and should be evaluated separately from operational emissions. Equipment exhaust, as well as fugitive dust emissions should be quantified. For reference, the District's annual criteria thresholds of significance for construction are listed above.

The District recommends that the County consider the use of the cleanest reasonably available off-road construction practices (i.e. eliminating unnecessary idling) and fleets, as set forth in §2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 Code of Federal Regulations as a mitigation measure to reduce Project related impacts from construction related exhaust emissions.

1b) <u>Project Related Operational Emissions</u>

Emissions from stationary sources and mobile sources should be analyzed separately. For reference, the District's annual criteria thresholds of significance for operational emissions are listed above.

1c) <u>Recommended Model</u>

Project related criteria pollutant emissions from construction and operational sources should be identified and quantified. Emissions analysis should be performed using CalEEMod (**Cal**ifornia **E**mission **E**stimator **Mod**el), which uses the most recent approved version of relevant Air Resources Board (ARB) emissions models and emission factors. CalEEMod is available to the public and can be downloaded from the CalEEMod website at: www.caleemod.com.

1d) <u>Project Related Operational Emissions– Truck Routing</u>

Truck routing involves the path/roads heavy-duty trucks take to and from their destination. The air emissions from heavy-duty trucks can impact residential communities and sensitive receptors.

The District recommends the County consider evaluating heavy-duty truck routing patterns to help limit emission exposure to residential communities and sensitive receptors. More specifically, this measure would assess current truck routes, in consideration of the number and type of each vehicle, destination/origin of each vehicular trip, time of day/week analysis, vehicle miles traveled and emissions. The truck routing evaluation would also identify alternative truck routes and their impacts on VMT, GHG emissions, and air quality.

1e) <u>Project Related Operational Emissions– Cleanest Available Truck</u>

The San Joaquin Valley will not be able to attain stringent health-based federal air quality standards without significant reductions in emissions from heavy-heavy duty (HHD) Trucks, the single largest source of NOx emissions in the San Joaquin Valley. The District recently adopted the 2018 PM2.5 Plan, which includes significant new reductions from HHD Trucks, including emissions reductions by 2023 through the implementation of the California Air Resources Board (CARB) Statewide Truck and Bus Regulation, which requires truck fleets operating in California to meet the 2010 0.2 g/bhp-hr NOx standard by 2023. Additionally, to meet the federal air quality standards by the 2020 to 2024 attainment deadlines, the District's Plan relies on a significant and immediate transition of heavy duty truck fleets to zero or near-zero emissions technologies, including the near-zero truck standard of 0.02 g/bhp-hr NOx established by the California Air Resources Board.

For development projects which typically generate a high volume of heavy duty truck traffic (e.g. Composting and Biomass Facilities), there are heavy duty trucks traveling to-and-from the project location at longer trip length distances for potential distribution. Since the project may exceed the District significance thresholds, the District recommends that the following mitigation measures be considered by the County for inclusion in the Environmental Impact Report for project related operational emissions.

- Advise fleets associated with Project operational activities to utilize the cleanest available HHD truck technologies, including zero and near-zero (0.02 g/bhp-hr NOx) technologies as feasible.

- Advise all on-site service equipment (cargo handling, yard hostlers, forklifts, pallet jacks, etc.) to utilize zero-emissions technologies as feasible.

- Advise fleets associated with future development projects to be subject to the best practices (i.e. eliminating unnecessary idling).

In addition, the District recommends that the County include mitigation measures to reduce project related operational impacts through incorporation of design elements, for example, increased energy efficiency, reducing vehicle miles traveled, etc. More information on mitigation measures can be found on the District's website at: http://www.valleyair.org/ceqa

1f) <u>Project Related Operational Emissions– Reduce Idling of Heavy Duty Trucks</u>

The goal of this strategy is to limit the potential for localized PM2.5 and toxic air quality impacts associated with failure to comply with the state's Heavy Duty anti-idling regulation (e.g limiting vehicle idling to specific time limits). The diesel exhaust from excessive idling has the potential to impose significant adverse health and environmental impacts. Therefore, efforts to ensure compliance of the anti-idling regulation, especially near sensitive receptors, is important to limit the amount of idling within the community, which will result in community air quality benefits.

2) Voluntary Emission Reduction Agreement

If the Project is expected to have a significant impact, the District recommends the EIR also include a discussion on the feasibility of implementing a Voluntary Emission Reduction Agreement (VERA) for this Project.

A VERA is a mitigation measure by which the project proponent provides pound-for-pound mitigation of emissions increases through a process that develops, funds, and implements emission reduction projects, with the District serving a role of administrator of the emissions reduction projects and verifier of the successful mitigation effort. To implement a VERA, the project proponent and the District enter into a contractual agreement in which the project proponent agrees to mitigate Project specific emissions by providing funds for the District's incentives programs. The funds are disbursed by the District in the form of grants for projects that achieve emission reductions. Thus, project-specific regional impacts on air quality can be fully mitigated. Types of emission reduction projects that have been funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacement of old farm tractors.

In implementing a VERA, the District verifies the actual emission reductions that have been achieved as a result of completed grant contracts, monitors the emission reduction projects, and ensures the enforceability of achieved reductions. After the project is mitigated, the District certifies to the Lead Agency that the mitigation is completed, providing the Lead Agency with an enforceable mitigation measure demonstrating that project-specific regional emissions have been mitigated to less than significant. To assist the Lead Agency and project proponent in ensuring that the environmental document is compliant with CEQA, the District recommends the Draft EIR includes an assessment of the feasibility of implementing a VERA.

3) Health Risk Screening/Assessment

A Health Risk Screening/Assessment identifies potential Toxic Air Contaminants (TAC's) impact on surrounding sensitive receptors such as hospitals, daycare centers, schools, work-sites, and residences. TAC's are air pollutants identified by the Office of Environmental Health Hazard Assessment/California Air Resources Board (OEHHA/CARB) that pose a present or potential hazard to human health. A common source of TACs can be attributed to diesel exhaust emitted from both mobile and stationary sources. List of TAC's identified by OEHHA/CARB can be found at: https://ww2.arb.ca.gov/resources/documents/carb-identified-toxic-air-contaminants

The District recommends the development project(s) be evaluated for potential health impacts to surrounding receptors (on-site and off-site) resulting from operational and multi-year construction TAC emissions.

i) The District recommends conducting a screening analysis that includes all sources of emissions. A screening analysis is used to identify projects which may have a significant health impact. A prioritization, using CAPCOA's updated methodology, is the recommended screening method. A prioritization score of 10 or greater is considered to be significant and a refined Health Risk Assessment (HRA) should be performed.

   For your convenience, the District's prioritization calculator can be found at: http:www.valleyair.org/busind/pto/emission_factors/Criteria/Toxics/Utilities/PRIORITIZATION%20RMR%202016.XLS.

ii) The District recommends a refined HRA for development projects that result in a prioritization score of 10 or greater. Prior to performing an HRA, it is recommended that development project applicants contact the District to review the proposed modeling protocol. A development project would be considered to have a significant health risk if the HRA demonstrates that the project related health impacts would exceed the Districts significance threshold of 20 in a million for carcinogenic risk and 1.0 for the Acute and Chronic Hazard Indices, and would trigger all feasible mitigation measures. The District recommends that development projects which result in a significant health risk not be approved.

   For HRA submittals, please provide the following information electronically to the District for review:

   - HRA AERMOD model files
   - HARP2 files
   - Summary of emissions source locations, emissions rates, and emission factor calculations and methodology.

   More information on toxic emission factors, prioritizations and HRAs can be obtained by:

   - E-Mailing inquiries to: hramodeler@valleyair.org; or
   - The District can be contacted at (559) 230-6000 for assistance; or
   - Visiting the Districts website (Modeling Guidance) at: http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm.

4) Ambient Air Quality Analysis

An ambient air quality analysis (AAQA) uses air dispersion modeling to determine if emissions increases from a project will cause or contribute to a violation of the ambient air quality standards. The District recommends that an AAQA be performed for the Project if emissions exceed 100 pounds per day of any pollutant.

If an AAQA is performed, the analysis should include emissions from both Project specific permitted and non-permitted equipment and activities. The District recommends consultation with District staff to determine the appropriate model and input data to use in the analysis.

Specific information for assessing significance, including screening tools and modeling guidance is available online at the District's website www.valleyair.org/ceqa.

5) Cumulative Air Impacts

In addition to the discussions on the topics identified above, the District recommends the EIR also include a discussion of whether the Project would result in a cumulatively considerable net increase of any criteria pollutant or precursor for which the San Joaquin Valley Air Basin is in non-attainment. More information on the District's attainment status can be found online by visiting the District's website at: http://valleyair.org/aqinfo/attainment.htm.

6) Nuisance Odors

While offensive odors rarely cause any physical harm, they can be unpleasant, leading to considerable distress among the public and often resulting in citizen complaints.

The County should consider all available pertinent information to determine if the Project could have a significant impact related to nuisance odors. Nuisance odors may be assessed qualitatively taking into consideration of project design elements and proximity to off-site receptors that potentially would be exposed to objectionable odors. The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. Any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact. According to the District Guidance for Assessing and Mitigating air Quality Impacts (GAMAQI), a significant odor problems are defined as more than one confirmed complaint per year averaged over a three-year period, or three unconfirmed complaints per year averaged over a three-year period. An unconfirmed complaint means that either the odor/air contaminant release could not be detected, or the source/facility cannot be determined.

The District is available to assist the County with information regarding specific facilities and categories of facilities, and associated odor complaint records.

7) District Rules and Regulations

The District issues permits for many types of air pollution sources and regulates some activities not requiring permits. A project subject to District rules and regulation would reduce its impacts on air quality through compliance with regulatory requirements. In general, a regulation is a collection of rules, each of which deals with a specific topic. Here are a couple of example, Regulation II (Permits) deals with permitting emission sources and includes rules such as District permit requirements (Rule 2010), New and Modified Stationary Source Review (Rule 2201), and implementation of Emission Reduction Credit Banking (Rule 2301).

The list of rules below is neither exhaustive nor exclusive. Current District rules can be found online at: www.valleyair.org/rules/1ruleslist.htm. To identify other District rules or regulations that apply to this Project or to obtain information about District permit requirements, the applicant is strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (559) 230-5888.

7a) District Rules 2010 and 2201 - Air Quality Permitting for Stationary Sources

Stationary Source emissions include any building, structure, facility, or installation which emits or may emit any affected pollutant directly or as a fugitive emission. District Rule 2010 requires operators of emission sources to obtain an Authority to Construct (ATC) and Permit to Operate (PTO) from the District. District Rule 2201 requires that new and modified stationary sources of emissions mitigate their emissions using best available control technology (BACT).

This Project will be subject to District Rule 2010 (Permits Required) and Rule 2201 (New and Modified Stationary Source Review) and will require District permits. Prior to construction, the Project proponent should submit to the District an application for an Authority to Construct (ATC). For further information or assistance, the project proponent may contact the District's Small Business Assistance (SBA) Office at (559) 230-5888.

7b) District Rule 9510 (Indirect Source Review)

The purpose of District Rule 9510 is to reduce the growth in both NOx and PM10 emissions associated with development and transportation projects from mobile and area sources associated with construction and operation of development projects. The rule encourages clean air design elements to be incorporated into development projects. In case the proposed development project clean air design elements are insufficient to meet the targeted emission reductions, the rule requires developers to pay a fee used to fund projects to achieve off-site emissions reductions.

Per District Rule 9510 (Indirect Source Review) section 4.4.3, a development project on a facility whose primary functions are subject to District Rule 2201 or District Rule 2010 are exempt from the requirements of the rule. The District has reviewed the information provided and has determined that the primary functions of this Project are subject to District Rule 2201 (New and Modified Stationary Source Review Rule) or District Rule 2010 (Permits Required). As a result, District Rule 9510 requirements and related fees do not apply to the Project referenced above.

7c) <u>Other District Rules and Regulations</u>

The Project may also be subject to the following District rules: Regulation VIII, (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), Rule 4566 (Organic Material Composting Operations), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). In the event an existing building will be renovated, partially demolished or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants).

8) <u>District Comment Letter</u>

The District recommends that a copy of the District's comments be provided to the Project proponent.

If you have any questions or require further information, please contact Eric McLaughlin by e-mail at Eric.McLaughlin@valleyair.org or by phone at (559) 230-5808.

Sincerely,

Brian Clements
Director of Permit Services

John Stagnaro
Program Manager
BC: em

Jessica R Willis

From: Jessica R Willis
Sent: Friday, February 5, 2021 11:13 AM
To: Tom T Tucker II
Cc: Hector Guerra; Christopher P Greer
Subject: RE: NOP for the Visalia Landfill – Compost and Biomass Conversion Facility Project

Good morning Tom.

Thank you for your inquiries. I will discuss this with Hector when he returns to the office next week and one of will get back to you.

Jessica Willis
Planner IV
RMA Environmental Planning
Ph: (559) 624-7122

From: Tom T Tucker II <TTucker@tularecounty.ca.gov>
Sent: Thursday, February 4, 2021 10:23 AM
To: Jessica R Willis <JWillis@tularecounty.ca.gov>
Cc: Hector Guerra <HGuerra@tularecounty.ca.gov>; Christopher P Greer <CGreer@tularecounty.ca.gov>
Subject: RE: NOP for the Visalia Landfill – Compost and Biomass Conversion Facility Project

Good morning Jessica,

Thank you for including me in the email and meeting, agriculture is certainly going to play a part, even if very small. However, I would like to ask two main questions. I quickly reviewed this entire document but it is lengthy and I could easily misunderstand.

1. Is green waste/wood from agricultural trees, be accepted? Is it going to be generally encouraged to prevent growers from burning their removed orchards? My guess would be no to both. This is not a new co-gen type facility that includes ag but rather, to deal with urban/residential green waste along with construction materials. In some cases, ag materials being removed from properties planned for construction. Can you say which is the goal?
2. It appears there is some allowance for animal waste/products, and Cal Recycle is involved, could animal carcasses be composted here? Perhaps in their own pile? I am not sure if you are aware of our carcass disposition issues but this would help greatly if designed accordingly. Just a thought of mine. Is it in the plans?

Thanks, I would appreciate any feedback you have, even if indeterminant.

Tom Tucker
Agricultural commissioner

From: Jessica R Willis <JWillis@tularecounty.ca.gov>
Sent: Wednesday, February 3, 2021 4:59 PM
To: CDFW Tracking (R4CEQA@wildlife.ca.gov) <R4CEQA@wildlife.ca.gov>; Deel, David@DOT <david.deel@dot.ca.gov>; Mendibles, Lorena@DOT <lorena.mendibles@dot.ca.gov>; Native American Heritage Commission (nahc@nahc.ca.gov) <nahc@nahc.ca.gov>; Central RWQCB (CentralValleyFresno@waterboards.ca.gov) <CentralValleyFresno@waterboards.ca.gov>; CEQA Division (CEQA@valleyair.org) <CEQA@valleyair.org>;

randy.groom@visalia.city; Paul Bernal (Paul.Bernal@visalia.city) <Paul.Bernal@visalia.city>; Tom T Tucker II <TTucker@tularecounty.ca.gov>; Theodore Smalley <tsmalley@tularecag.ca.gov>; Tricia Stever <pstever@tulcofb.org>; Allison A Shuklian <AShuklia@tularecounty.ca.gov>; Sabrina L Bustamante <SLBustamante@tularecounty.ca.gov>; Megan M Fish <MFish@tularecounty.ca.gov>; Julieta Martinez <JMartinez2@tularecounty.ca.gov>; Gilbert Portillo <GPortillo@tularecounty.ca.gov>; Reed Schenke <rschenke@tularecounty.ca.gov>; Ross W Miller <RMiller@tularecounty.ca.gov>; Hernan Beltran Herrera <HBeltran@tularecounty.ca.gov>; Johnny Wong <jwong@tularecounty.ca.gov>; Robert Robinson (bbutterbredt@gmail.com) <bbutterbredt@gmail.com>; Julie Turner (meindiangirl@sbcglobal.net) <meindiangirl@sbcglobal.net>; Brandy Kendricks (krazykendricks@hotmail.com) <krazykendricks@hotmail.com>; Leo Sisco (LSisco@tachi-yokut-nsn.gov) <LSisco@tachi-yokut-nsn.gov>; Robert Jeff (RGJeff@tachi-yokut-nsn.gov) <RGJeff@tachi-yokut-nsn.gov>; Bianca Arias (barias@tachi-yokut-nsn.gov) <barias@tachi-yokut-nsn.gov>; Shana Powers (SPowers@tachi-yokut-nsn.gov) <SPowers@tachi-yokut-nsn.gov>; Greg Cuara (GCuara@tachi-yokut-nsn.gov) <GCuara@tachi-yokut-nsn.gov>; Samantha McCarty (SMcCarty@tachi-yokut-nsn.gov) <SMcCarty@tachi-yokut-nsn.gov>; Robert L. Gomez (rgomez@tubatulabal.org) <rgomez@tubatulabal.org>; 'Neil Peyron' <neil.peyron@tulerivertribe-nsn.gov>; 'Kerri Vera' <tuleriverenv@yahoo.com>; 'Felix Christman' <tuleriverarchmon1@gmail.com>; 'Ken Woodrow' <Kwood8934@aol.com>; Jonah J Trevino <JTrevino@tularecounty.ca.gov>; Lucas Feldstein <lbfeldstein@tularecounty.ca.gov>; 'Evan Edgar' <evan@edgarinc.org>; 'Michael Lozeau' <michael@lozeaudrury.com>; 'Hannah Hughes' <hannah@lozeaudrury.com>; 'Komalpreet Toor' <komal@lozeaudrury.com>; maya@lozeaudrury.com
Cc: Hector Guerra <HGuerra@tularecounty.ca.gov>; Cheng Chi <CChi@tularecounty.ca.gov>
Subject: NOP for the Visalia Landfill – Compost and Biomass Conversion Facility Project
Importance: High

Good afternoon.

The Notice of Preparation (NOP) for the Visalia Landfill – Compost and Biomass Conversion Facility (Project) is available for a 30-day review, beginning February 3, 2021, and ending on March 5, 2021.

The NOP is available on the Tulare County Resource Management Agency website at https://tularecounty.ca.gov/rma/index.cfm/planning-building/environmental-planning/environmental-impact-reports/visalia-landfill-compost-and-biomass-conversion-facility/.

The NOP is also available on the State Clearinghouse website at https://ceqanet.opr.ca.gov/2021020054/2

As indicated in the attached NOP, a Scoping Meeting has been scheduled for Thursday, February 18, 2021, at 1:30 p.m.

Jessica Willis
Planner IV
Tulare County Resource Management Agency
Environmental Planning Division
Ph: (559) 624-7122
Email: JWillis@tularecounty.ca.gov

March 8, 2021

Mr. Hector Guerra, Chief Environmental Planner
County of Tulare Resource Management Agency
5961 S. Mooney Blvd.
Visalia, CA 93277

Subject: Notice of Preparation for a Focused Environmental Impact Report for the Visalia Landfill - Compost and Biomass Conversion Facility SCH# 2021020054, Facility No. 54-AA-0009, Tulare County

Dear Mr. Guerra:

This office has reviewed the proposed project for the above referenced site. Based upon our review, we offer the following recommendations with this project:

1. The addition of a Compost and Biomass Conversion Facility and/or other changes may constitute a significant change to the existing Solid Waste Facility Permit. The proposed changes may require a Solid Waste Facility Permit Revision as per CCR, Title 27, Section 21570. A revised Solid Waste Facility Permit may be required prior to commencing with the new project.

2. Will the proposed composting facility be part of the existing Visalia Disposal Site as an additional activity or will it be operated independent from the landfill?

3. Will Tulare County Solid Waste operate the facility, or will the facility be operated by another entity?

4. A separate Compostable Materials Handling Facility Permit may be required as per CCR Title 14, Chapter 3.1, Section 17854.

5. How long will incoming compostable material be stored before it is processed and placed into a static pile?

6. All material shall be handled, processed, and stored to prevent odor, vectors, or other public nuisances.

Jessica Gocke REHS, DPA
Supervising Environmental Health Specialist