TULARE COUNTY
RESOURCE MANAGEMENT AGENCY

5961 South Mooney Boulevard
Visalia, CA 93277

Focused Subsequent Environmental Impact Report
Visalia Disposal (Landfill) Site and
Biogas and Compost Facility – Landfilling Operations
SCH# 2021020054

December 2023

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

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FOCUSED SUBSEQUENT ENVIRONMENTAL IMPACT REPORT
VISALIA DISPOSAL (LANDFILL) SITE AND BIOGAS AND COMPOST FACILITY – LANDFILLING OPERATIONS
(SCH NO. 2021020054)

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- *"Air Quality and GHG Technical Report for the Tulare County Solid Waste Department Compost and Bioenergy Facilities* prepared by Yorke Engineering, LLC, November 2023.

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Executive Summary

This Draft Focused Subsequent Environmental Impact Report (Draft Focused Subsequent EIR, Draft SEIR, DSEIR, SEIR, or EIR) concludes that the proposed Project's environmental determinations are consistent with and correspond to the Visalia Landfill – Compost and Biomass Conversion Facility Project (State Clearinghouse # 2021020054, adopted/certified by the Tulare County Board of Supervisors on September 27, 2022 via Resolution No. 2022-084) and the 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 are 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.

This Draft Focused Subsequent 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 SEIR (SCH# 2021020054) has been prepared by Tulare County in accordance with CEQA Guidelines Section 15120 through Section 15131 and Section 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 Section 15082, the NOP for the proposed Project was circulated for review and comment on June 13, 2023 and circulated for a 30-day comment period ending July 13, 2023. A Scoping Meeting was duly noticed and held on June 29, 2023, 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

As noted in the previously adopted/certified Focused EIR (Original Focused EIR), the County intends to develop and operate a covered aerated static pile (CASP) compost facility to comply with the upcoming SB 1383 regulations. The 36-acre biomass conversion/compost facility component will be located on the County's 634 acres Visalia Disposal (Landfill) property located at the northeast corner of Avenue 328 and Road 80, approximately one (1) mile north of

the City of Visalia. Specifically, the biomass conversion/composting operation will be 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. Also, it is anticipated that up to 300 daily haul trucks will be utilized to transport up to 1,000 TPD of organic (green-waste) feedstock material to be exclusively used for biomass conversion/ composting operations.

The landfilling component will remain unchanged from its current 2,000 TPD and its maximum of 900 daily vehicle trips per day utilized to transport landfilling materials to the landfill.

The proposed Project would increase total tonnage received by the Landfill to 3,000 tons per day (TPD) to be split between the landfill (2,000 TPD) and the biomass conversion/compost facility (1,000 TPD). It is anticipated that, over time, a maximum of 1,200 daily vehicle trips (that is, 900 vehicle trips (the current permitted trips limit) would deliver landfilling material and 300 additional haul truck trips would exclusively deliver organic material to serve as feedstock for the biomass conversion/composting operation) will be made to the Landfill site.

The composting component 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 composting component 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 component will produce electricity, heat and biochar using wood waste as fuel. This component 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).

It is noted that the proposed Project was originally addressed in the previously approved/certified Focused Environmental Impact Report (SCH No. 2021020054) Visalia Landfill – Compost and Biomass Conversion Facility project by the Tulare County Board on September 27, 2022 via Resolution No. 2022-084. However, the original project would result in the daily 2,000 TPD limit being divided by landfilling 1,000 TPD and diverting 1,000 TPD as feedstock for the biomass conversion/composting facility. The maximum 900 daily vehicle trips would be retained and no additional haul truck trips would be used to exclusively transport feedstock to the biomass conversion/composting facility. Upon further evaluation by the Tulare County Solid Waste Department, this option is not viable in the long-term (see additional discussion in Chapter 5 Alternatives, No Project Alternative).

PROJECT LOCATION

The proposed Project lies entirely within an unincorporated area of Tulare County.

SUMMARY OF CHAPTERS

"Executive Summary" summarizes the findings of this Focused SEIR and provides a summary of the contents of the SEIR.

Chapter 1. "Introduction" discusses background information, the scope and organization of this DEIR, opportunity for public participation and agency coordination, and known areas of controversy relating to the Project (as applicable).

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, analysis and determination of impact to the Chapter's specific resource, definitions, abbreviations and acronyms, and references used in each individual Chapter. Overall, 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 or the Visalia Landfill – Compost and Biomass Conversion Facility Project (SCH# 2021020054, adopted/certified by the Tulare County Board of Supervisors on September 27, 2022 via Resolution No. 2022-084).

Chapter 4. "Cumulative Impacts," describes the cumulative impact from several projects to 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 and the previously approved/certified Focused Environmental Impact Report for Visalia Landfill – Compost and Biomass Conversion Facility.

Chapter 5. "Alternatives," examines two Alternatives to the proposed Project.

- Alternative 1 - No-Project Alternative, as required by CEQA. Under this alternative, the 2,000 TPD maximum would be retained and there would be no change to the existing 900 daily vehicle trips. As approved in the Original Focused EIR, the 2,000 TPD would consist of 1,000 TPD for landfilling purposes and 1,000 TPD for biomass conversion/composting would be implemented and the maximum of 900 daily vehicle trips would be retained as currently permitted; and
- Alternative 2 - Alternate Site, reduce the maximum daily increase of haul truck trips from 300 to 150 for transport of organic material to be used exclusively as feedstock for the biomass conversion/composting component at Visalia Landfill. Rather than increase the

total number of vehicles entering the Landfill from 900 to 1,200; this Alternative would result in 1,050 daily vehicles.

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 SEIR for the proposed Project and identifies monitoring and reporting requirements (see also Table ES-1).

Chapter 9. "Document Preparation," lists key persons from the County of Tulare that contributed to preparation of the Draft SEIR 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, Public Works Staff, and preparers of technical studies, reports, memoranda, etc.

This Draft Mitigation Monitoring and Reporting Program (MMRP) has been prepared in compliance with State law and based upon the findings of the Draft Focused Subsequent Environmental Impact Report (SEIR) for the proposed Project. The Focused Environmental Impact Report (SCH# 2021020054) Visalia Landfill – Compost and Biomass Conversion Facility (including technical studies, mitigation measures, Findings of Fact, Notice of Determination, etc.) (Original Focused EIR), adopted/certified via Tulare County Board of Supervisors Resolution No. 2022-084 on September 27, 2022, has been incorporated by reference. As such, the MMRP lists mitigation measures recommended in the Draft SEIR for the proposed Project, as well as those measures adopted in the Original EIR, 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		
					Initials	Date	Remarks
3.1 AIR QUALITY							
3.1-1 The Tulare County Solid Waste Department shall mitigate 40.46 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 Department / Planning Department	County of Tulare Solid Waste Department			
3.2 BIOLOGICAL RESOURCES							
Swainson's Hawk (SWHA)							
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 Department	County of Tulare Solid Waste Department			
3.2-2 *Pre-construction Surveys*. If construction activities in the rural zone must occur between March 1 and September 15, then a qualified biologist will conduct preconstruction nest	Prior to construction-related activities.	Retention of professional biologist/ongoing monitoring/ submittal	County of Tulare Solid Waste Department	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		
					Initials	Date	Remarks
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.		of Report of Findings, if applicable					
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 if nests are discovered within the Project site, an appropriate disturbance-free buffer will be established around the nest based on local conditions and in consultation with the CDFW. 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 Department	Qualified biologist.			
Burrowing Owl (BUOW)							
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 Department	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	Prior to construction-related activities.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings,	County of Tulare Solid Waste Department and CA Dept. Fish and Wildlife	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		
					Initials	Date	Remarks
impact areas, then 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.		if applicable	(CDFW)				
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 Department 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		
					Initials	Date	Remarks
San Joaquin Kit Fox (SJKF)							
3.2-7 *Pre-construction Surveys.* Pre-construction surveys shall be conducted by a qualified biologist 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 for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (2011)*. 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, then 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 Department and CDFW	Qualified biologist			
3.2-8 *Avoidance.* Should a kit fox be found using any of the sites during preconstruction surveys, then 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 Department and CDFW	County of Tulare Solid Waste Department & 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 Department and CDFW	County of Tulare Solid Waste Department & 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		
					Initials	Date	Remarks
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 Department 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 Department and CDFW	County of Tulare Solid Waste Department & Qualified biologist			
Tricolored Blackbird (TRBL)							
3.2-12 *Pre-construction Surveys*. If construction activities must occur between February 1 and September 15, then a qualified biologist will conduct pre-construction surveys to determine	Prior to construction-related activities.	Retention of professional biologist/ongoing monitoring/submittal	County of Tulare Solid Waste Department	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		
					Initials	Date	Remarks
the presence/absence of tricolored blackbirds on and, to the extent feasible, within 500 feet of the project site, no more than 10 days prior to the start of construction. Should any tricolored blackbirds be discovered within the survey area, then the observation will be submitted to the CNDDB, and the local CDFW office (Fresno) will be contacted. Additional measures, if any, will be identified in consultation with the CDFW based on local conditions.		of Report of Findings, if applicable					
3.3 CULTURAL RESOURCES							
3.3-1 In the event that historical, archaeological, or paleontological resources are discovered during site excavation, then 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 Department 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 Consistent with Section 7050.5 of the California Health and Safety Code and (CEQA	During construction	Daily or as needed throughout the	County of Tulare Solid Waste	A qualified archaeologist			

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		
					Initials	Date	Remarks
Guidelines) Section 15064.5, if human remains of Native American origin are discovered during project construction, then 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, then the following steps must 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		construction period if suspicious resources are discovered	Department via field evaluation of the resource finds by 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		
					Initials	Date	Remarks
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 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, then all construction within a 100-foot radius of the find shall immediately cease until a qualified paleontologist determines	During construction activities.	Daily or as needed throughout the construction period if suspicious resources are discovered	County of Tulare Solid Waste Department	County of Tulare Solid Waste Department			

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		
					Initials	Date	Remarks
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 Solid Waste Department 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 Solid Waste Department determines avoidance is not feasible, then the paleontologist shall design and implement a data recovery plan consistent with applicable standards. The plan shall be submitted to the Tulare County Solid Waste Department for review and approval. Upon approval, the plan shall be incorporated into the project.							
3.7 TRIBAL CULTURAL RESOURCES							
3.9-1 In the event that historical, archaeological, paleontological, or tribal cultural resources are discovered during site excavation, then 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, a unique	During construction	Daily or as needed throughout the construction period if suspicious resources are discovered	Tulare County Solid Waste Department / 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,			

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		
					Initials	Date	Remarks
paleontological resource, or a tribal cultural resource, or to undertake data recovery, 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.				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, then 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, then the following steps must 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	During construction	Daily or as needed throughout the construction period if suspicious resources are discovered	County of Tulare Solid Waste 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 ES-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
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							

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		
					Initials	Date	Remarks
representative rejects the recommendation of the descendent.							
3.9-3 Prior to the start of construction the applicant will coordinate with the Santa Rosa Rancheria Tachi Yokut Tribe to provide a tailgate meeting to train all construction staff that will be involved with the project regarding Tribal Cultural Resources.	Prior to initiation of construction	Issuance of grading/building permit	County of Tulare Solid Waste Department / Planning Department	County of Tulare Solid Waste Department			

Chapter 1
Introduction

PROJECT SUMMARY

The County of Tulare is proposing to retain it currently permitted 2,000 ton per day (TPD) limit of solid waste material for disposal at the Visalia Disposal (Landfill) Site. – Compost and Biomass Conversion Facility (Project) and up to 900 daily vehicle trips. The proposed Project would occur in areas currently designated as future solid waste disposal cells within 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.

The proposed Project would increase total tonnage received by the Landfill to 3,000 tons per day (TPD) to be split between the landfill (2,000 TPD) and the biomass conversion/compost facility (1,000 TPD). It is anticipated that, over time, a maximum of 900 haul truck trips (the current permitted trips limit) would deliver landfilling material and 300 additional haul truck trips would deliver organic material to the biomass conversion/composting operation located within the Landfill site's existing footprint. In addition to retaining the currently permitted 2,000 TPD for landfilling, an additional 1,000 TPD maximum would be used for the biomass conversion/composting operation which includes 300 additional haul truck trips to deliver organic material to the biomass conversion/composting operation. Overall, the addition of 1,000 TPD of organic material is intended to serve as the feedstock (fuel supply/material) for the development and operation of a 2.0 mega-watt biomass conversion facility (to produce electricity, heat and biochar using wood fuel) and composting facility to comply with SB 1383 regulations.

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 2015 Update for 2014-2023 was adopted on November 17, 2015 and certified by State of California Department of Housing and Community Development (HCD) on December 9, 2015. The Housing Element 2023-2031 Update was adopted on Demember 12, 2023, and is pending approval by HCD as of the date of this SEIR. The Health and Safety Element was amended March 14, 2023, with the adoption of the 2023 Tulare County Multi-Jurisdictional Local Hazard Mitigation Plan. Also, the Visalia Landfill Master Development Plan Environmental Impact Report (EIR, SCH No. 2000051098) was prepared and subsequently adopted and certified by the Tulare County Board of Supervisors (Board) on October 23, 2001; and the Focused Environmental Impact Report (SCH No. 2021020054) Visalia Landfill – Compost and Biomass Conversion Facility adopted/certified by the Board on September 27, 2022, are incorporated herein by reference in their entirety.

SCOPE AND METHODOLOGY

This Draft Focused Subsequent EIR 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, Energy, Greenhouse Gases, Hydrology and Water Quality, Transportation, and Tribal Cultural Resources. The County of Tulare, therefore, determined that a Focused Subsequent EIR would be required for the Project. This EIR is a "Focused Subsequent EIR" that concentrates on the potentially significant impacts of the proposed Project on the environmental resources noted earlier, that is; Air Quality, Biological Resources, Energy, Greenhouse Gases, Hydrology and 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 Subsequent EIR references the Notice of Preparation (included in Appendix ("D") prepared for the Project for all other areas of impact analysis not included in this Focused Subsequent EIR

This document addresses environmental impacts to the level that they may be assessed without undue speculation (CEQA Guidelines Section 15145). This Draft Focused Subsequent Environmental Impact Report (Draft Focused Subsequent EIR, Draft SEIR, SEIR, or EIR) acknowledges this uncertainty and incorporates these realities into the methodology to evaluate the environmental effects of the proposed Project. 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

[1] California Natural Resources Agency. California Environmental Quality Act (CEQA). Sections 15002(a). Accessed July 2023 at: https://www.califaep.org/docs/CEQA_Handbook_2023_final.pdf or 2023 CEQA Statutes and Guidelines (califaep.org).

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 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]

Both subsequent and supplemental EIRs must comply with the same requirements for notice and public review as for a draft EIR (CEQA Guidelines Sections 15162[d], 15163[c]). Response to public comments and a new final EIR, findings of fact, and if necessary a statement of overriding considerations would be required. Therefore, the amount of time saved by preparing a subsequent or supplemental EIR as compared to a project EIR may not be significant

"When Is a Supplemental or Subsequent EIR Required?

When an agency has prepared a program EIR and a further discretionary approval is necessary, a subsequent or supplemental EIR is required only where the later activity, which is within the scope of the program EIR, would have effects that were not examined in the program EIR (CEQA Guidelines Section 15168[c][1]). The requirements for subsequent and supplemental review are limited in order to balance "CEQA's central purpose of promoting consideration of the environmental consequences of public decisions with interests in finality and efficiency" (*Friends*

[2] Ibid. Section 15002 (f).
[3] Op. Cit. Section 15021.

of the College of San Mateo Gardens v. San Mateo County Community College Dist. [2016] 1 Cal.5th 937, 949).

The agency must first determine, based on substantial evidence, whether the previous EIR retains some informational value (*Friends of the College of San Mateo Gardens v. San Mateo County Community College Dist.* [2016] 1 Cal.5th 937, 949). If so, the agency may prepare an initial study to determine whether the project triggers the requirements for subsequent review (PRC Section 21094[c]).

When a program EIR or project-level EIR has been certified, a subsequent EIR is not required unless (PRC Section 21166; CEQA Guidelines Section 15162):

(1) "Substantial changes are proposed in the project which will require major revisions" to the EIR "due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects";

(2) "Substantial changes occur with respect to the circumstances," and those changes will require "major revisions" to the EIR "due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects"; or

(3) "New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time" of preparation of the EIR, becomes available. Such information must show either: the project will have one or more significant effects not discussed in the previous EIR; significant effects previously examined will be substantially more severe; mitigation measures or alternatives previously found to be infeasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

If the conditions in either section (1), (2), or (3), above, are triggered, an agency must prepare a subsequent environmental document. It is important to note that although triggering any one of the sections alone would require further review, there are also multiple components within each section. For example, where substantial changes to a project are proposed, the agency is only required to prepare a subsequent EIR if those changes require major revisions to the EIR and those changes are due to new significant effects or a substantial increase in the severity of effects identified in the prior EIR. If each of the components in a section is not met, a subsequent or supplemental EIR is not required. Under those circumstances, it may be appropriate to prepare an addendum to the prior EIR instead to consider the project changes and to document the evidence supporting the agency's conclusion that the changes do not result in new or substantially more severe significant effects (CEQA Guidelines Section 15164).

A subsequent EIR could come about if an agency were attempting to use a certified EIR for a phase of a project that was not sufficiently defined when the EIR was prepared. Many agencies will designate an area in their general plan as "specific plan," assigning an amount of housing, office, commercial, or industrial uses as a lump sum for the area and leaving the physical design until later. A development project within the specific plan designation would then be required to prepare a specific plan that would include the project-level detail that could not be known at the time of EIR certification. If that project-level detail resulted in new significant impacts, then a subsequent EIR could be effective. The subsequent EIR would allow the agency to narrowly focus the subsequent analysis on the environmental impacts based on the newly available project detail.

If the requirements for a subsequent EIR are triggered, but "[o]nly minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation," an agency may decide to prepare a supplemental EIR rather than a subsequent EIR (CEQA Guidelines Section 15163[a]). Either type of EIR may conclude that there will be new significant unavoidable impacts, in which case the lead agency must adopt a statement of overriding considerations."[4] "Instrumental to the discussion would be the findings of fact from the EIR that highlighted the significant impacts and any impacts that were considered significant and unavoidable. Impacts such as those related to parkland, recreation, and public services that may have been dismissed with an entirely nonresidential project may result in a new significant impact because of the new design. If new impacts are significant, then a supplemental or subsequent EIR should be prepared to address the new impact. If the impacts were previously identified, then the analysis would need to determine if the addition of the apartments would result in a "substantial increase" in the severity of the impact. The term "substantial increase" is not defined in CEQA; therefore, each agency must interpret the term and support its interpretation with substantial evidence.

Determining in a particular situation whether it is appropriate to prepare a subsequent or supplemental EIR is a project-specific consideration, based on many factors. If an agency is required under PRC Section 21166 and CEQA Guidelines Section 15162 to conduct subsequent environmental review under a program EIR, the agency should proceed pursuant to PRC Section 21094 and CEQA Guidelines Section 15168 or 15152. The agency must prepare an initial study to consider whether the later project may cause significant effects that were not examined in the program EIR (PRC Section 21093[c]). The later report does not need to consider effects that were mitigated or avoided in the program EIR, or effects that were analyzed at a sufficient level of detail in the program EIR to enable those effects to be mitigated or avoided by site-specific revisions, the imposition of conditions, or by other means in connection with the approval of the later project (PRC Section 21093[b]; CEQA Guidelines Section 15152[d]).

As noted above, the court does not place importance on the title of the EIR, but rather focuses on whether the level of analysis is commensurate with the detail of the project. The subsequent EIR and the supplemental EIR are identical in processing in that both require public circulation of the

[4] Association of Environmental Planners (AEP) CEQA Portal Topic Paper. Subsequent and Supplemental EIRs and Streamlining. Pages 4-6. Prepared July 2021. Accessed September 2023 at: https://ceqaportal.org/tp/Subsequent%20and%20Supplemental%20EIRs%20and%20Streamlining%207.23.21_final4.pdf or AEP white paper - Subsequent Environmental Review and Streamlining (00575964).DOCX (ceqaportal.org)

draft document, response to comments, etc. Where they differ is in the magnitude of change between the project evaluated in the certified EIR and the one being proposed. If major changes to the original project description are required that would create more of an impact on the environment, then a subsequent EIR is appropriate. If new information is all that is needed to allow the newly proposed project to use the existing certified EIR, then a supplement to the original document would suffice. These determinations are necessarily specific to the project and the lead agency."[5]

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."[6] (See Chapter 7)

This Draft Focused SEIR 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."[7] Significant impacts must be determined by applying explicit significance criteria to compare the future plan conditions to the existing environmental setting.[8]

The existing setting is described 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. As previously noted, this SEIR is also relying on previously adopted environmental documents including: the Visalia Landfill Master Development Plan Environmental Impact Report (EIR, SCH No. 2000051098, adopted and certified by the Tulare County Board of Supervisors (Board) on October 23, 2001; and the Focused Environmental Impact Report (SCH No.

[5] Ibid. 6.
[6] CEQA Guidelines. Section 15002 (h).
[7] Public Resources Code. Section 21068.
[8] CEQA Guidelines.Section 15126.2(a).

2021020054) Visalia Landfill – Compost and Biomass Conversion Facility was adopted/certified by the Board on September 27, 2022. These documents are incorporated herein by reference in their entirety.

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."[9]

PROJECT DESCRIPTION MODIFICATIONS

Proposed Project

The proposed Project consists of a new permit for the Visalia Disposal Site (Visalia Landfill or Landfill) – Compost and Biomass Conversion Facility Project. This Focused Subsequent EIR will address a new standalone permit (for a biomass conversion/composting facility) in addition to retaining the current landfill permit from the California Department of Resources Recycling and Recovery (CalRecycle). The Landfill is currently permitted to receive up to 2,000 TPD of solid waste and 900 vehicles per day. It is the County's desire to increase its overall daily solid waste tonnage and daily vehicle limit to avoid violating its current permit from exceeding both daily tonnage and vehicle limits by requesting a standalone permit (within the existing footprint of Visalia Landfill) for the biomass conversion/composting facility and associated haul trucks that would transport biomaterial to be exclusively used for biomass conversion/composting purposes. As such, the County is proposing to:

[9] CEQA Guidelines. Section 15126.2.

- Increase the Landfill's total daily permitted tonnage of solid waste to 3,000 TPD. The County proposes to increase its total daily landfill tonnage by diverting 1,000 TPD of daily organic waste material to be used for biomass conversion/composting and maintaining its 2,000 TPD of solid waste toward landfilling. It is anticipated that the composting component of the biomass conversion/composting facility would reach its planned maximum of 200,000 TPY over the course of 13 years and would be constructed in four phases of 50,000 TPY; and

- Increase the Landfill's daily permitted vehicles trips by 300 vehicles/day (haul trucks) to 1,200 total vehicles/day. The County's current permit allows a daily limit of 900 total vehicles/day (it currently averages approximately 600 vehicles/day). Allowing the additional 300 vehicles (haul trucks)/day would provide a comfortable margin from its current limit of 900 vehicles/day. The increase of 300 haul trucks/day would be incremental over a 13-year period to coincide with full build-out and operation of the biomass conversion/composting facility.

It is noted that the proposed increases will not impact the permitted capacity of the Landfill's solid waste materials; rather, the proposed increase is limited to organic material that will be utilized exclusively as feedstock for the biomass conversion/composting facility. By diverting compostable organic material (e.g., feedstock such as green waste, wood waste, and residential organics), the Landfill's total solid waste stream will decrease over time thereby complying with the objectives of SB 1383 to reduce methane emissions. This would ultimately result in up to 200,000 TPY of diverted organic waste thereby extending the lifespan of the Landfill to accommodate future solid waste that would not qualify as suitable feedstock for biomass conversion/composting production.

Finding of No Additional Significant Environmental Impacts / Finding of Consistency with the Focused Environmental Impact Report (SCH# 2021020054) Visalia Disposal (Landfill) Site Biogas and Compost Facility (Original EIR)

Following is a summary of the resources addressed or not addressed in this Focused SEIR. More details are provided in Chapter 3 for each resource noted.

<u>Resources with No Impact</u>

The Project in the Original EIR did not require discussion/analysis/determination of the following resources as the nature of the proposed Project would result in no-to-less than significant impacts:

Aesthetics
Agricultural & Forestry Resources
Hazards & Hazardous Materials
Land Use & Planning
Mineral Resources
Noise
Population and Housing

Public Services
Recreation
Utilities & Service Systems
Wildfire

Resources with No Change in Impact

The following resources were discussed/analyzed/determined in the Original EIR which concluded that the proposed Project would result in less than significant impacts with mitigation. As the Focused Subsequent EIR (Focused SEIR) will not result in any less or more significant impacts, they are nonetheless discussed in this Focused SEIR:

Biological Resources
Tribal Cultural Resources

Resources with No Significant Impact

Although the following resources will not be significantly impacted; they are discussed in this Focused SEIR:

Air Quality (See Chapter 3.1)
Biological Resources (See Chapter 3.2)
Energy (See Chapter 3.3)
Greenhouse Gases (See Chapter 3.4)
Hydrology and Water Quality (See Chapter 3.5)
Transportation (See Chapter 3.6)
Tribal Cultural Resources (See Chapter 3.7)

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.

(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."[10]

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).

[10] 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 in the NOP (see Appendix "D") and determined to have no or less than significant impacts. 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 containing technical studies (e.g., evaluations, reports, memoranda, etc.) have been included as reference material.

ENVIRONMENTAL REVIEW PROCESS

Pursuant to CEQA Guidelines Section 15082, the Notice of Preparation (NOP) for the Proposed Project was circulated for review and comment on June 13, 2023 and circulated for a 30-day comment period. Tulare County RMA received four (4) comments on the NOP. Comments were received from the following agency(ies), individual(s), and/or organization(s):

California Native American Heritage Commission, June 16, 2023;
California Department of Fish and Wildlife, July 20, 2023;
State Water Resources Control Board, July 24, 2023; and
San Joaquin Valley Unified Air Pollution Control District, July 13, 2023.

A copy of the NOP is included in Appendix "D", 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."[11]

A scoping meeting was duly noticed in a newspaper of general circulation and held on June 29, 2023. 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 Section 15105 (a), a Draft EIR that is submitted to the State Clearinghouse shall have a minimum review period of 45 days. This *Draft Focused Subsequent EIR* was circulated publicly for comment beginning on December 29, 2023. Following completion of the 45-day public review period ending on February 12, 2024, 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 Notice of Determination will then be filed with the County of Tulare County Clerk and also forwarded to the State of California Natural Resources Agency, Governor's Office of Planning and Research, State Clearinghouse.

[11] CEQA Guidelines. Section 15103.

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 Department of Water Resources (DWR)
7) California Environmental Protection Agency
8) California Energy Commission (CEC)
9) California Integrated Waste Management Board (CalRecycle)
10) California Native American Heritage Commission (NAHC)
11) California Public Utilities Commission (PUC)
12) California State Water Resources Control Board (SWRCB)
13) Central Valley Regional Water Quality Control Board (RWQCB)– Region #5
14) San Joaquin Valley Unified Air Pollution Control District (SJVAPCD)
15) U.S. Department of Agriculture (Natural Resources Conservation Service (NRCS))
16) U.S. Fish and Wildlife Service (USFW)
17) U.S. Naval Facilities Engineering Command (NAVFAC)

Other Agencies

18) City of Visalia
19) Tulare County Agricultural Commissioner and Sealer
20) Tulare County Association of Governments
21) Tulare County Health and Human Services Agency, Environmental Health Division
22) Tulare County Farm Bureau
23) Tulare County Local Agency Formation Commission
24) Tulare County Office of Emergency Services
25) Tulare County Resource Conservation District
26) Tulare County Resource Management Agency:
    a. Tulare County Fire
    b. Tulare County Flood Control
    c. Planning Branch (Environmental Planning, Project Review, Building and Housing Divisions)
    d. Public Works Branch
27) Tulare County Sheriff's Office
28) 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 Subsequent Environmental Impact Report (Draft Focused SEIR or Focused SEIR) to evaluate the environmental effects associated with the development of a biomass conversion/composting facility within the Visalia Disposal (Landfill) Site. It is noted that the County of Tulare (County) is not amending its existing permit for the Visalia Disposal (Landfill) site. Rather, the County is proposing a new, standalone permit for the biomass conversion/composting facility to exclusively receive 1,000 TPD of organic material as feedstock and 300 haul truck trips per day to transport the organic material to the Landfill site's biomass conversion/composting facility. It is anticipated that the landfilling operations at the Landfill will not change, that is, it will still be permitted to receive a maximum of 2,000 TPD of landfilling material and 900 vehicle trips per day. When combined with the biomass conversion/composting facility's tonnage and vehicle trips, the Landfill will cumulatively receive a maximum of 3,000 TPD of material and 1,200 vehicle trips. To summarize, the overall objective of the proposed Project is the addition of organic material and haul truck trips for the development and operation of a 2.0 mega-watt biomass conversion facility (to produce electricity, heat and biochar using wood fuel) and composting facility to comply with SB 1383 regulations.

PROJECT LOCATION

As noted earlier, the proposed Project will be located on the existing Visalia Disposal (Landfill) 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 following approval from CalRecycle of a standalone permit for an additional 1,000 TPD maximum (to be exclusively used for the biomass conversion/composting operation) and 300 additional haul truck trips (to deliver pre-biomass conversion/composting feedstock material), which is the subject matter of the NOP and this draft Focused SEIR. No expansion of the existing footprint is being

proposed. The site is surrounded by intensive agricultural operations. A recently (2023) removed orchard (formerly walnuts) and currently vacant agricultural land 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

As noted in the previously adopted/certified Focused EIR (Original Focused EIR), the County intends to develop and operate a covered aerated static pile (CASP) compost facility to comply with the upcoming SB 1383 regulations. The 36-acre biomass conversion/compost facility component will be located on the County's 634 acres Visalia Disposal (Landfill) property. Specifically, the biomass conversion/composting operation will be 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. Also, it is anticipated that up to 300 daily haul trucks will be utilized to transport up to 1,000 TPD of organic (green-waste) feedstock material to be exclusively used for biomass conversion/composting operations.

The landfilling component will remain unchanged from its current 2,000 TPD and its maximum of 900 daily vehicle trips per day utilized to transport landfilling materials to the landfill.

Project Construction

The biomass conversion/composting component will remain as previously described and analyzed in the original Focused EIR. The difference between the previously adopted/certified EIR and this Focused Subsequent EIR regarding the biomass conversion/composting component is rather than using 1,000 TPD of the Landfill's permitted maximum of 2,000 TPD, it would have its own dedicated 1,000 TPD. It would also include an additional 300 daily vehicles (haul trucks) that would directly transport organic material to be exclusively used as feedstock for the biomass conversion/composting operation rather than diverting from the Landfill's current permitted maximum of 900 vehicles per day. The 300 additional daily vehicles would increase the maximum number of daily vehicles to 1,200. No other changes to this component of the proposed Project are anticipated.

As noted in the previously adopted/certified Focused EIR, and still applicable/operative for this Focused Subsequent EIR, temporary construction-related 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 biomass conversion/composting 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 biomass conversion/composting 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.

To reiterate, this Draft Focused Subsequent EIR only addresses the additional maximum of 1,000 TPD of organic (green-waste) material to be used as feedstock for the biomass conversion/composting facility and the additional 300 vehicles (haul trucks) that will be utilized to transport organic material to be exclusively used as feedstock for the biomass conversion/composting facility.

Figures 2-1, 2-2, 2-3, and **2-4** (from the original Focused EIR and included herein) remain applicable as they accurately depict the proposed Project's location on a state and regional scale, its localized location relative to Tulare County, generalized locations where composting operations and landfill operations will occur, and site plan scale perspective of where biomass conversion/composting and landfill operations will occur; respectively.

Utilities

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

Water Supply

Three 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 had a historical yield ranging from approximately 400 to 900 gallons per minute (GPM). This well is currently used for the landfilling operations. The average daily water use for the landfilling operations is approximately 118,000 gallons per day (GPD). As noted below, the Cotton Gin Well is failing and has been replaced with a new well to assume its role as the water supply source for dust control during landfilling operations.

Water demand for the composting operations will remain unchanged. As noted earlier, the proposed Project is an additional 1,000 TPD maximum (to be used for the biomass conversion/composting operation), and 300 additional haul truck trips (to deliver organic (green waste) feedstock material to the biomass conversion/composting operation). As noted in the previously adopted/certified Focused EIR, the typical water used for a summer day for an average 400 TPD (or 100,000 TPY) at the CASP compost facility is 40,000 GPD. The typical summer day for an average 800 TPD at the CASP compost facility would be 80,000 GPD.

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 historical 400 to 900 GPM yield was sufficient to accommodate this demand; however, the Cotton Gin Well is beginning to fail (additional discussion is provided below). 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. Also, a 60,000-gallon dedicated water tank for fire fighting/control purposes will be located within the compost facility operating area.

Via an Emergency Declaration (Resolution No. 2022-0625) by the Tulare County Board of Supervisors (Board) on July 19, 2022, the Solid Waste Department was authorized to secure a well drilling company to construct a new, replacement well at the Visalia Landfill. Due to its emergency status, pursuant to Title 14 of the California Code of Regulations, Section 15269(c) and Public Resources Code Section 21080(b)(4).

Figure 2-1
Regional Location Map

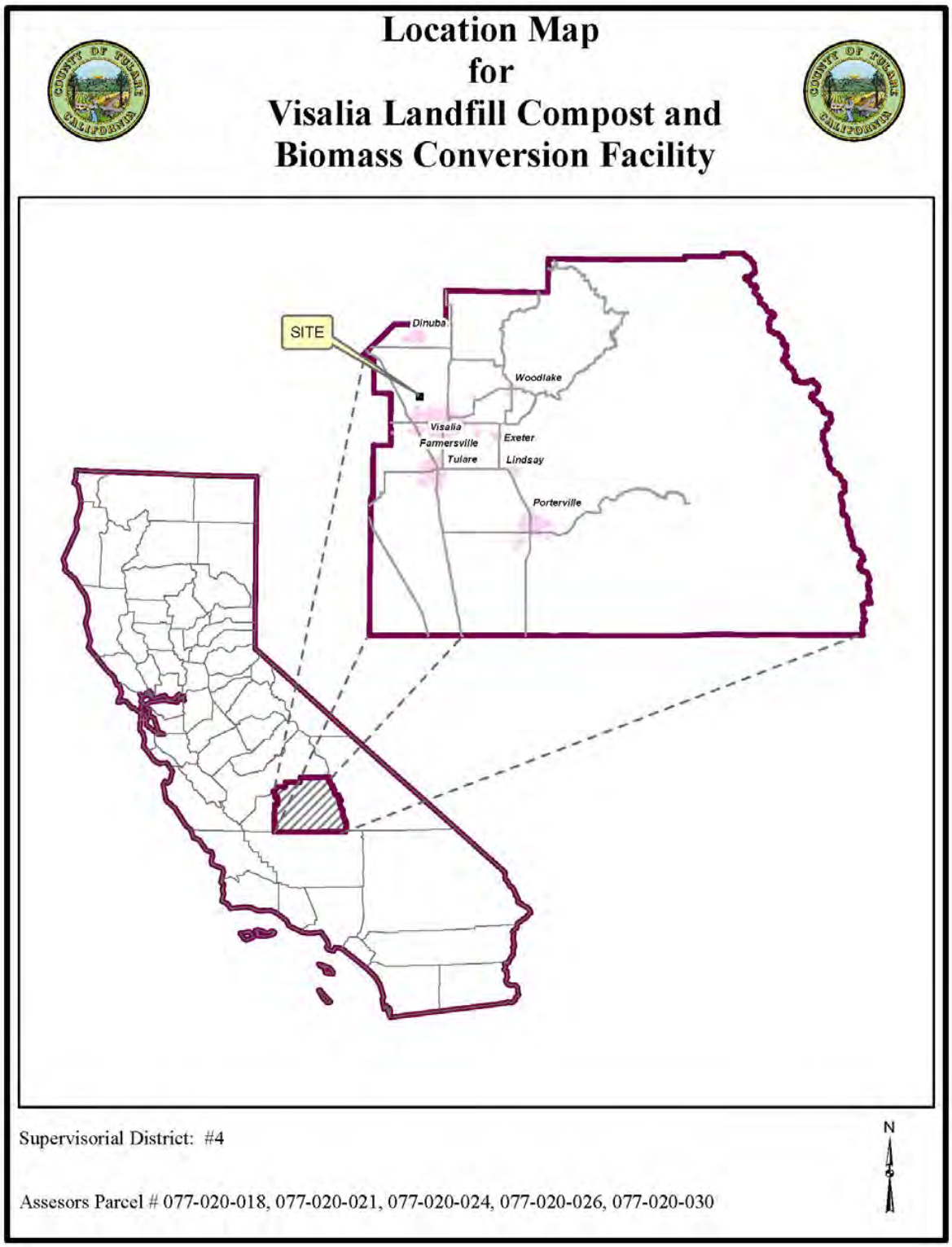


Figure 2-2
Local Vicinity Map

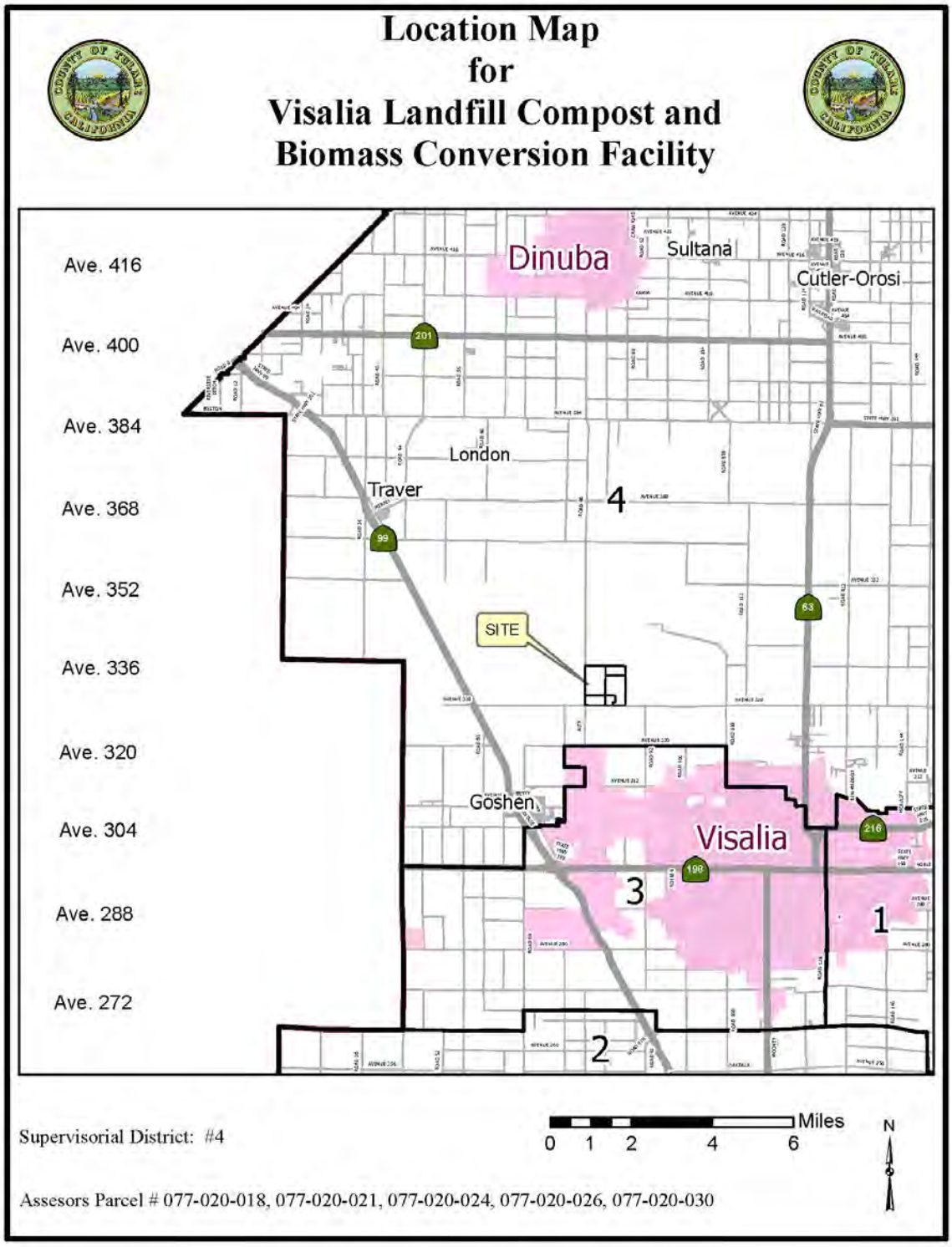


Figure 2-3
Aerial Project Site Map

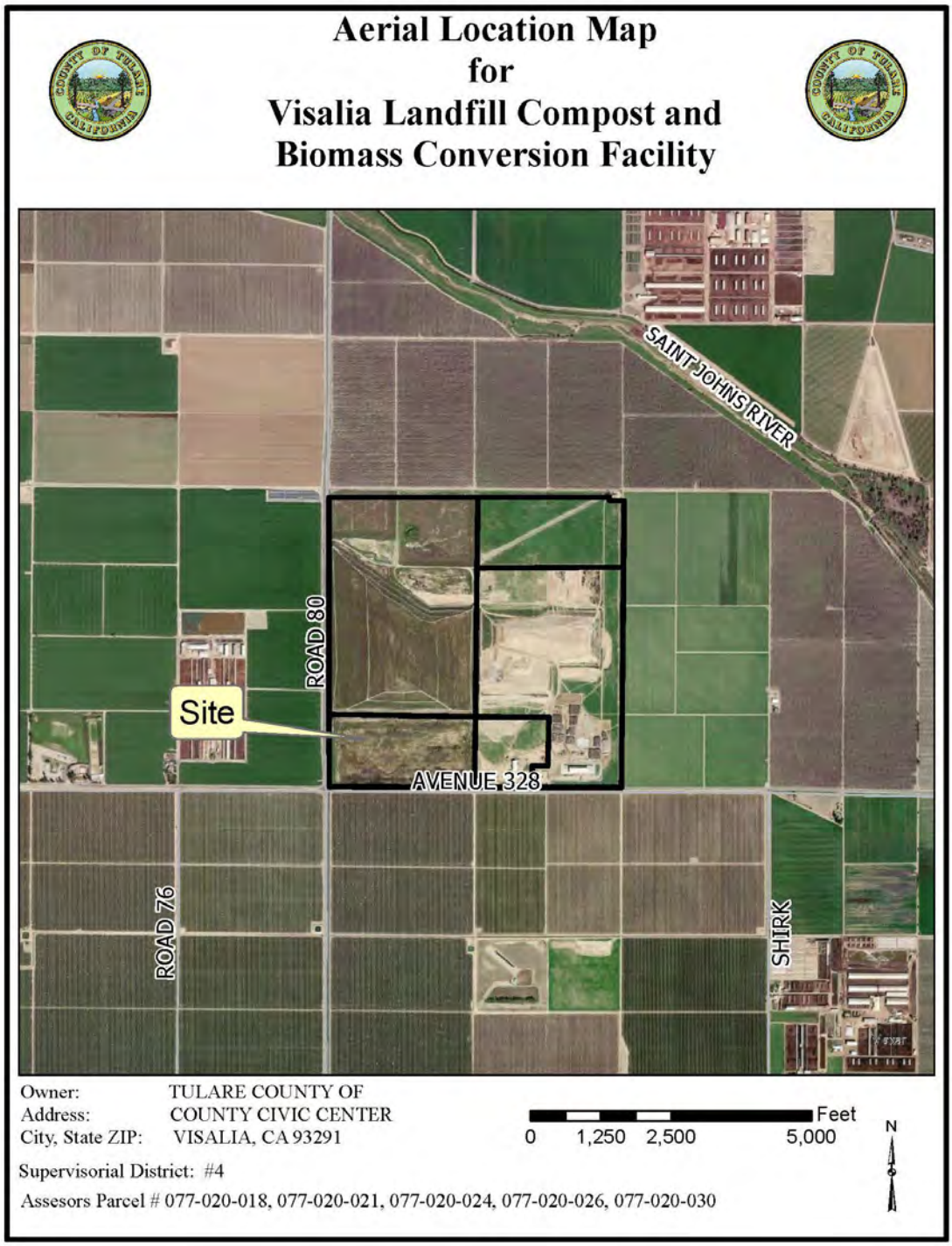
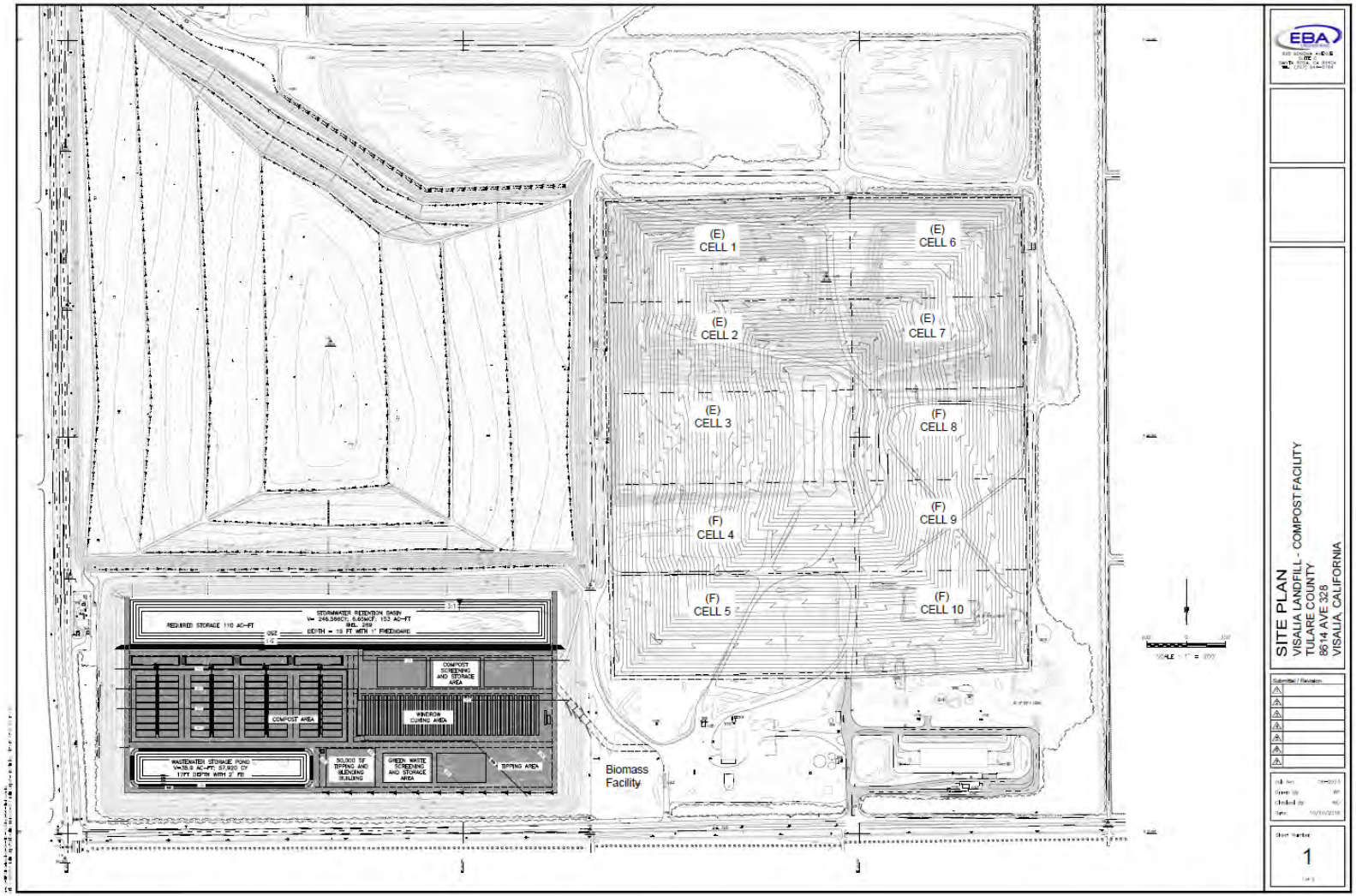


Figure 2-4
Entire Visalia Landfill Site Plan



The new, replacement well would replace an existing failing/underproducing well (the "Cotton Gin Well") with a production capability (yield) at least equivalent to the Cotton Gin Well. Preliminary design of the well anticipates a yield capability of 700 gallons per minute (gpm), a depth of 500 feet, and powered by a 50-horsepower electric motor. No additional piping will be constructed. The new replacement well would be installed to relieve the burden on the two existing wells as, based on repairs, current pumping rates will eventually collapse the failing/underproductive Cotton Gin Well. An overhead fill from the Cotton Gin Well will be connected to the new well. The failing/underproducing Cotton Gin Well would remain operational to only supply water to the buildings and would no longer be used to draw water for usage for dust control purposes. If operated continuously over a 24-hour period, the replacement well would have the capability to produce approximately 3.09-acre feet per day (ac./ft./day) of water. The disposal site (landfill) operates 10 hours per day, (six days per week or approximately 313 days per year); as such, the new well would realistically be used 41.67% of the 24-hour period. This results in approximately 1.28 (3.09 X 47% = 1.28) ac./ft./day of water for 313 days/year thereby resulting in approximately 401-acre feet per year of water. The failing/underproducing Cotton Gin Well has the capacity to yield 400-900 gpm of water. Historically, the Cotton Gin Well provided 118,000 gallons per day (gpd) (or approximately 0.362 ac./ft./day) of water primarily used at the landfill for dust control purposes. However, the proposed Project is estimated to use approximately 40,000 to 80,000 additional gallons per day for the biomass conversion/composting component resulting in total water usage from both landfilling operations AND the biomass conversion/composting component of 158,000 to 198,000 gpd (or approximately 0.48 to 0.61ac./ft./day).[1] If it remains in use over the course of a year, the Cotton Gin Well would need to yield approximately 150.25 to 191.0 ac./ft./yr. to fulfill landfill dust control water needs.

As noted in the previously adopted/certified Focused EIR, regardless of using water yielded from the new well or the Cotton Gin Well, it was anticipated that the proposed on-site stormwater storage pond could supply approximately 15% – 30% of the annual water demand.[2] This results in a water savings of between 23,700 to 47,400 gpd thereby reducing total water usage to 16,300 to 32,600 gpd. Thus, overall water usage would result in approximately 134,300 gpd to 150,600 gpd (or approximately 0.42 to 0.46 ac./ft./day) and an annual (that is, 313 operational days) usage of approximately 131.5 to 144 ac./ft./yr. Applying the water savings (that is, 15% – 30%) to the new well, if the well were to yield 100% of its maximum producing capacity, would result in an annual usage of 341 to 281 ac./ft./yr. However, realistically, it is reasonable to use the same usage figures (150.25 to 191.0 ac./ft./yr.) for the new well which will merely replace water previously produced by the Cotton Gin Well for dust control purposes at the landfill. Conservatively, it is also reasonable to include an additional acre-foot of water (326,000 gallons/year or 1,042 gpd) for the 313 days the landfill is operating. It is noted that the 326,000 gpy is twice the amount a typical single-family home would use per day.[3]

[1] "Report of Composting Site Information. Visalia Landfill Composting Facility 8614 Avenue 328, Visalia, CA 93291-8856." K. Water Supply. Page 2. Included in Appendix "D" of the Draft EIR.

[2] Ibid. 22

[3] California Department of Water Resources. Glossary. Acre-foot (af). Accessed June 2022 at: https://water.ca.gov/Water-Basics/Glossary

As such, the failing/underproducing Cotton Gin Well previously produced 150.25 to 191 acre/feet/year of water. The previously drawn water would instead be drawn from the new well resulting at the same rate as the Cotton Gin Well resulting in no net increase (or decrease) in yield of acre/feet per day or year. The resulting increase in water usage would allow the Visalia Landfill to meet dust control requirements from agencies such as the Valley Air District's Regulation VIII (Fugitive PM10 Prohibitions) and CalRecycle. Therefore, the proposed Project (that is, retaining the 2,000 TPD for landfilling and 1,000 TPD for the biomass conversion/composting component) will result in an overall increase in water demand by16,300 to 32,600 gpd (15.65 to 31.30 ac/ft./yr.) because of a 15% – 30% water savings due to re-using stormwater during the composting process. This usage is equivalent to approximately 31 to 62 single-family homes over the course of a year.

Sewer Service

There is no public wastewater service or septic system on the biomass conversion/compost facility 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 biomass conversion/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 to 48 hours prior to disposal at the landfill.

Site Access, Circulation and Fire Safety

Both the landfilling and biomass conversion/composting components of the proposed Project would be accessed from Avenue 328 via an entry roadway that services the landfill site. There would be no increase in the current tons traffic permit limits stated in the Solid Waste Facility Permit for landfilling purposes (i.e., 2,000 TPD); however, as noted earlier, there would be an increase of 1,000 TPD for organic material as feedstock for the biomass conversion/compost facility. 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

The following discussion is excerpted from the previously adopted/certified Focused EIR for the Visalia Disposal (Landfill) Site and Biogas and Compost Facility. It is noted that the existing 2,000 TPD received for landfilling purposes will remain the same (i.e., neither an increase nor decrease of TPD). As such, the following discussion focuses on the biomass conversion/composting component of Visalia Landfill operations.

Compost and Biomass Conversion Facilities

Composting Facility

The following operational procedures are planned for project operation for the proposed composting facility component 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 component 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 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.

Biomass Conversion 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.

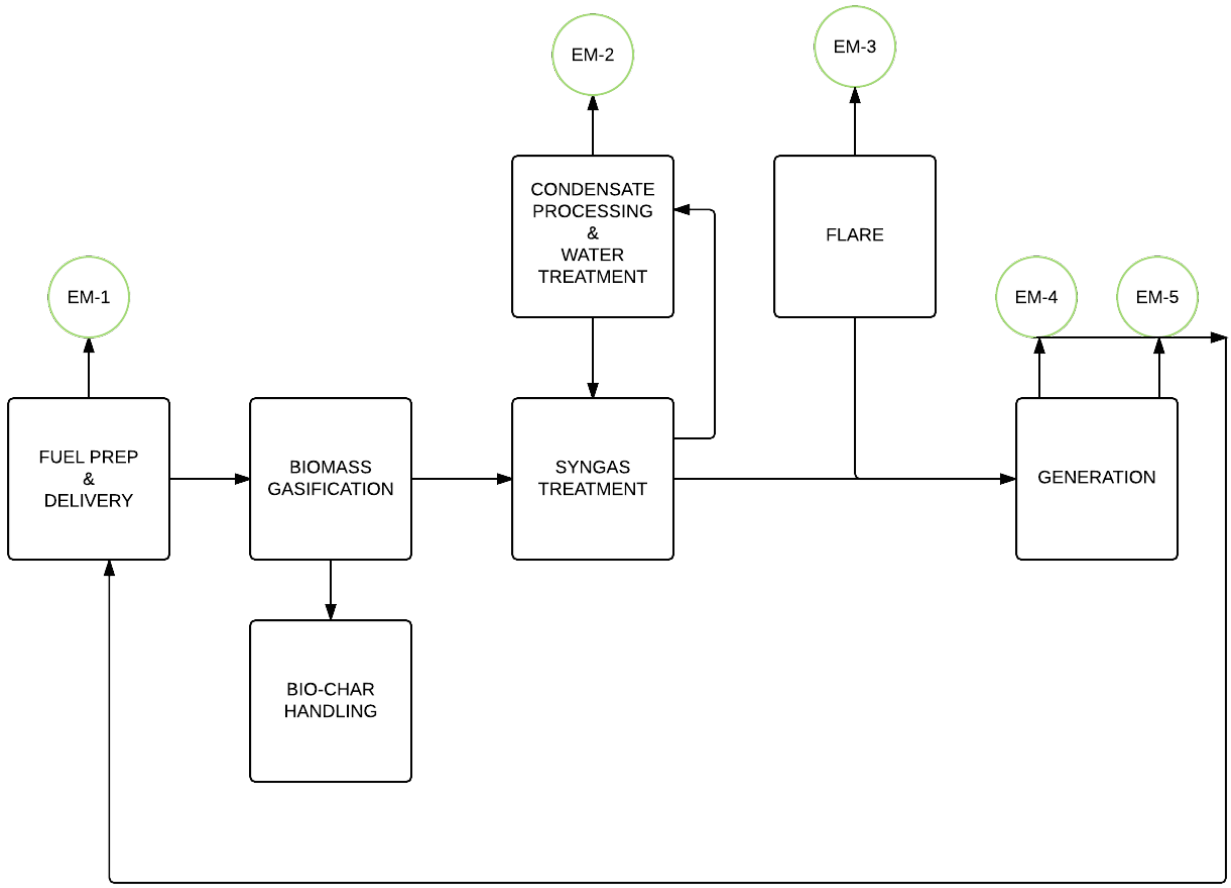
The facility will utilize approximately 18,000 bone dry tons (BDT) of wood chips per year or 25,000 tons of per year of wet recovered wood waste and produce approximately a net amount (after parasitic load) 2.0 MW of electrical energy per hour. In addition to this the facility will also produce approximately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

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 2-5
Process Overview

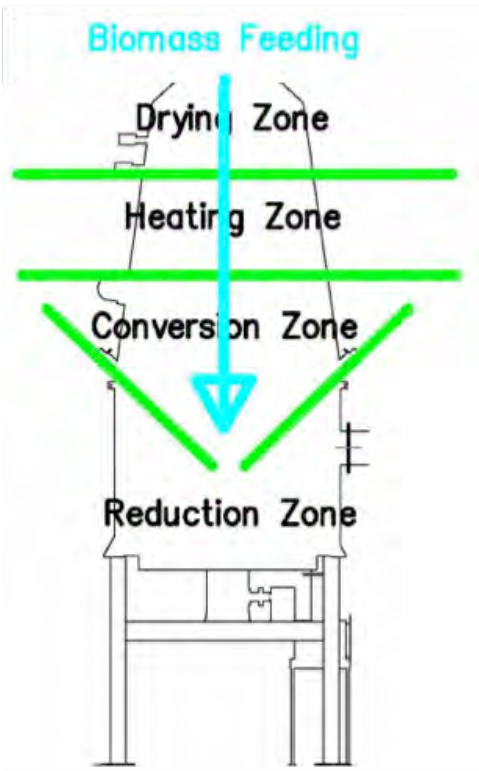


Fuel Preparation and Delivery

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.

- Secure a new, standalone permit for the biomass conversion/composting facility to exclusively receive 1,000 TPD of organic material and 300 haul truck trips per day to transport the organic material to the Landfill site. It is anticipated that the landfilling operations at the Landfill will not change, that is, it will still be permitted to receive a maximum of 2,000 TPD of landfilling material and 900 vehicle trips per day. When combined with the biomass conversion/composting facility's tonnage and vehicle trips, the Landfill will cumulatively receive a maximum of 3,000 TPD of material and 1,200 vehicle trips.
- 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***. The impact determinations in this chapter are based upon the *"Air Quality and GHG Technical Report for the Tulare County Resource Management Agency Solid Waste Department Compost and Biomass Conversion Facilities"* Report (AQ & GHG Report, included in Appendix "A" of this Draft Focused Subsequent Environmental Impact Report (SEIR)). prepared by Yorke Engineering, LLC, information obtained from the Project Description, Focused Environmental Impact Report (SCH# 2021020054) Visalia Landfill – Compost and Biomass Conversion Facility (adopted/certified by the Tulare County Board of Supervisors on September 27, 2022 via Resolution No. 2022-084), information from the San Joaquin Valley Air Pollution Control District, numerous State of California air quality-related sources that are publicly and readily available, and references listed at the end of this chapter. A detailed review of potential impacts is provided in the following analysis.

The discussions regarding Environmental Setting, CEQA requirements, Regulatory Setting, Chapter 3.1 Air Quality, Chapters 1 through 9, Appendices "A" through "E", etc., contained in the adopted/certified Focused Environmental Impact Report (SCH#2021020054) Visalia Landfill – Compost and Biomass Conversion Facility (including technical studies, mitigation measures, Findings of Fact, Notice of Determination, etc.) via Board of Supervisors Resolution No. 2022-0841, are incorporated by reference herein in their entirety, as applicable. Where necessary and if available, additional site-specific facts, data, updated information, etc., are included in this discussion.

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]

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.

[1] California Natural Resources Agency. California Environmental Quality Act (CEQA) Guidelines. Section 15126.2 (a). Accessed September 2023 at: 2023 CEQA Statutes and Guidelines (califaep.org) or 2023 CEQA Statutes and Guidelines (califaep.org).

[2] San Joaquin Valley Unified Air Pollution Control District (Air District). Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI). February 19, 2015. Accessed September 2023 at: https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF.

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.

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

[3] Tulare County General Plan 2030 Update RDEIR. Page 3.3-9. Accessed September 2023 at: http://generalplan.co.tulare.ca.us/documents/GeneralPlan2010/BackgroundReport.pdf

[4] Air District, GAMAQI. Chapter 2; and Air Quality Guidelines for General Plans, Chapter 2. Accessed September 2023 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.

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 September 2023 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 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]

SJVAB Attainment Status

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

[5] Tulare County General Plan 2030 Update RDEIR. Page 3.3-9.
[6] Air District, Ambient Air Quality Standards & Valley Attainment Status. Accessed September 2023 at: http://www.valleyair.org/aqinfo/attainment.htm.
[7] Tulare County 2030 General Plan 2030 Update. Part 1 Goals and Policies Report. Pages 9-4 to 9-5.

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.

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 September 2023 at: 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		-		
Fine Particulate Matter ($PM_{2.5}$)[9]	24 Hour	---	---	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12 µg/m^3	15.0 µg/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 µg/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 µg/m^3)	Gas Phase Chemilumi-nescence	100 ppb (188 µg/m^3)	Same as Primary Standard	Gas Phase Chemilumi-nescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)		
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	---	Ultraviolet Flourescence; Spectrophoto-metry (Pararo-saniline Method)
	3 Hour	---		---	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/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 µg/m^3	Atomic Absorption	---	---	High Volume Sampler and Atomic Absorption
	Calendar Quarter	---		1.5 µg/m^3 (for certain areas)	Same as Primary Standard	
	Rolling 3-Month Average	---		0.15 µg/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			

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]
Hydrogen Sulfide (H_2S)	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

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 September 2023 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 September 2023 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–W. Ashland Ave.; 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.

[8] Air District. GAMAQI. Page 10.

[9] Air District. 2023 Air Monitoring Network Plan. Figure 1, Page 2 and Table 5, Page 9. Accessed September 2023 at: https://ww2.valleyair.org/media/berdud2a/sjvapcd-2023-air-monitoring-network-plan.pdf

Table 3.1-4
Air Quality Monitoring Stations (as of 2023)

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	O_3, PM_{10}, $PM_{2.5}$, NO_2
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. 2023 Air Monitoring Network Plan, Figure 1 and Table 5. https://ww2.valleyair.org/media/berdud2a/sjvapcd-2023-air-monitoring-network-plan.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 2020 - 2022

Air Pollutant	Averaging Time	Item	2020	2021	2022
Ozone (O_3) [1]	1-hour	Max 1-hour (ppm)	0.127	0.119	0.114
		Days > State Standard (0.10 ppm)	7	14	8
		Days > National Standard (revoked)	1	0	0
	8-hour	State Max 8-hour (ppm)	0.103	0.098	0.099
		Days > State Standard (0.07 ppm)	37	52	64
		National Max 8-hour (ppm)	0.102	0.097	0.098
		Days > National Standard (0.07 ppm)	36	51	62
Inhalable coarse particles (PM_{10}) [1]	Annual	State Annual Average (µg/m^3)	60.5	ID	ID
		National Annual Average (µg/m^3)	59.4	51.7	43.6
	24-hour	State Max 24-hour (µg/m^3)	305.7	302.1	126.2
		Days > State Standard (50 µg/m3)	151	141	111
		National Max 24-hour (µg/m^3)	317.4	299.9	132.7
		Days > National Standard (150 µg/m^3)	19	4	0
Fine particulate matter ($PM_{2.5}$) [1]	Annual	National Annual Average (µg/m^3)	19.6	20.7	14.8
	24-hour	State Max 24-hour (µg/m^3)	136.1	129.2	48.3
		National Max 24-hour (µg/m^3)	127.1	129.2	48.3
		Days > National Standard (35 µg/m^3)	20	43	17
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)	9	ID	ID
	1-hour	State Max 1-hour (ppm)	53	50	49
		Days > State Standard (0.18 ppm)	0	0	0
		National Max 1-hour (ppm)	53.4	50.0	49.7
		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] 2020-2021 data from Visalia-N Church station; 2022 data from Visalia-W. Ashland station.
[2] There are no monitors for this pollutant in Tulare County; nearest monitor sites are in Fresno/Clovis (Fresno County) and Bakersfield (Kern County); SJVAB provides data on a weekly basis (https://www.valleyair.org/aqinfo/d-CO.htm); data not available on ARB's iADAM webpage.
[3] There are no monitors for this pollutant in Tulare County; the only monitor in the SJVAB is the Fresno-Garland site; data not available on ARB's iADAM webpage.

Sources: California Air Resources Board. Top 4 Summary. https://www.arb.ca.gov/adam/topfour/topfour1.php or *Top 4 Eight-Hour Ozone Averages (ca.gov) . Accessed September 2023.*

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 September 2023.

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 September 2023.

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]

<u>California Air Resources Board</u>

"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 September 2023at: 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

[15] CARB. On-Road Heavy-Duty Certification Program, About. Accessed September 2023 at: https://ww2.arb.ca.gov/our-work/programs/road-heavy-duty-certification-program#:~:text=The%20On-Road%20Heavy-Duty%20Certification%20Program%20certifies%20new%20incomplete,and%20electric%20vehicles%29%2C%20and%20alternative%20fuel%20retrofit%20systems. Or On-Road Heavy-Duty Certification Program | California Air Resources Board.

[16] CARB. Truck and Bus Regulation, About. Accessed September 2023 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 September 2023 at: https://ww2.arb.ca.gov/our-work/programs/use-road-diesel-fueled-fleets-regulation/about.

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:

- 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]

CARB Airborne Toxic Control Measures for Diesel Engines

"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

[18] CARB. Naturally Occurring Asbestos. About. Accessed September 2023 at: https://ww2.arb.ca.gov/our-work/programs/naturally-occurring-asbestos/about.

including military installations, prisons and jails, public schools and universities, and public water and wastewater treatment facilities."[19]

"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.

[19] CARB. Frequently Asked Questions. Airborne Toxic Control Measure for Stationary Compression Ignition Engines, Requirements for Stationary Engines Use in Non-Agricultural Applications. Accessed September 2023 at: https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/atcmfaq.pdf.

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 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

[20] Ibid. 1 and 2.

[21] Air District. About the Air District. The Air District's Mission. Accessed September 2023at: 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 September 2023.

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.

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

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

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 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 poses 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 adopted the *2022 Plan for the 2015 8-Hour Ozone Standard* on December 15, 2022. This Plan ensures expeditious attainment of the 70 parts per billion 8-hour ozone standard. This Plan satisfies Clean Air Act requirements and demonstrates that the reductions being achieved by the Air District and the ARB strategy (72% reduction in NOx emissions by 2037) ensures expeditious attainment of the 2015 8-hour ozone standard by the 2037 attainment deadline.

"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.

[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 September 2023.

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 µg/m³. 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 µg/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.

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

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

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 Resource Management Agency 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]

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

[28] Ibid. 75.

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.

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*

[29] Op. Cit. 76.

[30] "*Air Quality and GHG Technical Report for the Tulare County Resource Management Agency Solid Waste Department Compost and Biomass Conversion Facilities*" Report (AQ & GHG Report). November 2023. Prepared by Yorke Engineering, LLC. Pages 2-19 through 2-25. Included in Appendix "A" of this document.

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]

"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

[31] Air District. GAMAQI. Page 50.
[32] Ibid. 51.
[33] Op. Cit. 52.

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 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.

[34] Op. Cit. 41.

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

The discussions regarding Environmental Setting, CEQA requirements, Regulatory Setting, Chapter 3.1 Air Quality, Chapters 1 through 9, Appendices "A" through "E", etc., contained in the adopted/certified Focused Environmental Impact Report (SCH#2021020054) Visalia Landfill – Compost and Biomass Conversion Facility (including technical studies, mitigation measures, Findings of Fact, Notice of Determination, etc.) (Original EIR) via Board of Supervisors Resolution No. 2022-0841, are incorporated by reference herein in their entirety, as applicable. "*Air Quality and GHG Technical Report for the Tulare County Resource Management Agency Solid Waste Department Compost and Biomass Conversion Facilities"* Where necessary and if available, additional site-specific facts, data, updated information, etc., are included in this discussion.

The proposed SEIR changes the results of the previous Air Quality analysis/determination as contained in the Original EIR. As noted earlier, the Original EIR indicates that 1,000 TPD would be diverted from the total Landfill waste stream of 2,000 TPD. However, also as noted earlier, it is the County's desire to retain its Landfill permit to continue the 2,000 TPD waste stream to be landfilled and 900 vehicle trips per day. Further, the County is requesting a standalone permit for the biomass conversion/composting facility to be located with the Visalia Landfill site. The request is to allow 1,000 TPD of organic material and 300 haul truck trips per day to transport organic material as feedstock to the biomass conversion/composting facility. As such, the AQ emission estimates have been revised to reflect the proposed Project analyzed in this SEIR.

As indicated in the AG & GHG Study, "The Visalia Disposal Site is an existing facility that is permitted to dispose up to 2,000 TPD of waste. The proposed composting facility would have the capacity to divert up to 1,000 TPD (seasonal maximum) and 641 TPD (average) up to a maximum of 200,000 TPY from landfill to composting, and the proposed biomass conversion facility would divert up to an additional 68 TPD (25,000 TPY) from landfill to biomass conversion. Logically, diverting organic waste from the landfill will reduce emissions from the landfill. However, the landfill will 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 had the organic material been landfilled rather than composted, emissions associated with landfill operation would be the same following Project implementation as they are pre-project and are not estimated."[35] Similar to the Original EIR, the emissions from biogas conversion/composting activities/operations would be less than significant. A mitigation measure specific to air emissions (Mitigation Measure 3.1-1) is contained in the adopted/certified Original EIR and remains applicable as discussed in the proposed SEIR. In summary, the following analysis differs from the Original EIR as the biogas conversion/composting facility would be separate from the landfilling permit resulting in modified air emissions. As noted earlier, the 2,000 TPD of solid waste material currently permitted would remain unchanged resulting in the same quantity of air emissions as this tonnage and vehicle emissions would remain unchanged. As there is no change to the proposed 1,000 TPD of organic material of the Original EIR and this SEIR, there would be no changes in air emissions from the standalone biogas conversion/composting facility and less than significant haul truck (vehicle) emissions and other operations by the standalone biogas conversion/composting facility.

As discussed in further detail below, "Although it is expected that the compost and the biomass conversion 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."[36] As such, Mitigation Measure 3.1-1 as contained in the Original EIR is incorporated herein and has been revised consistent with the analysis in the AQ & GHG Report, as it remains valid/operative to this proposed Project.

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?

It is noted that the County of Tulare (County) is not amending its existing permit for the Visalia Disposal (Landfill) site. Rather, the County is proposing a new, standalone permit for the biomass conversion/composting facility to exclusively receive 1,000 TPD of organic material and 300 haul truck trips per day to transport the organic material to the Landfill site. It is

[35] "Air Quality & GHG Technical Report (AQ & GHG Report). November 2023. Page 3-1. Prepared by Yorke Engineering, LLC and included in Attachment "A" of this MND.
[36] Ibid. Page ES-1.

anticipated that the landfilling operations at the Landfill will not change, that is, it will still be permitted to receive a maximum of 2,000 TPD of landfilling material and 900 vehicle trips per day. When combined with the biomass conversion/composting facility's tonnage and vehicle trips, the Landfill will cumulatively receive a maximum of 3,000 TPD of material and 1,200 vehicle trips. Also, it is noted that the Original EIR, including applicable technical studies (e.g., air quality/greenhouse gas emissions, biological resources, etc.) and the mitigation monitoring and reporting program (MMRP) are incorporated by reference for this Focused SEIR, where applicable. As discussed in detail below, the proposed Project would have a less than significant impact to this resource item.

Project Impact Analysis: ***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 indicated in the AQ & GHG Report, "As discussed in Section 2.4-4 [in the AQ & GHG Report], 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 [in the AQ & GHG Report])."[37] As such, based on the expert opinion and substantial evidence provided by qualified consultants (Yorke Engineering, LLC), it can reasonably be concluded that the Project will 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 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.

<u>Mitigation Measure(s)</u>: ***None Required.***

<u>Conclusion</u>: ***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

[37] AQ & GHG Report. November 2023. Page 4-1. Prepared by Yorke Engineering, LLC. Included in Appendix "A" of this document.

quality violation. As noted earlier, Tulare County RMA staff agrees with the expert opinion and substantial evidence provided by qualified consultants (Yorke Engineering, LLC) and has determined that it can reasonably be concluded that the Project will result in a less than significant impact to this resource. 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?

As noted earlier, the County of Tulare (County) is not amending its existing permit for the Visalia Disposal (Landfill) site. Rather, the County is proposing a new, standalone permit for the biomass conversion/composting facility to exclusively receive 1,000 TPD of organic material and 300 haul truck trips per day to transport the organic material to the Landfill site. It is anticipated that the landfilling operations at the Landfill will not change, that is, it will still be permitted to receive a maximum of 2,000 TPD of landfilling material and 900 vehicle trips per day. When combined with the biomass conversion/composting facility's tonnage and vehicle trips, the Landfill will cumulatively receive a maximum of 3,000 TPD of material and 1,200 vehicle trips. As discussed in detail below, the proposed Project would have a less than significant impact to this resource item.

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

As indicated in the AQ & GHG Report, "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."[38]

Mass Emissions

"The SJVAPCD's thresholds of significance for criteria pollutant emissions and their application are presented in Table 4-1 [in the AQ & GHG Report, **Table 3.1-8** in this SEIR]."[39]

As indicated in the AQ & GHG Report, "As noted in Section 4.3.1.2 [of the AQ & GHG Report], daily emissions are compared to the 100 pound-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 thresholds in Table 4-2 [in the AQ & GHG Report, **Table 3.1-9** in this SEIR]. Mass-daily construction emissions are below the significance thresholds for all pollutants. 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.

[38] Ibid. 4-2.
[39] Op. Cit. 4-3.

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

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	36.0	43.2	33.6	0.06	6.81	4.12
AAQA Construction Screening Level	100	100	100	100	100	100
Exceed Level?	*No*	*No*	*No*	*No*	*No*	*No*
Project Permitted Source Emissions	31.01	264.58	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	43.89	3.11	51.29	0.29	13.56	3.16
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 [in the AQ & GHG Report, **Table 3.1-10** in this SEIR]. 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 40.46 TPY ERCs as required by SJVAPCD Rule 2202 for the compost facility (i.e., compost facility emissions exceeding the 10-ton offset threshold). With the application of VOC ERC in the amount of 40.5 TPY, the proposed Project would not exceed the significance thresholds for any pollutant."[40]

[40] Ibid. 4-4 and 4-5.

Table 3.1-10
Project Emissions Compared to Annual CEQA Emissions Thresholds[41]

Category	NO_x (TPY)	VOC (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)
Project Construction Emissions	2.46	1.83	3.48	0.01	0.38	0.17
CEQA Construction Threshold	10	10	100	27	15	15
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*
Project Permitted Source Emissions	3.98	49.37	26.57	0.54	1.76	0.85
SJVAPCD Rule 2202 ERCs	NR	40.46	NR	NR	NR	NA
Net Emissions After Offsets	3.98	9.0	26.57	0.54	1.76	0.85
CEQA Permitted Source Threshold	10	10	100	27	15	15
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*
Project Non-Permitted Source Emissions	6.85	0.49	8.00	0.05	2.11	0.49
CEQA Non-Permitted Source Threshold	10	10	100	27	15	15
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

Notes:

1. The quantity of ERCs required for the Compost Project will depend on how the facility is permitted. The quantity of ERCs required would be 40.46 TPY if the facility is permitted as part of the existing landfill and would be 61.68 TPY if permitted as a new stationary source. The lower value of 40.46 TPY is used in the significance determination as it is a more conservative approach; applying more ERC would lower the value of the 'Net emissions after offsets'. Please see Section 2.3.4 for additional details on the determination of ERC requirements. The Biomass Conversion Facility emissions will not exceed the offset threshold for any pollutant and offsets would not be required.

.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.

[41] Op. Cit. 4-5.

As indicated in the AQ & GHG Report, "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 [Significant Impact Levels] 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 on air quality. The modeling results are presented in Tables 4-4 and 4-5 [in the AQ & GHG Report, **Tables 3.1-11** and **3.1-12** in this SEIR]. A detailed modeling report is provided in Appendix F [of the AAQA, included in Appendix "A" of this SEIR.]"[42]

As noted earlier, 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 **Table 3.1-11** (Table 4-4 in the AQ & GHG Report) and **Table 3.1-12** (Table 4-5 in the AQ & GHG Report).

Tulare County RMA staff agrees with the expert opinion and substantial evidence provided by qualified consultants (Yorke Engineering, LLC) and has determined that it can reasonably be concluded that the Project will result in a less than significant impact to this resource. As such, the proposed Project is not anticipated 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.

[42] Op. Cit. 4-5 and 4-6.

Table 3.1-11
AAQA Modeling Results[43]

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	90.9	123.3	188	No
		California	34.4	133.9	168.4	339	No
	Annual	Federal	0.9	19.1	20.0	100	No
		California	0.9	19.1	20.0	57	No
CO	1-Hour	Federal	521.3	11,693.8	12,215	40,000	No
		California	521.3	11,693.8	12,215	23,000	No
	8-Hour	Federal	395.3	3,028.3	3,424	10,000	No
		California	395.3	3,028.3	3,424	10,000	No
SO_2	1-Hour	Federal	0.9	14.6	15.4	196	No
		California	0.9	43.1	44.0	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	60.5	–	20	
$PM_{2.5}$	24-Hour	Federal	See SIL Analysis	129.2	–	35	
	Annual	Federal	See SIL Analysis	20.7	–	12	
		California	See SIL Analysis	12.3	–	12	

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	0.50	5.0	No
	Annual	0.13	1.0	No
$PM_{2.5}$	24-Hour	0.50	1.2	No
	Annual	0.13	0.2	No
Fugitive PM_{10}	24-Hour	7.74	10.4	No
	Annual	1.26	2.1	No
Fugitive $PM_{2.5}$	24-Hour	1.25	2.5	No
	Annual	0.23	0.6	No

[43] Op. Cit. 4-7.

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

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 Resource Management Agency Solid Waste Department Compost and Biomass Conversion Facilities"* Report (AQ & GHG Report), which is included in Appendix "A" of this SEIR.

As indicated in the AQ & GHG Report, "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)]."[44]

"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. A 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 problem within the geographic area in which the project is located [14 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 biomass conversion 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, additional mitigation in the form of a VERA may be considered to further

[44] Op. Cit. 4-3.

reduce emissions of nonattainment pollutants and/or their precursors, consistent with SJVAPCD guidelines."[45]

"An AAQA was performed which demonstrates 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 [in the AQ and GHG Report].

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 biomass conversion facilities will operate as permitted stationary sources, the SJVAPCD's NSR program ensures that the emissions will not be cumulatively significant, per SJVAPCD guidance. Additional mitigation in the form of a VERA may be considered to further reduce emissions of nonattainment pollutants and/or their precursors, consistent with SJVAPCD guidelines."[46] Therefore, as noted earlier, Tulare County RMA staff agrees with the expert opinion and substantial evidence provided by qualified consultants (Yorke Engineering, LLC) and has determined that it can reasonably be concluded that the Project will result in a less than significant impact to this resource as the Project's incremental contribution to a cumulative effect is ***not cumulatively considerable.***

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

The Focused Environmental Impact Report (SCH# 2021020054) Visalia Landfill – Compost and Biomass Conversion Facility (including technical studies, mitigation measures, Findings of Fact, Notice of Determination, etc.) (Original EIR), adopted/certified via Tulare County Board of Supervisors Resolution No. 2022-084 on September 27, 2022, has been incorporated by reference. As such, Mitigation Measure 3.1-1 is included in this SEIR and has been updated for consistency with the analysis presented in the AQ & GHG Report (Appendix "A").

As noted in the Original EIR, 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. However, the AQ & GHG Report prepared for this Draft Focused SEIR noted, "The SJVAPCD strongly recommends the "net-zero" approach; however, this is only a guideline. According to GAMAQI, this approach results in a significantly larger NOx emissions reduction, which is the primary driver to the formation of ozone and particulate matter in the Valley. The Solid Waste Department may consider VERA mitigation for emissions of NOx, VOC, and PM10 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."[47]

[45] Op. Cit. 4-8.
[46] Op. Cit. 4-9.
[47] Op. Cit. 4-9.

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

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. Also as noted earlier, Tulare County RMA staff agrees with the expert opinion and substantial evidence provided by qualified consultants (Yorke Engineering, LLC) and has determined that it can reasonably be concluded that the Project will result in a less than significant impact to this resource. Therefore, the Project would result in ***Less Than Significant Project-specific and Cumulative Impacts*** related to this Checklist Item.

c) Expose sensitive receptors to substantial pollutant concentrations?

As noted earlier, the County of Tulare (County) is not amending its existing permit for the Visalia Disposal (Landfill) site. Rather, the County is proposing a new, standalone permit for the biomass conversion/composting facility to receive 1,000 TPD of organic material and 300 haul truck trips per day to exclusively transport the organic material to the Landfill site. It is anticipated that the landfilling operations at the Landfill will not change, that is, it will still be permitted to receive a maximum of 2,000 TPD of landfilling material and 900 vehicle trips per day. When combined with the biomass conversion/composting facility's tonnage and vehicle trips, the Landfill will cumulatively receive a maximum of 3,000 TPD of material and 1,200 vehicle trips. As discussed in detail below, the proposed Project would have a less than significant impact to this resource item.

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

As indicated in the AQ & GHG Report, "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 [in the AQ & GHG Report, **Table 3.1-13** in this SEIR].

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[48]

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

[48] Op. Cit.

potency, toxicity, quantity of emissions, and proximity to sensitive receptors such as hospitals, daycare centers, schools, worksites, and residences. If the PS [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 PS hierarchy is explained below:

- Low Score: Projects having a PS less than 1 are low risk and are not likely to have an adverse health risk.
- Intermediate Score: Projects having a PS 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 PS 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."[49]

"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 [of the AQ & GHG Report, Appendix "A" of this SEIR] and summarized in Table 4-7 [in the AQ & GHG Report, **Table 3.1-14**]. It assesses the potential health risk from the proposed Project by calculating a PS at the nearest residential and business receptors. The PS 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."[50]

Table 3.1-14
Prioritization Score[51]

Project Phase	Acute	Chronic	Cancer	Prioritization Score
Construction	—	0.0068	4.57	Intermediate
Operations	0.76	0.065	3.54	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 substantial pollutant concentrations or health risks. Therefore, the Project will have a less than significant impact on sensitive receptors."[52] Tulare County RMA staff agrees with the expert opinion and substantial evidence provided by qualified consultants (Yorke Engineering, LLC)

[49] Op. Cit. 4-10.
[50] Op. Cit.
[51] Op. Cit.
[52] Op. Cit. 4-10.

and has determined that it can reasonably be concluded that the 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 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. As noted earlier, Tulare County RMA staff agrees with the expert opinion and substantial evidence provided by qualified consultants (Yorke Engineering, LLC) and has determined that it can reasonably be concluded that the Project will result in a less than significant impact to this resource. 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, and to reiterate, Tulare County RMA staff agrees with the expert opinion and substantial evidence provided by qualified consultants (Yorke Engineering, LLC) and has determined that it can reasonably be concluded that the Project will result in a less than significant impact to this resource. Therefore, 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)?

As noted earlier, the County of Tulare (County) is not amending its existing permit for the Visalia Disposal (Landfill) site. Rather, the County is proposing a new, standalone permit for the biomass conversion/composting facility to receive 1,000 TPD of organic material and 300 haul truck trips per day to exclusively transport the organic material to the Landfill site. The landfilling operations at the Landfill will not change, that is, it will still be permitted to receive a maximum of 2,000 TPD of landfilling material and 900 vehicle trips per day. When combined with the biomass conversion/composting facility's tonnage and vehicle trips, the Landfill will cumulatively receive a maximum of 3,000 TPD of material and 1,200 vehicle trips. As discussed in detail below, the proposed Project would have a less than significant impact to this resource item.

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

The AQ & GHG Report notes, "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."[53]

"The proposed Project would potentially be new sources of odors. The proposed compost and biomass conversion 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 [Odor Impact Management Plan] 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,

[53] Op. Cit. 4-11.

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 biomass conversion 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."[54]

"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 biomass conversion facility and the distance to sensitive receptors, objectionable odors are not expected to impact a substantial number of people." [55] As noted earlier, Tulare County RMA staff agrees with the expert opinion and substantial evidence provided by qualified consultants (Yorke Engineering, LLC) and has determined that it can reasonably be concluded that the Project will result in a less than significant impact to this resource. Therefore, the proposed Project will have a ***Less Than Significant Project-specific*** impact related to emissions which cause odors.

<u>Cumulative Impact Analysis</u>: ***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 SEIR). As noted earlier, and to reiterate, Tulare County RMA staff agrees with the expert opinion and substantial evidence provided by qualified consultants (Yorke Engineering, LLC) and has determined that it can reasonably be concluded that the Project will result in a less than significant impact to this resource. As such, the Project would result in ***Less Than Significant Cumulative Impacts*** related to this Checklist Item.

[54] Op. Cit. 4-11 and 4-12.
[55] Op. Cit.

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

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

As previously noted, and to reiterate, Tulare County RMA staff agrees with the expert opinion and substantial evidence provided by qualified consultants (Yorke Engineering, LLC) and has determined that it can reasonably be concluded that the Project will result in a less than significant impact to this resource. Therefore, the Project would result in ***Less Than Significant Project-specific and Cumulative Impacts*** related to this Checklist Item.

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)
SEIR	Subsequent Environmental Impact Report
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. The following documents were used as the basis for determining this Project will result in less than significant impacts: 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 via Resolution No. 2013-0713); Focused Environmental Impact Report for the Visalia Landfill – Compost and Biomass Conversion Facility (Original Focused EIR, SCH# 20221020054, adopted/certified by the Tulare County Board of Supervisors on September 27, 2022 via Resolution No. 2022-084); a records search by Tulare County Resource Management Agency (RMA) staff of the California Natural Diversity Database (CNDDB) on June 1, 2023; and a Biological Resources Evaluation (BRE) Technical Memorandum prepared by Tulare County Resource Management Agency (RMA) staff (included in Appendix "B" of this document).

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]

[1] Natural Resources Agency. Office of Planning and Research. State Clearinghouse. California Environmental Quality Act (CEQA) Guidelines. Section 15382. Accessed September 2023 at: https://www.califaep.org/docs/CEQA_Handbook_2023_final.pdf or 2023 CEQA Statutes and Guidelines (califaep.org).

[2] California Department of Fish and Wildlife. Wildlife: Nongame: Species of Special Concern. Accessed September 2023 at: https://www.wildlife.ca.gov/Conservation/SSC#394871319-how-are-sscs-addressed-under-the-california-environmental-quality-act.

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 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 Subsequent Environmental Impact Report (Focused SEIR or SEIR) 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 Disposal (Landfill) site 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 formerly located north of the landfill property (approximately 0.85 miles north of the proposed Project) was recently removed (2023) and is land is currently vacant.

[3] Ibid.

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 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 rainwater that infiltrates the soils of the surrounding the sites.

The proposed biomass conversion/composting 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 [SCH# 2000051098] are still applicable and incorporated into this Negative Declaration [SCH# 2013081024] 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

[4] United States Department of Agriculture (USDA). Natural Resources Conservation Service (NRCS). Web Soil Survey. Tulare County, Western Part, California (CA659). Accessed September 2023 at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx or Web Soil Survey (usda.gov).

[5] Ibid. Soil Description. Calgro Series.

[6] Op. Cit. Crosscreek-Kai Series.

[7] County of Tulare. Initial Study/Negative Declaration Visalia. Landfill Waste Management Unit -1 Closure. Page 2. August 2013. SCH#2013081024. Adopted/certified by the Tulare County Board of Supervisors Resolution No. 2013-0713. September 24, 2013. Accessed September 2023 at: https://tularecounty.ca.gov/board/board-of-supervisors-meetings/ or Board of Supervisors Meetings - Board of Supervisors (ca.gov). Click on Archived Minutes, select 2013, tab to September 24, 2023, click on the three dots to download "BOS Minutes 9/24/13".

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 2013 Negative Declaration and the Original Focused EIR, this Focused SEIR also incorporates the studies, conclusions, determinations, mitigations, etc., in their entirety.

In preparation of the BRE technical memorandums prepared for the proposed Project, RMA staff accessed the CDFW's California Natural Diversity Database (CNDDB) RareFind 5 (a database querying application) and Biogeographic Information and Observation System (BIOS, a mapping application) on September 28, 2021, November 3, 2021 and December 8, 2023 to obtain biological species data for the proposed Project site and vicinity. The November 3, 2021, BRE technical memorandum (included as Appendix B of the Original Focused EIR) and the December 11, 2023, BRE technical memorandum prepared for this Draft SEIR can be found in Appendix "B" of this Draft SEIR.

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.

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."[9]

Special Status Species

The following is an excerpt from the CDFW's most recent Special Animals List document, updated October 2023:

> "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

[8] Op. Cit. 14-15.
[9] Tulare County General Plan 2030 Update. Background Report. February 2010. Page 9-22.

- 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
- 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.[10]

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."[11]

"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 [Visalia Landfill Master Development Plan, SCH# 2000051098] and subsequent ND [Visalia Landfill Waste Management Unit-1 (WMU-1) Closure Construction, SCH# 2013081024) are more than five (5) years old, the CDFW's California Natural Diversity Database (CNDDB), RareFind 5 and Biogeographic Information and Observation

[10] California Department of Fish and Wildlife. Special Animals List, October 2023. Accessed December 2023 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.

[11] California Native Plant Society. Rare Plants: Definitions. Accessed September 2023 at: https://rareplants.cnps.org/Home/Glossary or CNPS Rare Plant Inventory | Glossary

System (BIOS) mapping application were accessed to obtain current (November 2021) biological species data for the Project vicinity."[12]

"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 1 arachnid species."[13] (See Attachment D of the November 2021 Biological Technical Memorandum, included in Appendix "B" of this Draft SEIR)

"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."[14] (See Attachment C of the November 2021 Biological Technical Memorandum, included in Appendix "B" of this Draft SEIR)

"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."[15] (See Attachment B of the November 2021 Biological Technical Memorandum, included in Appendix "B" of this Draft SEIR)

Jurisdictional Waters

"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 November 2, 2021. Based on the BIOS map, jurisdictional State waters are absent from the Project site."[16] (see Attachment E of the November 2021 Biological Technical Memorandum, included in Appendix "B" of this Draft SEIR).

"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. 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 November 2021 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."[17]

[12] Draft Focused EIR, Visalia Landfill – Compost and Biomass Conversion Facility. December 2021. Appendix B, Biological Species Evaluation Technical Memorandum, November 2021, Page 3.
[13] Ibid.
[14] Op. Cit.
[15] Op. Cit.
[16] Op. Cit. Pages 3-4
[17] Op. Cit. 4

Sensitive Natural Communities

"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;
- Southern Interior Cypress Forest;
- Sycamore Alluvial Woodland;
- Valley Sacaton Grassland;
- Valley Saltbush Scrub; and
- Valley Sink Scrub."[18]

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."[19]

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

Designated Critical Habitat

[18] Tulare County General Plan 2030 Update, Recirculated Draft Environmental Impact Report. February 2010. Page 3.11-3.12.

[19] California Department of Fish and Wildlife. Habitat Connectivity Planning for Fish and Wildlife. Accessed September 2023 at: https://wildlife.ca.gov/Conservation/Planning/Connectivity.

"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*)."[20]

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

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)."[21]

"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

[20] Tulare County General Plan 2030 Update, Recirculated Draft Environmental Impact Report. February 2010. Page 3.11-3.12.
[21] Ibid. Page 3.11-2.

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."[22]

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 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."[23]

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."[24]

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."[25]

"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

[22] Op. Cit.
[23] Op. Cit.
[24] Op. Cit. 3.11-3.
[25] Op. Cit. 3.11-1.

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."[26]

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 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."[27]

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

[26] Op. Cit. 3.11-1 to 3.11.2.
[27] Op. Cit. 3.11-3.

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.)."[28]

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.)."[29]

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 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."[30]

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."[31]

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,

[28] Op. Cit.
[29] Op. Cit. 3.11-4.
[30] Op. Cit.
[31] Op. Cit.

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."[32]

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."
>
> 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.

[32] California Department of Fish and Wildlife. Raptors in California. Accessed September 2023 at: https://wildlife.ca.gov/Conservation/Birds/Raptors.

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:

The discussions regarding Environmental Setting, CEQA requirements, Regulatory Setting, Chapter 3.2 Biological Resources, Chapters 1 through 9, Appendices "A" through "E", etc., contained in the adopted/certified Focused Environmental Impact Report (SCH#2021020054) Visalia Landfill – Compost and Biomass Conversion Facility (including technical studies, mitigation measures, Findings of Fact, Notice of Determination, etc.) via Board of Supervisors Resolution No. 2022-0841, are incorporated by reference herein in their entirety, as applicable. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

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***

It is noted that the County of Tulare (County) is not amending its existing permit for the Visalia Disposal (Landfill) site. Rather, the County is proposing a new, standalone permit for the biomass conversion/composting facility to exclusively receive 1,000 TPD of organic material and 300 haul truck trips per day to transport the organic material to the Landfill site. It is anticipated that the landfilling operations at the Landfill will not change, that is, it will still be permitted to receive a maximum of 2,000 TPD of landfilling material and 900 vehicle trips per day. When combined with the biomass conversion/composting facility's tonnage and vehicle trips, the Landfill will cumulatively receive a maximum of 3,000 TPD of material and 1,200 vehicle trips. Also, it is noted that the adopted/certified Original Focused EIR(SCH# 2021020054), including applicable technical studies (e.g., air quality/greenhouse gas emissions, biological resources, cultural/tribal cultural resources, etc.) and the mitigation monitoring and reporting program (MMRP), are incorporated by reference in their entirety for this Focused SEIR. As such, the biological resources mitigation measures remain applicable.

As noted in the November 2021 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, with nearby properties having the potential for providing habitat for tricolored blackbird if certain crops are planted. 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), Visalia Landfill Waste Management Unit-1 Closure Construction Negative Declaration (SCH#2013081024), and the Original Focused EIR for the Visalia Disposal (Landfill) Site – Compost and Biomass Conversion Facility Project. However, as the Project site is currently not active (i.e., not conducting any biomass conversion-/composting-related activities (operations) or earthmoving-related activities which could disturb habitat) 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 **3.2-12** (as provided in the Mitigation Monitoring and Reporting Program (MMRP) of the Final Original Focused EIR) will be implemented.

With implementation of **Mitigation Measures 3.2-1** through **3.2-12**, 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.

Tricolored Blackbird (TRBL)

3.2-12 (Pre-construction Surveys). If construction activities must occur between February 1 and September 15, then a qualified biologist will conduct pre-construction surveys to determine the presence/absence of tricolored blackbirds on and, to the extent feasible, within 500 feet of the project site, no more than 10 days prior to the start of construction. Should any tricolored blackbirds be discovered within the survey area, then the observation will be submitted to the CNDDB, and the local CDFW office (Fresno) will be contacted. Additional measures, if any, will be identified in consultation with the CDFW based on local conditions.

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

As noted earlier, the Original Focused EIR, including applicable technical studies (e.g., biological resources.) and the mitigation monitoring and reporting program (MMRP), are incorporated by reference in their entirety for this Draft SEIR. As such, the biological resource mitigation measures remain applicable to this Draft SEIR. Therefore, ***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 U.S. 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
USACE	United States Army Corp of Engineers
USDA	United States Department of Agriculture
USDOI	United States Department of the Interior
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

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Chapter 3.3
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, Focused Environmental Impact Report (SCH# 2021020054) Visalia Landfill – Compost and Biomass Conversion Facility (adopted/certified by the Tulare County Board of Supervisors on September 27, 2022 via Resolution No. 2022-084), numerous State of California energy-related sources that are publicly and readily available, and references listed at the end of this chapter. A detailed review of potential impacts is provided in the following analysis.

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."[1]

"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."[2]

Further, an "Explanation of Proposed Amendments" contained in the Proposed Update (and now adopted amendments as of December 28, 2018) 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.

[1] State of California. Natural Resources Agency. Office of Planning and Research. Proposed Update to the CEQA Guidelines. November 2017. Page 65. Accessed September 2023 at: http://opr.ca.gov/docs/20171127_Comprehensive_CEQA_Guidelines_Package_Nov_2017.pdf

[2] Ibid. 65-66.

"The new subdivision would specifically address the analysis of a project's potential energy impacts. This addition is necessary for several reasons explained in detail below.

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 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."[3]

"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

[3] Op. Cit. 66.

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.)"[4]

Specifically, Section 15126.2 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-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."[5]

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."[6]

Existing Energy Consumption

[4] Op. Cit. 67.
[5] Op. Cit. 67-68.
[6] Tulare County General Plan 2030 Update Recirculated Draft EIR. 3.4 Energy and Global Climate Change. February 2010. Page 3.4-14 Accessed September 2023 at: http://generalplan.co.tulare.ca.us/documents/generalplan2010/RecirculatedDraftEIR.pdf.

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 2022, SCE provided 4,957.696254 gigawatt-hours (GWh) of electricity to Tulare County customers.[7] Also in 2022, SoCal Gas provided a total of 164.629109 million therms in Tulare County[8] See **Table 3.4-1**.

Table 3.3-1
Energy Demands
2022 County and State Energy Demands on Energy Providers Southern California Gas and Southern California Edison[9][10][11]

Demand by:	Electricity (in MWh) [1]	Gas (in Therms) [2]
Tulare County	4,957,696.254	164,629,109
SCE and SCG Service Areas	107,876,060.500	6,565,653,032

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 SCE 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

[7] California Energy Commission (CEC). California Energy Consumption Database. Electricity Consumption by County. Energy reports accessed December 2023 at: http://ecdms.energy.ca.gov/elecbycounty.aspx.
[8] Ibid. Gas Consumption by County. Accessed December 2023 at: http://ecdms.energy.ca.gov/gasbycounty.aspx.
[9] Op. Cit. Accessed December 2023 at: http://ecdms.energy.ca.gov/elecbycounty.aspx
[10] Op. Cit. Accessed December 2023 at: http://ecdms.energy.ca.gov/elecbyplan.aspx
[11] Op. Cit. Accessed December 2023 at: https://ecdms.energy.ca.gov/gasbyplan.aspx.

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[12]

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 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.

State of California Integrated Energy Policy (SB 1389)[13]

State of California Integrated Energy Policy (SB 1389) In 2002, the Legislature passed Senate Bill 1389, which required the 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 (IEPR) on February 20, 2014.[14] 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;

[12] CEC. 2008 Energy Action Plan. February 2008. Accessed September 2023 at: https://www.cpuc.ca.gov/industries-and-topics/natural-gas/energy-action-plans.

[13] Senate Bill 1389 (Bowen and Sher, 2002). Accessed December 2023 at: http://leginfo.ca.gov/pub/01-02/bill/sen/sb_1351-1400/sb_1389_bill_20020915_chaptered.html.

[14] CEC. Integrated Energy Policy Report – IEPR. Accessed December 2023 at: https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report.

- 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.

The CEC adopted the 2021 IEPR in February 2022. The 2021 IEPR provides policy recommendation for advancing a clean, reliable, and affordable energy system.[15] "The *2021 IEPR* is presented in the following volumes:

- **Volume I** addresses actions needed to reduce the greenhouse gases (GHGs) related to the buildings in which Californians live and work, with an emphasis on energy efficiency. It also addresses reducing GHGs from the industrial and agricultural sectors.
- **Volume II** examines actions needed to increase the reliability and resiliency of California's energy system.
- **Volume III** looks at the evolving role of gas in California's energy system.
- **Volume IV** reports on California's energy demand outlook, including a forecast to 2035 and long-term energy demand scenarios to 2050. The analysis includes the electricity, gas, and transportation sectors.
- **Appendix** assesses the benefits of California's Clean Transportation Program." [16]

<u>California Senate Bill 1037 and Assembly Bill 2021</u>[17][18]

[15] CEC. Integrated Energy Policy Report – IEPR. Accessed December 2023 at: https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report.

[16] CEC. Final 2021 Integrated Energy Policy Report. Volume I. Page 1. Accessed December 2023 at: https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2021-integrated-energy-policy-report.

[17] State of California. Senate Bill 1037 (Kehoe, Chapter 366, Statutes of 2005). Access December 2023 at: http://leginfo.ca.gov/pub/05-06/bill/sen/sb_1001-1050/sb_1037_cfa_20050624_085704_asm_comm.html.

[18] State of California. Assembly Bill 2021 (Levine, Chapter 734, Statutes of 2006). Accessed December 2023 at: http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_2001-2050/ab_2021_cfa_20060421_125425_asm_comm.html.

In 2003, the California Public Utilities Commission (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.[19] This policy also set new targets for statewide annual energy demand reductions of 32,000 GWh and 800 million therms from business-as-usual[20]—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)[21]

Assembly Bill (AB) 32 (Health and Safety Code Sections 38500–38599), 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 (CPUC) 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 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.

[19] SB 1037 (and AB 2021 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.

[20] 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.

[21] California Air Resources Board. AB 32 Global Warming Solution Act of 2006. Accessed December 2023 at: https://ww2.arb.ca.gov/resources/fact-sheets/ab-32-global-warming-solutions-act-2006.

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)[22]

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)[23][24]

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.[25] In 2011, SB X1-2 was signed, aligning the RPS target with the 33 percent requirement by the year 2020.[26] 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

[22] State of California. Senate Bill 350 (De Leon). SB-350 Clean Energy and Pollution Reduction Act of 2015. Accessed December 2023 at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350.

[23] State of California. Senate Bill 1078 (Sher, 2002). Accessed December 2023 at: http://www.leginfo.ca.gov/pub/01-02/bill/sen/sb_1051-1100/sb_1078_bill_20020912_chaptered.html

[24] State of California. Senate Bill 107 (Simitian and Perata). Accessed December 2023 at: http://www.leginfo.ca.gov/pub/05-06/bill/sen/sb_0101-0150/sb_107_cfa_20050705_133919_asm_comm.html.

[25] State of California. Executive Order S-14-08. Accessed December 2023 at: https://www.library.ca.gov/wp-content/uploads/GovernmentPublications/executive-order-proclamation/38-S-14-08.pdf.

[26] State of California. Senate Bill SB X1-2 (Simitian, Kehoe, and Steinberg, 2011). Accessed December 2023 at http://www.leginfo.ca.gov/pub/11-12/bill/sen/sb_0001-0050/sbx1_2_bill_20110412_chaptered.html.

RPS were required to adopt 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.[27]

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. 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**.

[27] State of California. Executive Order S-21-09. Accessed December 2023 at: https://www.library.ca.gov/wp-content/uploads/GovernmentPublications/executive-order-proclamation/38-S-21-09.pdf.

Table 3.3-2
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

As noted in the Original EIR, Tulare County 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

The discussions regarding Environmental Setting, CEQA requirements, Regulatory Setting, Chapter 3.4 Energy, Chapters 1 through 9, Appendices "A" through "E", etc., contained in the adopted/certified Focused Environmental Impact Report (SCH#2021020054) Visalia Landfill – Compost and Biomass Conversion Facility (including technical studies, Mitigation Measures, Findings of Fact, Notice of Determination, etc.) via Board of Supervisors Resolution No. 2022-0841, are incorporated by reference herein in their entirety, as applicable. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

The proposed Project does not substantially change the results of the Energy resource analysis/determination as contained in the original EIR. As noted earlier, the Original EIR indicates that 1,000 TPD would be diverted from the total landfill waste stream of 2,000 TPD. However; as noted earlier, it is the County's desire to retain its Landfill permit to continue the 2,000 TPD waste stream to be landfilled and acquire a standalone permit to expand its daily tonnage to 3,000 TPD (which includes 1,000 TPD of organic material to be used for composting/biogas production). By diverting 1,000 TPD of organic material from the TOTAL 3,000 TPD, the remaining 2,000 TPD (which is the Landfill's currently permitted maximum of all solid waste material) would be landfilled. Over time (when Landfill operations include both landfilling AND composting/biogas production), the 2,000 TPD of solid waste material would remain unchanged while conversely, 1,000 TPD of organic material would be diverted to

composting/biogas uses. Also, the current 900 vehicles per day entering the Landfill will remain unchanged while another 300 daily haul truck trips are requested to transport organic material (to be used as feedstock) to the biomass conversion/composting facility within the Landfill resulting in a total of 1,200 daily vehicle trips entering the entering Landfill site.

As noted in the original EIR, "…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."[28]

As the proposed components of the project regarding the biomass conversion/composting component remain unchanged from the Original EIR, the conclusions regarding electricity, and natural gas also remain unchanged. However, with the addition of 300 haul truck trips per day to transport the 1,000 TPD of organic material as feedstock for the biomass conversion/composting facility, fuel consumption will be re-evaluated in this Draft SEIR as additional fuel consumption will occur due to the increase of the additional 300 haul truck trips. As noted in the original EIR, "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 [that is, in the Original EIR]. 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."[29] Also, consistent with the Original EIR, the proposed Project would still maintain the requirement that construction-related vehicles and equipment adhere to CARB regulations regarding heavy-duty truck idling limits.

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 biogas conversion/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.

[28] Ibid. 3.4-11.
[29] Op. Cit. 12.

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.

The additional 300 haul trucks trips will increase the consumption of energy in the form of diesel fuel. The average mileage per day of the haul trucks is estimated to be approximately 27 miles (i.e., approximately 14 miles to the Fresno County line and 40 miles to the Kern County line results in an average of 27 miles). Based on an average consumption of 5.29[30] miles per gallon travelled, it is estimated that each haul truck would consume approximately 5.10 gallons per 27 miles travelled. As such, the 300 haul truck trips would result in approximately 8,100 miles travelled (i.e., 300 trips X 27 miles) consuming approximately 1,588 gallons of fuel per day (i.e.; 8,100 miles ÷ 5.10 gallons) (or 397,000 gallons/year over a 250-day work year). According to the California Energy Commission[31], an average of 2,034,000 gallons of diesel fuels was produced weekly in the State over the past two years (2021-2022), as such, the approximately 7,940 gallons (over a 5-day work week) consumed for haul truck trips to Visalia Landfill would represent approximately 0.0039% of the State's total diesel fuel production. As the proposed Project's estimated diesel fuel consumption would represent less than 1% of the total amount available throughout the State, it is reasonable to conclude that a ***Less Than Significant Impact*** to this resource would occur.

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

[30] U.S. Department of Energy. Alternative Fuels Data Center. Average Fuel Economy of Major Vehicle Categories. Accessed September 2023 at: https://afdc.energy.gov/data/10310 or Alternative Fuels Data Center: Maps and Data - Average Fuel Economy by Major Vehicle Category (energy.gov).

31 California Energy Commission. Diesel Fuel Data, Facts, and Statistics. Weekly Fuels Watch. Refinery Inputs and Production Comparison Table. 2 Years Previous. Accessed September 2023 at: https://www.energy.ca.gov/data-reports/reports/weekly-fuels-watch/refinery-inputs-and-production Refinery Inputs and Production (ca.gov)

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.

Cumulative Impact Analysis: ***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***.

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

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

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

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

See Item a), above.

Cumulative Impact Analysis: ***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.

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

See Item a), above.

Conclusion: ***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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U.S. Department of Energy. Alternative Fuels Data Center. Average Fuel Economy of Major Vehicle Categories. Accessed September 2023 at: https://afdc.energy.gov/data/10310 or Alternative Fuels Data Center: Maps and Data - Average Fuel Economy by Major Vehicle Category (energy.gov).

Chapter 3.4
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 information obtained from the Project Description, the *"Air Quality and GHG Technical Report for the Tulare County Resource Management Agency Solid Waste Department Compost and Biomass Conversion Facilities"* Report (AQ & GHG Report (prepared by Yorke Engineering, LLC), in its entirety in Appendix "A" of this Draft Subsequent Environmental Impact Report (SEIR)), the Focused Environmental Impact Report (SCH# 2021020054) Visalia Landfill – Compost and Biomass Conversion Facility (adopted/certified by the Tulare County Board of Supervisors on September 27, 2022 via Resolution No. 2022-084), information from the San Joaquin Valley Air Pollution Control District, numerous State of California greenhouse gases-related sources that are publicly and readily available, and references listed at the end of this chapter. A detailed review of potential impacts is provided in the following analysis.

INTRODUCTION

California Environmental Quality Act (CEQA) Requirements

This section of the Draft Focused Supplemental Environmental Impact Report (Draft SEIR) 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

[1] California Natural Resources Agency. California Environmental Quality Act (CEQA) Guidelines Section 15126. Consideration and Discussion of Environmental Impacts. Accessed September 2023 at: 2023 CEQA Statutes and Guidelines (califaep.org) or 2023 CEQA Statutes and Guidelines (califaep.org).

[2] Ibid. Section 15064. Determining the Significance of the Environmental Effects Caused by a Project.

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 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

[3] Op. Cit. Section 15064.4. Determining the Significance of Impacts from Greenhouse Gas Emissions.

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.

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

[4] Natural Resources Agency. Office of Planning and Research. State Clearinghouse. California Environmental Quality Act (CEQA) Guidelines. Appendix G: Environmental Checklist Form. Accessed September 2023 at: https://www.califaep.org/docs/CEQA_Handbook_2023_final.pdf or 2023 CEQA Statutes and Guidelines (califaep.org)

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 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 (NF_3) was not initially listed as a contributor to global warming 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

[5] San Joaquin Valley Air Pollution Control District (Air District). Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA. Pages 4-5. Accessed September 2023 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 2030 Update. Background Report. Pages 6-19 to 6-20. Accessed September 2023 at: http://generalplan.co.tulare.ca.us/documents/GeneralPlan2010/BackgroundReport.pdf

[7] California Air Resources Board. Assembly Bill 32 Overview – What Gases or Compounds are Covered Under AB 32? Accessed September 2023 at: http://www.arb.ca.gov/cc/ab32/ab32.htm.

[8] United States Environmental Protection Agency. Sources of Greenhouse Gas Emissions – Overview. Accessed September 2023 at: https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions.

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.
- **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.

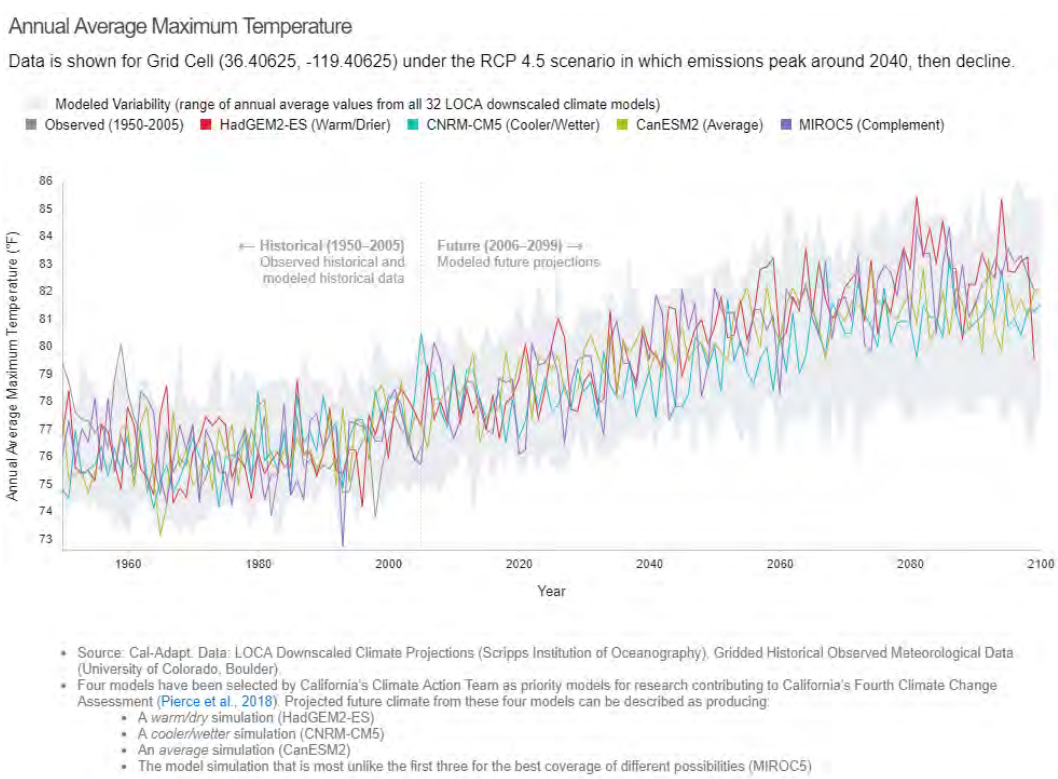
- **Habitat destruction and loss of ecosystems.** California is one of the most biologically diverse regions of the world, with the highest number of unique plant and animal species of all 50 states and the greatest number of endangered species. Climate change will adversely affect plant and wildlife 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 3.4-1 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 3.4-1[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 September 2023 at: https://oag.ca.gov/environment/impact.

[10] Cal-Adapt. California Annual Averages. Accessed September 2023 at: https://cal-adapt.org/tools/annual-averages/.

Water Supply

The Project will rely on two existing on-site 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] California Department of Forestry and Fire Protection (Cal Fire). Fire Hazard Severity Zones in State Responsibility Area (interactive map). Accessed December 2023 at: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones.

[12] Centers for Disease Control and Prevention (CDC). Climate and Health. Accessed September 2023 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 September 2023 at: https://www.cdc.gov/climateandhealth/effects/air_pollution.htm.

[14] United States Environmental Protection Agency (U.S. EPA). Overview of Greenhouse Gasses. Accessed September 2023 at: https://www.epa.gov/ghgemissions/overview-greenhouse-gases.

[15] U.S. EPA. Climate Change Indicators: Atmospheric Concentrations of Greenhouse Gases. Accessed September 2023 at: https://www.epa.gov/climate-indicators/climate-change-indicators-atmospheric-concentrations-greenhouse-gases.

[16] U.S. EPA. Climate Change Indicators: Climate Forcing. Accessed September 2023 at: https://www.epa.gov/climate-indicators/climate-change-indicators-climate-forcing.

[17] U.S. EPA. Understanding Global Warming Potentials. Accessed September 2023 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 California Air Resources Board (ARB or CARB) with completing a comprehensive strategy to reduce emissions of short-lived climate pollutants (SLCP) by January 1, 2016.[19] "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."[20]

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."[21] "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."[22]

Figure 3.4-2 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.[23]

[18] California Air Resources Board (ARB). AB 32 Global Warming Solutions Act of 2006. Accessed September 2023 at: https://ww2.arb.ca.gov/resources/fact-sheets/ab-32-global-warming-solutions-act-2006.

[19] California Legislative Information. Senate Bill 605 (Lara, 2014). SB-605 Short-lived climate pollutants. Accessed December 2023 at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB605.

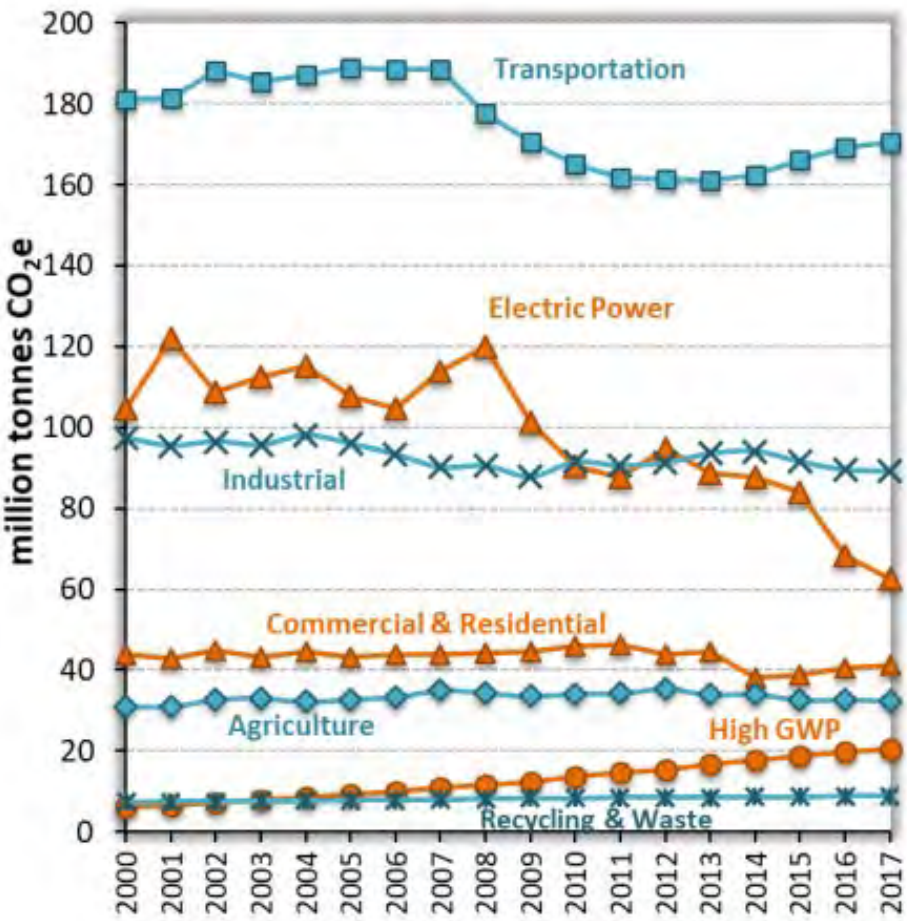
[20] ARB. Short-lived Climate Pollutants. Accessed September 2023 at: https://ww2.arb.ca.gov/our-work/programs/slcp/about.

[21] U.S. EPA. Managing Air Quality-Emissions Inventories. Accessed September 2023 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.

[22] U.S. EPA. Global Greenhouse Gas Emissions Data. Accessed September 2023 at: https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data.

[23] ARB. 2019 Edition. California Greenhouse Gas Emission Inventory: 2000-2017. Page 1. Accessed September 2023 at: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2016/ghg_inventory_trends_00-16.pdf.

Figure 3.4-2[24]
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."[25] The *Tulare County Climate Action Plan 2018 Update* (summarized in **Table 3.4-1**) 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 3.4-1**, 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.

[24] Ibid. Figure 3. Page 5.
[25] Tulare County. General Plan 2030 Update Background Report. Page 6-36.

Table 3.4-1
Tulare County Emissions Inventory 2015 to 2030[26]

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:

- 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;

[26] Tulare County Climate Action Plan 2018 Update. Pages 48-49. December 2018. Accessed September 2023 at: http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/220Climate%20Action%20Plan/CLIMATE%20ACTION%20PLAN%202018%20UPDATE.pdf.

- 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."[27]

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."[28]

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. 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

[27] Tulare County. General Plan 2030 Update Background Report. Pages 6-31.
[28] Intergovernmental Panel on Climate Change (IPCC). About. Accessed September 2023 at: https://www.ipcc.ch/about/.

"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."[29]

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."[30]

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."[31]

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.[32] California continues its dedication to reducing climate change through programs designed to limit GHGs.

Federal Agencies & Regulations

[29] United Nations Framework Convention on Climate Change (UNFCCC). What is the UNFCCC? Accessed September 2023 at: https://unfccc.int/process-and-meetings/the-convention/what-is-the-united-nations-framework-convention-on-climate-change.

[30] UNFCCC. What is the Kyoto Protocol? Accessed September 2023 at: https://unfccc.int/kyoto_protocol.

[31] UNFCCC. The Paris Agreement. Accessed September 2023 at: https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement.

[32] White House Briefing Room. Statements and Releases. Paris Climate Agreement. January 20, 2021. Accessed September 2023 at: https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/20/paris-climate-agreement/.

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."[33]

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 that 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.

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

[33] U.S. EPA. Sources of Greenhouse Gas Emissions – Overview. Accessed September 2023 at: https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions.

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 when issuing the final Findings on December 7, 2009."[34]

"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 (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—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 and other sectors"[35].

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."[36]

California Greenhouse Gas Reduction Strategies

Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger on June 1 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality

[34] U.S. EPA. Endangerment and Cause or Contribute Findings for Greenhouse Gasses under the Section 202(a) of the Clean Air Act: Background. Accessed September 2023 at: https://www.epa.gov/climate-change/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a.

[35] Ibid., Action.

[36] Tulare County General Plan 2030 Update. Recirculated Draft EIR (RDEIR). Pages 3.3-2 to 3.3-3. Accessed September 2023 at: generalplan.co.tulare.ca.us/documents/generalplan2010/RecirculatedDraftEIR.pdf

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. The EO also required assessment of climate change impacts, the development of impact mitigation and adaptation plans, and the formation of an interagency team to implement the Order. [37]

While dated, this EO remains relevant because of the California Supreme Court decision, *Cleveland National Forest Foundation v. San Diego Association of Governments* (2017) 3 Cal.5th 497, which 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.[38]

Assembly Bill 32 and Climate Change Scoping Plan

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 identified a GHG reduction target of 15 percent from "business-as-usual" levels for local governments and notes that successful implementation relies on local governments' land use planning and urban growth decisions. [39, 40]

Pursuant to AB 32, CARB adopted the Climate Change Scoping Plan (Scoping Plan) on December 11, 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. [41]

[37] State of California. Executive Order S-3-05. Accessed December 2023 at https://www.library.ca.gov/wp-content/uploads/GovernmentPublications/executive-order-proclamation/5129-5130.pdf.

[38] Justia Law. California Supreme Court decision, Cleveland National Forest Foundation v. San Diego Association of Governments. Accessed December 2023 at https://law.justia.com/cases/california/supreme-court/2017/s223603.html.

[39] ARB. AB 32 Global Warming Solutions Act of 2006. Accessed December 2023 at https://ww2.arb.ca.gov/resources/fact-sheets/ab-32-global-warming-solutions-act-2006.

[40] State of California. Assembly Bill 32 (Nunez, 2006). AB-32 Air pollution: greenhouse gases: California Global Warming Solutions Act of 2006. Accessed December 2023 at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200520060AB32.

[41] ARB. 2008 Scoping Plan Documents. Accessed December 2023 at https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2008-scoping-plan-documents and Climate Change Scoping Plan – A Framework for Change

The Scoping Plan is required by AB 32 to be updated at least every five years. The First Update to the Scoping Plan (First Update) was approved by CARB on May 22, 2014. The First Update highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals. The First Update builds upon the initial Scoping Plan and sets the groundwork to reach California's long-term goals set forth in Executive Order S-3-05. The First Update defines CARB's climate change priorities for the next five years and evaluates how to align the State's longer-term GHG reduction strategies with State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. [42]

The 2017 Scoping Plan Update (2017 Update) was adopted on December 14, 2017. The 2017 Update addresses the 2030 target established by Senate Bill (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 2017 Update also builds on and integrates efforts already underway to reduce the State's GHG, criteria pollutant, and toxic air contaminant emissions. 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.[43]

"The state achieved its 2020 GHG emissions reductions target of returning to 1990 levels 4 years earlier than mandated by AB 32. The state is currently implementing strategies in the 2017 Scoping Plan Update to further reduce its GHG emissions by 40% below 1990 levels by 2030."[44]

The 2022 Scoping Plan Update (2022 Update) was adopted on December 15, 2022 and addresses the State's carbon neutrality goals established by AB 1279 as discussed below. The 2022 Update lays out a path to achieve carbon neutrality and reduce anthropogenic (man-made) GHG emissions by 85 percent below 1990 levels no later than 2045. The strategies laid out in the 2022 Update will achieve: significant reductions in fossil fuel combustion; further reductions in emissions of short-lived climate pollutants; reduction and sequestration of carbon on working and natural lands; and decarbonization in every sector of the economy. [45]

Executive Order B-30-15

On April 29, 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's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach

[42] ARB. 2013 Scoping Plan Documents. Accessed December 2023 at https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2013-scoping-plan-documents and First Update to the Climate Change Scoping Plan – Building on the Framework.

[43] ARB. 2017 Scoping Plan Documents. Accessed December 2023 at https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2017-scoping-plan-documents and California's 2017 Climate Change Scoping Plan – The Strategy for Achieving California's 2030 Greenhouse Gas Target.

[44] ARB. Climate Change: AB 32 Climate Change Scoping Plan. Accessed December 2023 at https://ww2.arb.ca.gov/our-work/topics/climate-change.

[45] ARB. 2022 Scoping Plan Documents. Accessed December 2023 at https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents. and 2022 Scoping Plan for Achieving Carbon Neutrality.

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.[46]

Senate Bill 32 and Assembly Bill 197 of 2016

In September 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. [47]

AB 197 requires CARB to make available on its website annual updates on the emissions of greenhouse gases, criteria pollutants, and toxic air contaminants for: each facility that reports to CARB and regional air districts; stationary sources throughout the state broken down to a local level; and mobile sources throughout the state broken down to a least a county level.[48]

Executive Order B-55-18

EO B-55-18, signed by Governor Brown on September 10, 2018, establishes a statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and maintain and achieve negative emissions thereafter. The order establishes the intent to extend the efforts already in effect associated with AB 32 implementation, as documented in the 2017 Scoping Plan, which has a timeline for GHG reductions spanning to 2050.[49]

Senate Bill 905 and Assembly Bill 1279 of 2022

In September 2022, Governor Gavin Newsom signed SB 905 and AB 1279, which serve to achieve the State's goal of carbon neutrality. SB 905 requires ARB to adopt regulations for a unified permit application for the construction and operation of carbon dioxide capture, removal, or sequestration and to develop a centralized public database to track the deployment of carbon capture, utilization or storage (CCUS) and carbon dioxide removal (CDR) technologies and the development of carbon dioxide capture, removal, and sequestration projects throughout the state by January 2025.[50]

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[46] Office of Governor Edmund G. Brown Jr. Accessed December 2023 at https://www.ca.gov/archive/gov39/2015/04/29/news18938/index.html.

[47] State of California. Senate Bill 32 (Pavley, 2016). SB-32 California Global Warming Solutions Act of 2006: emissions limit. Accessed December 2023 at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32.

[48] State of California. Assembly Bill 197 (Garcia, 2016). AB-197 State Air Resources Board: greenhouse gases: regulations. Accessed December 2023 at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB197.

[49] State of California. Executive Order B-55-18. Accessed December 2023 at https://www.ca.gov/archive/gov39/wp-content/uploads/2018/09/9.10.18-Executive-Order.pdf.

[50] State of California. Senate Bill 905 (Caballero, 2022). SB-905 Carbon sequestration: Carbon Capture, Removal, Utilization, and Storage Program. Accessed December 2023 at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB905.

AB 1279, also known as the California Climate Crisis Act, amended the Health and Safety Code to include § 38562.2 which requires California to achieve net zero GHG emissions as soon as possible, but no later than December 31, 2045, and achieve and maintain net negative GHG emissions thereafter, and to ensure that by 2045, statewide anthropogenic greenhouse gas emissions are reduced to at least 85% below the 1990 levels.,[51]

Legislation for Energy Producers

Senate Bill 1078 of 2002 and Senate Bill 107 of 2006

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.[52] [53] 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.[54]

Senate Bill X1-2 of 2011

SB X1-2 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.[55]

Senate Bill 350 of 2015

SB 350, also known as the Clean Energy and Pollution Reduction Act, was signed by Governor Brown on October 7, 2015. SB 350 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

[51] State of California. Assembly Bill 1279 (Muratsuchi, 2022). AB-1279 The California Climate Crisis Act. Accessed December 2023 at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB1279.

[52] State of California. Senate Bill 1078 (Sher, 2002). SB-1078 Renewable energy: California Renewables Portfolio Standard Program. Accessed December 2023 at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200120020SB1078.

[53] State of California. Senate Bill 107 (Simitian, 2006). SB-107 Renewable energy: Public Interest Energy Research, Demonstration, and Development Program. Accessed December 2023 at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200520060SB107.

[54] State of California. Executive Order S-14-08. Accessed December 2023 at https://www.library.ca.gov/wp-content/uploads/GovernmentPublications/executive-order-proclamation/38-S-14-08.pdf.

[55] State of California. Senate Bill SB X1-2 (Simitian, Kehoe, and Steinberg, 2011). Accessed December 2023 at http://www.leginfo.ca.gov/pub/11-12/bill/sen/sb_0001-0050/sbx1_2_bill_20110412_chaptered.html.

the year 2050. SB 350 also requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from renewable resources by 2030.[56]

Senate Bill 100 of 2018

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.[57]

Legislation for Commercial Recycling

Assembly Bill 341 of 2011, Senate Bill 1018 of 2012, and Assembly Bill 1826 of 2014

AB 341 sets forth the requirements of the statewide mandatory commercial recycling program. The legislation requires that a business (includes public entities) that generates four cubic yards or more of commercial solid waste per week or is a multifamily residential dwelling of five units or more must arrange for recycling services. Businesses can take one or any combination of the following in order to reuse, recycle, compost, or otherwise divert solid waste from disposal: self-haul, subscribe to a hauler, arrange for the pickup of recyclable materials, or subscribe to a recycling service that may include mixed waste processing that yields diversion results comparable to source separation. The regulation was approved by the Office of Administrative Law on May 7, 2012, and became effective immediately. [58]

On June 27, 2012, the Governor signed Senate Bill 1018 which included an amendment that requires a business that generates 4 cubic yards or more of commercial solid waste per week to arrange for recycling services.[59]

AB 1826 requires businesses to recycle their organic waste beginning in 2016. AB 1826 phased in mandatory commercial organic waste collection to 2020 following AB 341 for mandatory commercial recycling collection.[60]

Senate Bill 605 of 2014 and Senate Bill 1383 of 2016

SB 605 requires CARB in coordination with other State agencies and local air districts to develop a plan to reduce emissions of short-lived climate pollutants (SLCPs), such as methane, while SB 1383 directed CARB to approve and begin implementation of the plan. [61] [62]

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[56] State of California. Senate Bill 350 (De Leon). SB-350 Clean Energy and Pollution Reduction Act of 2015. Accessed December 2023 at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350.

[57] State of California. Senate Bill 100 (De Leon, 2018). SB-100 California Renewables Portfolio Standard Program: emissions of greenhouse gases. Accessed December 2023 at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100.

[58] State of California. Assembly Bill 341 (Chesbro, 2011). AB-341 Solid waste: diversion. Accessed December 2023 at

[59] State of California. Senate Bill 1018 (Committee on Budget and Fiscal Review, 2012). SB-1018 Public resources. Accessed December 2023 at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201120120SB1018.

[60] State of California, Assembly Bill 1826 (Chesbro, 2014). AB-1826 Solid waste: organic waste. Accessed December 2023 at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB1826.

[61] State of California. Senate Bill 605 (Lara, 2014). SB-605 Short-lived climate pollutants. Accessed December 2023 at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB605.

[62] State of California. Senate Bill 1383 (Lara, 2016). SB-1383 Short-lived climate pollutants: methane emissions: dairy and livestock: organic waste: landfills. Accessed December 2023 at

SB 1383 sets a target for reduction of methane emissions to 40% below 2013 levels by 2030 and requires CalRecycle, in coordination with CARB, to adopt regulations that achieve the specified targets for reducing organic waste in landfills. SB 1383 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 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, but with delayed enforcement until 2024. [63]

Assembly Bill 876 of 2015

AB 876 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. [64]

Legislation for Building Energy Efficiency

"The Building Energy Efficiency Standards were first adopted in 1976 and have been updated periodically since then as directed by statute. In 1975 the Department of Housing and Community Development adopted rudimentary energy conservation standards under their State Housing Law authority that were a precursor to the first generation of the Standards. However, the Warren-Alquist Act was passed one year earlier with explicit direction to the Energy Commission (formally titled the State Energy Resources Conservation and Development Commission) to adopt and implement the Standards. The Energy Commission's statute created separate authority and specific direction regarding what the Standards are to address, what criteria are to be met in developing the Standards, and what implementation tools, aids, and technical assistance are to be provided.

The Standards contain energy and water efficiency requirements (and indoor air quality requirements) for newly constructed buildings, additions to existing buildings, and alterations to existing buildings. Public Resources Code Sections 25402 subdivisions (a)-(b) and 25402.1 emphasize the importance of building design and construction flexibility by requiring the Energy Commission to establish performance standards, in the form of an "energy budget" in terms of the energy consumption per square foot of floor space. For this reason, the Standards include both a prescriptive option, allowing builders to comply by using methods known to be efficient, and a performance option, allowing builders complete freedom in their designs provided the building achieves the same overall efficiency as an equivalent building using the prescriptive option. Reference Appendices are adopted along with the Standards that contain data and other information that helps builders comply with the Standards." [65]

[63] Cal Recycle. Enforcement. Accessed December 2023 at https://calrecycle.ca.gov/LGCentral/Enforcement/. Assembly Bill 939 (Sher,1989), also known as the California Integrated Waste Management Act of 1989, required each city and county in California to develop and implement plans to divert 25% of their waste stream by 1995 and 50% by 2000.

[64] State of California. Assembly Bill 876 (McCarty, 2015). AB-876 Compostable organics. Accessed December 2023 at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB876.

[65] California Energy Commission (CEC). 2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings. December 2018. Page v. September 2023 at: 2019 Building Energy Efficiency Standards (ca.gov)

2019 Building Energy Efficiency Standards

"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 most significant efficiency improvements to the residential Standards include the introduction of photovoltaic into the prescriptive package, improvements for attics, walls, water heating, and lighting. The most significant efficiency improvements to the nonresidential Standards include alignment with the ASHRAE 90.1 2017 national standards. The 2019 Standards also include changes made throughout all of its sections to improve the clarity, consistency, and readability of the regulatory language."[66]

2022 Building Energy Efficiency Standards

"The 2022 Energy Code builds on California's technology innovations, encouraging energy efficient approaches to encourage building decarbonization, emphasizing in particular on heat pumps for space heating and water heating. This set of Energy Codes also extends the benefits of photovoltaic and battery storage systems and other demand flexible technology to work in combinations with heat pumps to enable California buildings to be responsive to climate change. This Energy code also strengthens ventilation standards to improve indoor air quality. This update provides crucial steps in the state's progress toward 100 percent clean carbon neutrality by midcentury.

Public Resources Code Section 25402.1 also requires the CEC to support the performance standards with compliance tools for builders and building designers. The Alternative Calculation Method (ACM) Approval Manual adopted by regulation as an appendix of the Energy Code establishes requirements for input, output, and calculational uniformity in the computer programs used to demonstrate compliance. From this, the CEC develops and makes publicly available free, public domain building modeling software in order to enable compliance based on modeling of building efficiency and performance. The ACM Approval Manual also includes provisions for private entities seeking to develop compliance software for approval by the CEC, which further encourages flexibility and innovation.

The Energy Code is conceptually divided into three basic sets. First, there is a basic set of mandatory requirements that apply to all buildings. Second, there is a set of performance standards – the energy budgets – that vary by climate zone (of which there are 16 in California) and building type; thus the Energy Code are tailored to local conditions, and provide flexibility in how energy efficiency in buildings can be achieved. Finally, the third set constitutes an alternative to the performance standards, which is a set of prescriptive packages that provide a recipe or a checklist compliance approach."[67]

[66] Ibid.

[67] CEC. 2022 Building Energy Efficiency Standards for Residential and Nonresidential Buildings. December 2022. Page iv. September 2023 at: 2022 Building Energy Efficiency Standards (ca.gov)

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."[68] On July 22, 2004, the California Air Resources Board adopted the 2004 Revisions to the California State Implementation Plan for Carbon Monoxide[69].

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."[70]

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.[71]

"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."[72] 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.[73]

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

[68] ARB. Air Quality Standards and Area Designations. Accessed September 2023 at: http://www.arb.ca.gov/desig/desig.htm.
[69] ARB. 2004 Revisions to the California State Implementation Plan for Carbon Monoxide. Accessed September 2023 at: http://www.arb.ca.gov/planning/sip/co/co.htm.
[70] Tulare County General Plan 2030 Update RDEIR. Page 3.4-12.
[71] California Air Pollution Control Officers Association (CAPCOA). Accessed September 2023 at: http://www.capcoa.org/.
[72] Ibid.
[73] Op. Cit. Accessed October 2021 at: http://www.ghgrx.org/.

entrepreneurial air quality-management strategies."[74] "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."[75]

"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." [76]

"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 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

[74] San Joaquin Valley Air Pollution Control District (Air District). About the District. Accessed September 2023 at: http://www.valleyair.org/General_info/aboutdist.htm#Mission.
[75] Ibid.
[76] Air District. GAMAQI. Section 8.9. Page 110.

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."[77]

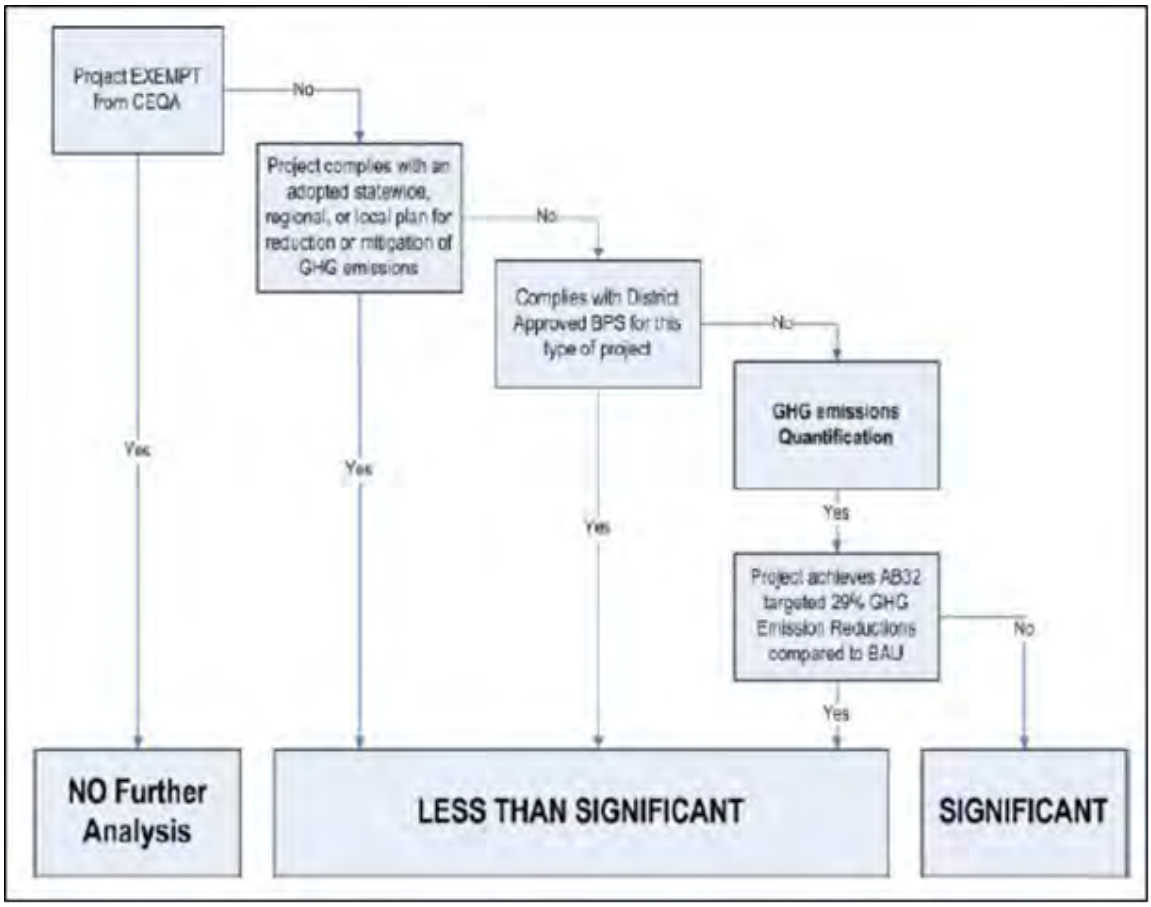
"As presented in Figure 6 (Process of Determining Significance of Greenhouse Gas Emissions) [of the GAMAQI], the policy provides for a tiered approach in assessing significance of project specific GHG emission increases.

- 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.

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." [78] **Figure 3.4-3** provides a visual summary of the Air District's process for determining significance of project-related GHG emissions.

[77] Ibid. Section 8.9. 111-112.
[78] Op. Cit. Section 8.9.1.

Figure 3.4-3
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 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."[79]

"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." [80]

"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…"[81]

Local Policy & Regulations

Tulare County Climate Action Plan

"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."[82]

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.[83]

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.

[79] Air District. Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Project under CEQA. Page 4. Accessed September 2023 at: https://www.valleyair.org/Programs/CCAP/11-05-09/3_CCAP_FINAL_LU_Guidance_Nov_05_2009.pdf or Microsoft Word - 3 CCAP - FINAL LU Guidance - Nov 05 200.doc (valleyair.org).

[80] Ibid. 7-8.

[81] Op. Cit. 8.

[82] Tulare County Climate Action Plan, 2012. Page 1. Accessed September 2023 at: http://generalplan.co.tulare.ca.us/documents/GP/002Board%20of%20Supervisors%20Materials/004Resolution%20No.%202012-0698%20(CAP)/Tulare%20County%20CAP%2008-13-2012.pdf

[83] Ibid. 3

- 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.
- Aerves 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."[84]

"The County of Tulare (County) adopted the Tulare County Climate Action Plan (CAP) in August 2012. The CAP includes provisions for an update when the State of California Air Resources Board (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 Senate Bill (SB) 32 on September 8, 2016 which contains the new 2030 target. The CARB 2017 Scoping Plan Update for the Senate Bill (SB) 32 2030 targets was adopted by the CARB on December 14, 2017 which provided new emission 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 that is provided in this document.

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

[84] Op. Cit. 5

Plan and County data. The CAP identifies the County's fair share of reductions required to maintain consistency with the State target."[85]

"The CAP is expected to achieve its 2020 and 2030 target through compliance with State regulations adopted to implement the 2008 and 2017 Scoping Plans and local regulations and local implementation of certain State regulations regarding water conservation and solid waste. CEQA encourages Lead Agencies to address environmental impacts at the programmatic level rather than on a project by project basis whenever possible. For greenhouse gas impacts all major sources of emission are addressed at a programmatic level by the State. If the measures in the 2017 Scoping Plan are implemented as required by State legislation, sufficient reductions will be made to reach the 2030 target set by SB 32. In addition, the State's Cap-and-Trade Program provides a mechanism to close gaps in emissions if other programs and regulations fall short of expectations. The CAP takes the programmatic approach by demonstrating that applying State programs and regulations to Tulare County sources, the County will provide its share of the reductions needed by the State to achieve the targets." [86]

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 and emissions consistent with CEQA Guidelines Section 15064(h)(3) (as amended to comply with SB 97).

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."[87]

[85] Tulare County Climate Action Plan Update. December 2018. Page 1. Accessed September 2023 at: http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/220Climate%20Action%20Plan/CLIMATE%20ACTION%20PLAN%202018%20UPDATE.pdf

[86] Ibid. Appendix C. Page 1.

[87] Op. Cit.

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 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.

IMPACT ANALYSIS

The discussions regarding Environmental Setting, CEQA requirements, Regulatory Setting, Chapter 3.6 Air Quality, Chapters 1 through 9, Appendices "A" through "E", etc., contained in the adopted/certified Focused Environmental Impact Report (SCH#2021020054) Visalia Landfill – Compost and Biomass Conversion Facility (including technical studies, mitigation measures, Findings of Fact, Notice of Determination, etc.) via Board of Supervisors Resolution No. 2022-0841, are incorporated by reference herein in their entirety, as applicable. Where necessary and if available, additional site-specific facts, data, updated information, etc., are included in this discussion.

The proposed SEIR changes the results of the previous GHG analysis as contained in the Original EIR. As noted earlier, the Original EIR indicates that 1,000 TPD would be diverted from the total Landfill waste stream of 2,000 TPD. However, also as noted earlier, it is the County's desire to retain its Landfill permit to continue the 2,000 TPD waste stream to be landfilled and 900 vehicle trips per day. Further, the County will be requesting a standalone permit for the biomass conversion/composting facility to be located with the Visalia Landfill site. The request will be to allow 1,000 TPD of organic material and 300 haul truck trips per day to transport organic material as feedstock to the biomass conversion/composting facility. As such, the GHG emission estimates have been revised to reflect the proposed Project analyzed in this SEIR. However, although the GHG emissions analysis has changed, the GHG resource conclusions of the original EIR remain valid for the proposed Project.

As noted in the original EIR, "The diversion of organic waste from the landfill to composting and bioenergy [biogas] 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."[88] The original EIR also notes, "GHG emissions associated with the diversion of organic material from landfill to composting and bioenergy [biogas] production are estimated using EPA's Waste Reduction Model (WARM); the results are summarized in Table 5-1 [of the AQ & GHG Report]. BAU emissions from the landfill

[88] Op. Cit. 3.6-28.

are negative, i.e., a reduction in GHG emissions, …"[89] and also concludes "…diverting organic waste to composting and bioenergy [biogas] production yields a larger negative number – a net reduction in GHG emissions compared to landfilling."[90] A complete discussion and emission calculations are provided in the AQ & GHG Report included as Appendix "A" of this Draft SEIR.

As the proposed Project remains identical in regard to composting and biogas production, the conclusions noted in the original EIR that, "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."[91] This conclusion remains applicable for the proposed Project.

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

[89] Op. Cit.
[90] Op. Cit.
[91] Op. Cit. 3.6-31

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."[92]

Landfill Diversion Emissions

"The diversion of organic waste from the landfill to composting and biomass conversion 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 biomass conversion 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 biomass conversion 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 biomass conversion facility or compost facility was excluded from this analysis.

GHG emissions associated with the diversion of organic material from landfill to composting and biomass conversion production are estimated using EPA's Waste Reduction Model (WARM); the results are summarized in Table 5-1 [of the AQ & GHG Report, **Table 3.4-2** in this Draft SEIR]. 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

[92] AQ & GHG Report. Pages 5-16 and 5-17. See Appendix "A" of this Draft SEIR.

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 biomass conversion 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 Report, included in Appendix "A" of this document]."[93]

Table 3.4-2
Summary of Baseline to Project GHG Emissions[94]

Parameter	Baseline (Business as Usual)	Proposed Composting	Proposed Biomass Conversion
Disposal Quantity	225,000 TPY	200,000 TPY	25,000 TPY
GHG Emissions	(3,977)	(17,378)	

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 [of the AQ & GHG Report, **Table 3.4-3** in this Draft SEIR]. A complete discussion and emission calculations are provided in Appendix B [of the AQ & GHG Report, included in Appendix "A" of this document].[95]

Table 3.4-3
Construction Greenhouse Gas Emissions Summary[96]

GHG	Emissions (MT)			
	Compost Facility Phase 1[1]	Compost Facility Phase 2	Compost Facility Phase 3	Biomass Conversion Facility
CO_2	1,226	331	331	289
CH_4	0.05	0.01	0.01	0.01
N_2O	0.08	0.01	0.01	0.01
CO_2e	1,251	335	335	291

[93] Ibid. 5-14.
[94] Op. Cit.
[95] Op. Cit. 5-14 and 5-15.
[96] Op. Cit. 5-15.

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 biomass conversion 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 vehicles.

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 Report, **Table 3.4-4** in this Draft SEIR]. A complete discussion and emission calculations are provided in Appendix C [of the AQ & GHG Report, included in Appendix "A" of this document]."[97]

Table 3.4-4
Summary of Mobile Source GHG Emissions[98]

Activity	CO_2 (MT/yr.)	CH_4 (MT/yr.)	N_2O (MT/yr.)	CO_2e (MT/yr.)
On-road Vehicle Exhaust	3,077	0.0	0.5	3,219
Off-road Equipment Exhaust	1,298	52	10	1,302
Total	4,375	52	11	4,521

Summary of GHG Emissions

"GHG emissions are summarized in Table 5-4 [of the AQ & GHG Report, **Table 3.4-5** in this Draft SEIR]. As shown, the proposed Project results in a net decrease in GHG emissions of over 10,700,000 MT CO_2e per year."[99]

Table 3.4-5
GHG Emissions – Total Project[100]

Activity	CO_2 (MT/yr)	CH_4 (MT/yr)	N_2O (MT/yr)	CO_2e (MT/yr)
Construction (amortized over 30 years)	72.57	0.0	0.0	73.73
Mobile Sources	4,375	52	11	4,521
Compost Facility	–	–	–	(17,378)

[97] Op. Cit.
[98] Op. Cit.
[99] Op. Cit.
[100] Op. Cit. 5-16.

biomass conversion Facility	–	–	–	
Subtotal New Sources	*4,402*	*52*	*11*	*(12,783)*
Baseline – Landfill	–	–	–	(3,977)
Total	–	–	–	**(8,806)**

"As shown in Table 5-4 [of the AQ & GHG Report, **Table 3.4-5** in this Draft SEIR], the estimated annual GHG emissions associated with proposed Project result in a net GHG reduction of over 8,800 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 8,800 MT CO2e per year.

Neither the compost facility nor the biomass conversion 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 biomass conversion 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 (SJVAPCD 2015a)."[101]

"The proposed Project yields a net reduction in GHG emissions of over 8,800 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

[101] Op. Cit 5-16 and 5-17.

program provides mitigation for the Project's vehicles (feedstock delivery, compost and biochar shipment, employee commute, off-road equipment) and electricity usage, consistent with SJVAPC guidance.

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."[102]

As discussed above, Project-related GHG emissions, generated either directly or indirectly, will not have a significant impact on the environment. Tulare County RMA staff agrees with the expert opinion and substantial evidence provided by qualified consultants (Yorke Engineering, LLC) and has determined that it can reasonably be concluded that the 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

[102] Op. Cit. 5-17 and 5-18.

the organics in the waste stream can be diverted from landfills to composting or digestion facilities to produce beneficial products."[103]

"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 biomass conversion 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 biomass conversion 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 biomass conversion 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 biomass conversion production as alternatives to landfilling of organic wastes in Tulare County"[104]

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 3.4-6.**

[103] Op. Cit. 5-18
[104] Op. Cit. 5-19.

Table 3.4-6
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[105]. 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 3.4-7** provides a checklist containing all applicable measures that will provide reductions necessary to achieve CAP consistency.

Table 3.4-7
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.

[105] Tulare County General Plan. Part II, Chapter 1. Rural Valley Lands Plan. Accessed December 2023 at https://generalplan.co.tulare.ca.us/documents/GP/002Board%20of%20Supervisors%20Materials/001BOS%20Agenda%20Items%20-%20Public%20Hearing%20August,%2028%202012/008Attachment%20G.%20Public%20Comment,%20%20Staff%20Matrix,%20and%20Responses/004Item%204.%20GPU%20AMUS/25-PAR~1.PDF or. Microsoft Word - 25-Part II CHP 1-Rural Valley Lands Plan.doc (tulare.ca.us)

Table 3.4-7
CAP Consistency Checklist

Checklist Question	Consistency Method and Criteria	Consistency Assessment
Is the project within a rural community plan or hamlet plan? If yes, is the project consistent with the plan?	If the project requires a plan amendment make findings on why the project is appropriate for the site and 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.	Not applicable; the proposed Project is not within a community, hamlet, or legacy plan boundary.
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 3.4-7
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 the project may be subject to Rule 9410 Employer Trip Reduction Plans.	Not applicable; the proposed Project would not employ 100 or more employees.

Table 3.4-7
CAP Consistency Checklist

Checklist Question	Consistency Method and Criteria	Consistency Assessment
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.
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	The proposed Project would not generate over 4,200 average daily trips. Although the proposed Project includes 300 new vehicle trips (for a grand total of 1,200 daily vehicle trips for the entire Landfill); the trip ends would go directly to the biogas conversion/composting facility . The proposed Project is consistent

Table 3.4-7
CAP Consistency Checklist

Checklist Question	Consistency Method and Criteria	Consistency Assessment
	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.	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 3.4-7**, 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 Report, "By providing composting and biomass conversion 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."[106] Tulare County RMA staff agrees with the expert opinion and substantial evidence provided by qualified consultants (Yorke Engineering, LLC) and has determined that it can reasonably be concluded that the Project will result in ***Less Than Significant Project-specific Impacts*** related to this Checklist Item will occur.

[106] Ibid. 5-19.

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."[107]

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."[108]

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."[109]

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."[110]

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."[111]

Category - "A District approved subdivision within a "class" as identified by unique operational or technical aspects."[112]

Class - "The broadest District approved division of stationary GHG sources based on fundamental type of equipment or industrial classification of the source operation."[113]

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

[107] 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. Accessed December 2023 at https://ww2.valleyair.org/media/disb2jna/2-ccap-final-district-policy-ceqa-ghg-dec-17-2009.pdf.
[108] Ibid. 6
[109] Op. Cit. 7
[110] Op. Cit.
[111] Op. Cit.
[112] Op. Cit.
[113] Op. Cit.

used to refer to the warming predicted by computer models to occur as a result of increased emissions of greenhouse gases."[114]

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)."[115]

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 cause direct and indirect emissions, and to decide which indirect emissions to include that are a consequence of its operations" (GHG Protocol, 2008)."[116]

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
CARB or ARB	California Air Resources Board
Cal EPA	California Environmental Protection Agency
Cal Fire	Department of Forestry and Fire Protection
CAPCOA	California Air Pollution Control Officers Association
CDC	Center for Disease Control
CEC	California Energy Commission
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
GAMAGI	Guide for Assessing and Mitigating Air Quality Impacts (Air District)
GHG	Greenhouse Gases
HFCs	Hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
MRF/TS	Material Recovery Facility/Transfer Station
MSW	Municipal Solid Waste

[114] Tulare County General Plan 2030 Update. Background Report. Page 6-3.
[115] Ibid. 6-3.
[116] Op. Cit. 6-29.

N_2O	Nitrous Oxide
OPR	Governor's Office of Planning and Research
PFCs	Perfluorocarbons
SB	Senate Bill (in California)
SF_6	Sulfur Hexafluoride
U.S. EPA or EPA	United States Environmental Protection Agency
UNFCCC	United Nations Framework Convention on Climate Change
VMT	Vehicle Miles Travelled
WMO	World Meteorological Organization

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Chapter 3.5
Hydrology and Water Quality

SUMMARY OF FINDINGS

The proposed Project will result in a ***Less Than Significant Impact*** related to Hydrology and Water Quality. The impact determinations in this chapter are based upon information obtained from the Project Description, the Focused Environmental Impact Report (SCH# 2021020054) Visalia Landfill – Compost and Biomass Conversion Facility (adopted/certified by the Tulare County Board of Supervisors on September 27, 2022 via Resolution No. 2022-084), various State of California hydrology-related sources that are publicly and readily available, and references listed at the end of this chapter. 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 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

[1] Natural Resources Agency. Office of Planning and Research. State Clearinghouse. California Environmental Quality Act (CEQA) Guidelines. . Section 15126.2 (a). Accessed September 2023 at: https://www.califaep.org/docs/CEQA_Handbook_2023_final.pdf or 2023 CEQA Statutes and Guidelines (califaep.org).

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 3.5-1; Figure 3.5-2** 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."[3] "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."[4]

<u>"Groundwater Aquifers and Wells</u>

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] California Department of Water Resources. California Water Plan Update 2013. Tulare Lake Hydrologic Region. Page TL-11 and TL-13. Accessed September 2023 at: https://cawaterlibrary.net/document/california-water-plan-2013-tulare-lake-hydrologic-region-report/ or California Water Plan 2013: Tulare Lake Hydrologic Region Report – California Water Library (cawaterlibrary.net)

[3] Ibid. TL-14.

[4] Op. Cit. TL-13.

Figure 3.5-1 – Groundwater Basins and Sub-basins Within the Tulare Lake Hydrologic Region

Figure 3.5-2
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)."[5]

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."[6] Specific objectives outlined in the Water Quality Control Plan are listed as follows: [7]

- **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.

[5] Op. Cit.

[6] State of California Department of Water Resources. "Water Quality Control Plan for the Tulare Lake Basin". Third Edition. May 2018. Page 3-9. Accessed September 2023 at: https://cawaterlibrary.net/document/water-quality-control-plan-for-the-tulare-lake-basin-third-edition/or Water Quality Control Plan for the Tulare Lake Basin Third Edition – California Water Library (cawaterlibrary.net)

[7] Ibid. 3-3 to 3-9.

- **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: [8]

- **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)."[9]

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)."[10] 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).

[8] Op. Cit. 3-10 through 3-12.
[9] Op. Cit.
[10] State of California Department of Water Resources. "Water Quality Control Plan for the Tulare Lake Basin". Third Edition. May 2018. Page 1-3.

- 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"[11]

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)."[12]

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

[11] State of California Department of Water Resources. "California Water Plan Update 2009, Tulare Lake Hydrologic Region". Page TL-61. Accessed August 2021 at https://h8b186.p3cdn2.secureserver.net/wp-content/uploads/2017/05/CWP-Update-2013-Tulare-Lake-Hydrologic-Region.pdf or California Water Plan Update 2009. Volume 1, Chapter 2. Imperative to Act (secureserver.net).

[12] 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)."[13]

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)."[14]

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)."[15]

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)."[16]

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)."[17]

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.

[13] Op. Cit. 62.
[14] Op. Cit.
[15] Op. Cit.
[16] Op. Cit.
[17] 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)."[18]

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."[19]

"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."[20]

"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."[21]

Groundwater Supply

[18] Op. Cit.
[19] Tulare County General Plan 2030 Update, Background Report. Page 10-7.
[20] State of California Department of Water Resources. "California Water Plan Update 2009, Tulare Lake Hydrologic Region". Page TL-5.
[21] 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."[22]

"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."[23] "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."[24]

"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."[25]

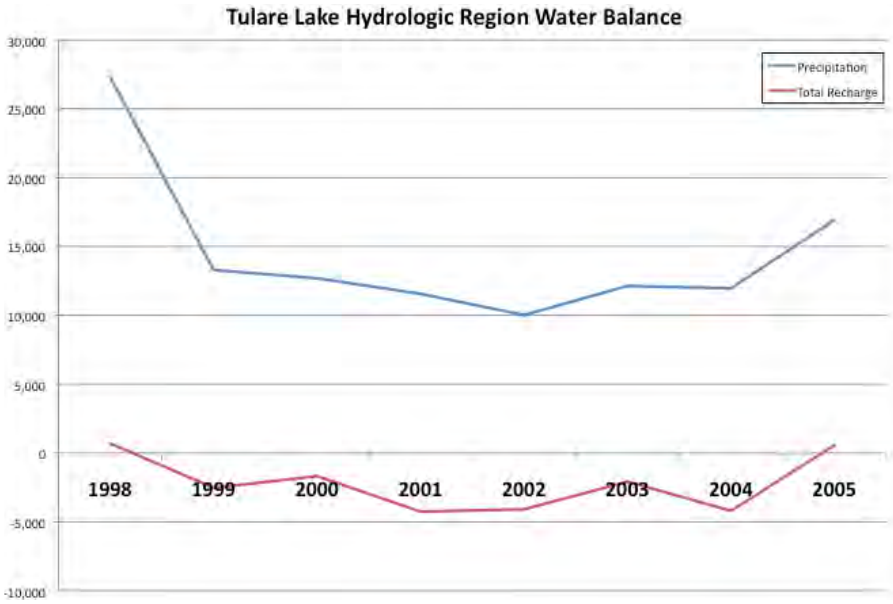
According to the *2009 California Water Plan*, water storage has fluctuated between 2003 and 2010. The data suggests that variations occur as a result of changing precipitation levels; see **Table 3.5-1** and **Figure 3.5-3**.

[22] Ibid.
[23] Tulare County General Plan 2030 Update Background Report. Page 10-11.
[24] State of California Department of Water Resources. "California Water Plan Update 2009, Tulare Lake Hydrologic Region". Page TL-17.
[25] Ibid. TL-19.

Table 3.5-1
Tulare Lake Hydrologic Water Balance for 2003-2010 (thousand acre-feet)[26]

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 3.5-3



[26] 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."[27] 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."[28] **Table 3.5-2** lists irrigation districts in Tulare County water supply sources.

Table 3.5-2
Irrigation Districts in Tulare County[29]

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

[27] State of California Department of Water Resources. "California Water Plan Update 2009, Tulare Lake Hydrologic Region". Page TL-54.
[28] Ibid. 10-12.
[29] 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 3.5-3** 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 3.5-3
Water and/or Sewer Districts With Limitations in Tulare County[30]

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."[31]

"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)."[32]

[30] State of California Department of Water Resources. "California Water Plan Update 2009, Tulare Lake". Page TL-17.
[31] Tulare County General Plan 2030 Update Background Report. Page 8-13.
[32] 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."[33]

"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."[34]

"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."[35]

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."[36]

[33] Tulare County General Plan 2030 Update Background Report. Page 8-14.
[34] Ibid.
[35] Op. Cit. 8-17.
[36] U.S. Environmental Protection Agency. Summary of the Clean Water Act. Accessed September 2023 at: https://www.epa.gov/laws-regulations/summary-clean-water-act or Summary of the Clean Water Act | US EPA

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.)"[37]

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."[38]

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

[37] U.S. Environmental Protection Agency. Summary of the Safe Drinking Water Act. Accessed September 2023 at: http://water.epa.gov/lawsregs/rulesregs/sdwa/index.cfm.
[38] U.S. Environmental Protection Agency. Our Mission and What We Do. Accessed September 2023 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."[39]

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."[40] "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."[41]

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."[42]

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.

[39] U.S. Army Corps of Engineers. Accessed August 2021 at: http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx.

[40] National Flood Insurance Program Summary. Accessed August 2021 at: https://www.fema.gov/nfip50.

[41] National Flood Insurance Program. Accessed August 2021 at: https://www.fema.gov/national-flood-insurance-program.

[42] California Department of Water Resources. Porter-Cologne Water Quality Control Act Summary. Accessed August 2021 at: https://www.waterboards.ca.gov/laws_regulations/docs/portercologne.pdf or Porter-Cologne Water Quality Control Act - 2023 Version (ca.gov) .

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."[43]

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."[44]

"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."[45]

California Department of Water Resources

"DWR's mission is "To sustainably 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."[46] 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

[43] California Water Boards. Mission Statement. Accessed September 2023 at: http://www.waterboards.ca.gov/about_us/water_boards_structure/mission.shtml.
[44] Ibid.
[45] Central Valley Water Quality Control Board. Accessed September 2023 at: http://www.swrcb.ca.gov/centralvalley/about_us/.
[46] Department of Water Resources. "The DWR Mission" accessed September 2023 at https://water.ca.gov/ or Department Of Water Resources (ca.gov)

- Providing recreational opportunities"[47]

In addition, DWR also conducts the following:

"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."[48]

<u>California Water Boards Central Valley - R5</u>

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

[47] California Department of Water Resources. Accessed September 2023 at: https://water.ca.gov/What-We-Do

[48] California Department of Water Resources. "The DWR Mission." Accessed September 2023 at: https://water.ca.gov/ or Department Of Water Resources (ca.gov).

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."[49] 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 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."[50]

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."[51]

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.

[49] The California Water Boards Central Valley – R5. Accessed September 2023 at: https://www.waterboards.ca.gov/centralvalley/about_us/
[50] Ibid.
[51] State of California Department of Water Resources. SGMA Groundwater Management. Accessed September 2023 at: https://water.ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management

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 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."[52] 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.

[52] Tulare County Environmental Health Division. Our Mission. Accessed September 2023 at: https://tularecountyeh.org/eh/about-us/career-guide-brochure/ or tularecountyeh.org/eh/about-us/career-guide-brochure/

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.

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

Hydrology and Water Quality:

The proposed Project does not change the results of the Hydrology and Water Quality resource analysis/determination as contained in the original EIR. As noted earlier, the Original EIR indicates that 1,000 TPD would be diverted from the total landfill waste stream of 2,000 TPD. However, also as noted earlier, it is the County's desire to retain its Landfill permit to continue the 2,000 TPD waste stream to be landfilled and 900 daily vehicle trips. Further, the County will be requesting a standalone permit for the biomass conversion/composting facility to be located within the Visalia Landfill site. The request will be to allow 1,000 TPD of organic material and 300 haul truck trips per day to transport organic material as feedstock to the biomass conversion/composting facility. Overall, the proposed Project would result in a daily maximum total of 3,000 TPD (2,000 TPD would be landfilled and 1,000 TPD of organic material would be transported to the biogas conversion/composting facility to be used as feedstock) and up to 1,200 vehicle trips per day (900 for landfilling purposes and 300 haul trips to exclusively transport feedstock to the biogas conversion/composting facility).

As noted in the original EIR, "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."[53] "…the proposed Project will be required to comply with all local, state, and/or federal required; requirements of CalRecycle, SWRCB, and the RWQCB."[54]

In regard to water usage as discussed in the Original EIR, "…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

[53] Focused Environmental Impact Report (SCH#2021020054) Visalia Landfill – Compost and Biomass Conversion Facility adopted by Board of Supervisors Resolution No. 2022-0841. Page 3.7-28
[54] Ibid. 3.7-27.

sufficiently served by the existing wells on-site and no construction of new wells or expansion of existing wells is necessary."[55].

However, as noted in the Original EIR, "Via Emergency Declaration by the Tulare County Board of Supervisors (Board) on July 19, 2022 (via Resolution No. 2022-0625), the Solid Waste Department was authorized to secure a well drilling company to construct a new, replacement well at the Visalia Landfill. Due to its emergency status, pursuant to Title 14 of the California Code of Regulations, §15269(c) and Public Resources Code §21080(b)(4), the Board directed the County's Environmental Assessment Officer to file an appropriate Notice of Exemption. A copy of the filed Notice of Exemption is included in Appendix "E""[56]. The Original EIR determined that, "The new, replacement well would replace an existing failing/underproducing well (the "Cotton Gin Well") with a production capability (yield) at least equivalent to the Cotton Gin Well."[57] The new, replacement well would be able to accommodate the Landfill's need as, "The previously drawn water would instead be drawn from the new well resulting at the same rate as the Cotton Gin Well resulting in no in a net increase of acre/feet per day or year. The resulting increase in water usage would allow the Visalia Landfill to meet dust control requirements from agencies such as the Valley Air District's Regulation VIII (Fugitive PM10 Prohibitions) and CalRecycle. Therefore, the proposed Project will not result in an increase in water usage, and will also be offset by between 15% – 30% water savings due to re-using stormwater during the composting process."[58] [59]

Would the project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

As noted earlier, and summarized here, the County will retain its existing permit for landfilling purposes (that is, maximums of 2,000 TPD of landfilling materials and 900 vehicle per day), but will also seek a standalone permit of 1,000 TPD for the biogas conversion/composting facility and 300 haul trucks to transport feedstock exclusively to the biogas conversion/composting facility.

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

The proposed Project consists of the 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

[55] Op. Cit. 3.7-29.
[56] Op. Cit.3.7-30.
[57] Op. Cit.
[58] OP. Cit.
[59] On July 19, 2022, the Tulare County Board of Supervisors (BOS) declared an emergency due to severe drought conditions at the Visalia Landfill and directed staff to construct a new water well at the Visalia Landfill in response to said emergency (BOS Resolution No. 2022-0625). As such, the Cotton Gin Well was replaced and the new well placed into service on August 15, 2023. On September 19, 2023, the BOS declared that the new replacement well now provides a viable water resource and the conditions for an emergency declaration no longer exist. (BOS Resolution No. 2023-0881). Agendas and Minutes for BOS hearings are available online at: https://tularecounty.ca.gov/board/board-of-supervisors-meetings/.

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" in the Original EIR) 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 (1×10^{-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 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***

As noted earlier, and summarized here, the County will retain its existing permit for landfilling purposes (that is, maximums of 2,000 TPD of landfilling materials and 900 vehicle per day), but will also seek a standalone permit of 1,000 TPD for the biogas conversion/composting facility and 300 haul trucks to transport feedstock exclusively to the biogas conversion/composting facility.

The proposed Project will require an increase in water use above existing landfill baseline conditions. Two existing wells are available on the landfill property for water supply. A new well which has replaced the failing "Cotton Gin Well" is located adjacent to and east of the biogas conversion/composting facility (generally at the southwest 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 dust control purposes during landfilling operations. The average daily water use for the landfill operations is approximately 118,000 gallons per day (gpd). Water demand for the composting operations will remain unchanged. As noted earlier, the proposed Project is an additional 1,000 TPD maximum (to be used for the biomass conversion/composting operation), and 300 additional haul truck trips (to deliver organic (green waste) feedstock material to the biomass conversion/composting operation). As noted in the previously adopted/certified Focused EIR, the typical water used for a summer day for an average 400 TPD (or 100,000 TPY) at the CASP compost facility is 40,000 gpd. The typical summer day for an average 800 TPD at the CASP compost facility would be 80,000 gpd. 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.

As addressed in the Original EIR, the proposed 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.

Via an Emergency Declaration (Resolution No. 2022-0625) by the Tulare County Board of Supervisors (Board) on July 19, 2022, the Solid Waste Department was authorized to secure a well drilling company to construct a new, replacement well at the Visalia Landfill. Due to its emergency status, pursuant to Title 14 of the California Code of Regulations, §15269(c) and Public Resources Code §21080(b)(4).

The new, replacement well would replace an existing failing/underproducing well (the "Cotton Gin Well") with a production capability (yield) at least equivalent to the Cotton Gin Well. Preliminary design of the well anticipates a yield capability of 700 gallons per minute (gpm), a depth of 500 feet, and powered by a 50-horsepower electric motor. No additional piping will be constructed. The new replacement well would be installed to relieve the burden on the two existing wells as, based on repairs, current pumping rates will eventually collapse the failing/underproductive Cotton Gin Well. An overhead fill from the Cotton Gin Well will be connected to the new well. The failing/underproducing Cotton Gin Well would remain operational to only supply water to the buildings and would no longer be used to draw water for usage for dust control purposes. If operated continuously over a 24-hour period, the replacement well would have the capability to produce approximately 3.09-acre feet per day (ac./ft./day) of water. The disposal site (landfill) operates 10 hours per day, (six days per week or approximately 313 days per year); as such, the new well would realistically be used 41.67% of the 24-hour period. This results in approximately 1.28 (3.09 X 47% = 1.28) ac./ft./day of water for 313 days/year thereby resulting in approximately 401-acre feet per year of water. The failing/underproducing Cotton Gin Well has the capacity to yield 400-900 gpm of water.[60] Historically, the Cotton Gin Well provided 118,000 gallons per day (gpd) (or approximately 0.362 ac./ft./day) of water primarily used at the landfill for dust control purposes. However, the proposed Project is estimated to use approximately 40,000 to 80,000 additional gallons per day for the biomass conversion/composting component resulting in total water usage from both landfilling operations AND the biomass conversion/composting component of 158,000 to 198,000 gpd (or approximately 0.48 to 0.61ac./ft./day).[61] If it remains in use over the course of a year, the Cotton Gin Well would need to yield approximately 150.25 to 191.0 ac./ft./yr. to fulfill landfill dust control water needs.

[60] The Cotton Gin Well was replaced and the new well placed into service on August 15, 2023.

[61] "Report of Composting Site Information. Visalia Landfill Composting Facility 8614 Avenue 328, Visalia, CA 93291-8856." K. Water Supply. Page 2. Included in Appendix "D" of the Draft EIR.

As noted in the previously adopted/certified Focused EIR, regardless of using water yielded from the new well or the Cotton Gin Well, it was anticipated that the proposed on-site stormwater storage pond could supply approximately 15% – 30% of the annual water demand.[62] This results in a water savings of between 23,700 to 47,400 gpd thereby reducing total water usage to 16,300 to 32,600 gpd. Thus, overall water usage would result in approximately 134,300 gpd to 150,600 gpd (or approximately 0.42 to 0.46 ac./ft./day) and an annual (that is, 313 operational days) usage of approximately 131.5 to 144 ac./ft./yr. Applying the water savings (that is, 15% – 30%) to the new well, if the well were to yield 100% of its maximum producing capacity, would result in an annual usage of 341 to 281 ac./ft./yr. However, realistically, it is reasonable to use the same usage figures (150.25 to 191.0 ac./ft./yr.) for the new well which will merely replace water previously produced by the Cotton Gin Well for dust control purposes at the landfill. Conservatively, it is also reasonable to include an additional acre-foot of water (326,000 gallons/year or 1,042 gpd) for the 313 days the landfill is operating. It is noted that the 326,000 gpy is twice the amount a typical single-family home would use per day.[63]

As such, the failing/underproducing Cotton Gin Well previously produced 150.25 to 191 acre/feet/year of water. The previously drawn water would instead be drawn from the new well resulting at the same rate as the Cotton Gin Well resulting in no net increase (or decrease) in yield of acre/feet per day or year. The resulting increase in water usage would allow the Visalia Landfill to meet dust control requirements from agencies such as the Valley Air District's Regulation VIII (Fugitive PM10 Prohibitions) and CalRecycle. Therefore, the proposed Project (that is, retaining the 2,000 TPD for landfilling and 1,000 TPD for the biomass conversion/composting component) will result in an overall increase in water demand by16,300 to 32,600 gpd (15.65 to 31.30 ac/ft./yr.) because of a 15% – 30% water savings due to re-using stormwater during the composting process. This usage is equivalent to approximately 31 to 62 single-family homes over the course of a year.

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

[62] Ibid. 22

[63] California Department of Water Resources. Glossary. Acre-foot (af). Accessed September 2023 at: https://www.bing.com/search?q=https%3A%2F%2Fwater.ca.gov%2FWater-Basics%2FGlossary&form=ANNH01&refig=d19980ea6b3d4c33b5665e2dda5aabf6&pc=U531 or https://water.ca.gov/Water-Basics/Glossary

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?

As noted earlier, and summarized here, the County will retain its existing permit for landfilling purposes (that is, maximums of 2,000 TPD of landfilling materials and 900 vehicle per day), but will also seek a standalone permit of 1,000 TPD for the biogas conversion/composting facility and 300 haul trucks to transport feedstock exclusively to the biogas conversion/composting facility.

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 (1×10^{-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 original proposed Project and runoff will not exceed the stormwater system's capacity; as no changes will occur to the existing landfilling operations and the biogas conversion/composting have previously been analyzed in the Original EIR, the conclusion of less than significant impact will remain valid. As such, 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. 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?

As noted earlier, and summarized here, the County will retain its existing permit for landfilling purposes (that is, maximums of 2,000 TPD of landfilling materials and 900 vehicle per day), but will also seek a standalone permit of 1,000 TPD for the biogas conversion/composting facility and 300 haul trucks to transport feedstock exclusively to the biogas conversion/composting facility.

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

The proposed Project is located within a minimal flood hazard area and is located more than 100 miles from the nearest 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?

As noted earlier, and summarized here, the County will retain its existing permit for landfilling purposes (that is, maximums of 2,000 TPD of landfilling materials and 900 vehicle per day), but will also seek a standalone permit for the biogas conversion/composting facility and 300 haul trucks to transport feedstock exclusively to the biogas conversion/composting facility.

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 3.6
Transportation

SUMMARY OF FINDINGS

The proposed Project will result in a ***Less Than Significant Impact*** related to Transportation and Traffic. The impact determinations in this chapter are based upon information obtained from the Project Description and the Focused Environmental Impact Report (SCH# 2021020054) Visalia Landfill – Compost and Biomass Conversion Facility (adopted/certified by the Tulare County Board of Supervisors on September 27, 2022 via Resolution No. 2022-084), 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 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

[1] California Natural Resources Agency. California Environmental Quality Act (CEQA) Guidelines. Section 15126.2 (a). Accessed September 2023 at: 2023 CEQA Statutes and Guidelines (califaep.org) or 2023 CEQA Statutes and Guidelines (califaep.org)

[2] Tulare County General Plan 2030 Update. Page 13-2. Accessed September 2023 at: http://generalplan.co.tulare.ca.us/index.asp.

(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]

"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 3.6-1** and **3.6-2**.

[3] Tulare County General Plan 2030 Update Background Report. Page 5-4.
[4] Ibid. 5-7.

Table 3.6-1 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.
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 3.6-2 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

[5] Op. Cit. 7 and 8.
[6] Op. Cit. B-8 and B –9.

Table 3.6-2
Interrupted Traffic Flow Facilities LOS[6]

	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
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.

[7] Op. Cit. B-9.
[8] Op. Cit. B-51.
[9] Op. Cit. B-52.
[10] Op. Cit.

Area Roadways

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.

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]

[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 September 2023 at: 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.

REGULATORY SETTING

Federal Agencies & Regulations

None that apply to the proposed Project.

State Agencies & Regulations

Caltrans: Transportation Concept Reports

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:

[14] Caltrans Guide for the Preparation of Traffic Studies. Page ii. Accessed September 2023. https://www.contracosta.ca.gov/DocumentCenter/View/34121/Caltrans2002-TIS-Guidelines-PDF.

- Rideshare Programs;
- Park and Ride Lots;
- Alternate Work Schedules;
- Bicycle Facilities;
- Public Transit;
- Traffic Flow Improvement; and
- Passenger Rail and Support Facilities."[15]

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:

[15] Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report. Page 3.2-2.
[16] Tulare County Association of Governments 2018 RTP. Program EIR. 3.0 Project Description. Page 3.0-1 tularecog.org/tcag/planning/rtp/rtp-20181/environmental-impact-report/
[17] Ibid. 3.0-6.
[18] Op. Cit.
[19] Op. Cit. 3.0-7.
[20] Op. Cit.

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)

(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: Coordinate, monitor, and integrate planning and programming for intelligent transportation systems (ITS), smart infrastructure and demand-responsive transportation.

Policies

1. 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)
2. Build upon ITS planning efforts in the San Joaquin Valley in conjunction with federal rules (ITS architecture and standards conformity and statewide and metropolitan planning) to expand ITS actions
3. Build upon best practices from past and current transit ITS deployment experiences in the State of California.
4. Periodically update Tulare County Region's Urbanized Area ITS Plan(s).
5. Support and update the San Joaquin Valley ITS Strategic Deployment Plan as needed.
6. Support Intelligent Transportation Systems for upgrading state highway interchanges from rural to urban standards.
7. 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

[21] Tulare County Association of Governments 2018 RTP. Chapter B: Policy Element. Reliability and Congestion. Page B-6. Accessed September 2023 at: tularecog.org/tcag/planning/rtp/rtp-2022/chapter-b-policy-element/

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.

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

The discussions regarding Environmental Setting, CEQA requirements, Regulatory Setting, Chapter 3.8 Transportation, Chapters 1 through 9, Appendices "A" through "E", etc., contained in the adopted/certified Focused Environmental Impact Report (SCH#2021020054) Visalia Landfill – Compost and Biomass Conversion Facility, Mitigation Monitoring and Reporting Program, Findings of Fact, Board of Supervisors Resolution No. 2022-0841, Notice of Determination, etc., are incorporated herein in their entirety, as applicable. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Transportation:

The proposed Project will modify the results of the Transportation resource analysis/determination as contained in the original EIR. As noted earlier, the original EIR indicates that 1,000 TPD would be diverted from the total landfill waste stream of 2,000 TPD. However, also as noted earlier, it is the County's desire to retains its current Landfill permit to continue the 2,000 TPD waste stream to be landfilled and to receive a standalone permit to allow 1,000 TPD of organic (bio) material to serve as feedstock and transported to the biomass conversion/composting facility. By diverting 1,000 TPD of organic material from the TOTAL 3,000 TPD, the remaining 2,000 TPD (which is the Landfill's currently permitted maximum of all solid waste material) would be landfilled. Over time (when Landfill operations include both landfilling AND biomass conversion/composting), the 2,000 TPD of solid waste material would remain unchanged while; conversely, the additional 1,000 TPD of organic material would be diverted to biomass conversion/composting uses.

As noted in the original EIR, "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."[22] Over time, a maximum of 900 haul truck trips (the current permitted trips limit) would deliver landfilling material and 300 additional haul truck trips would deliver organic material to the biomass conversion/composting operation located within the Landfill site's existing footprint resulting in a total maximum of 1,200 vehicle trips per day.

Also, Vehicle Mile Travelled (VMT) conclusion contained in the Original EIR would remain valid. That is, "The 10-15 employees anticipated to be utilized for the Project will generate an additional 45 trips per day in accordance with 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 organic material is not being diverted and it currently landfilled with other solid waste. The new organic material tons would be diverted directly to the biomass conversion/compost facility instead of to its current area within the existing landfill. The proposed Project would change the number of haul trucks entering the Landfill by adding up to daily 300 haul truck trips that would be used to import organic (bio material) material. Since "raw" products (i.e., organic material) and finished product (e.g., composting material) are considered goods movement; they are exempt from VMT. Therefore, as goods movement is exempt, the Project is below the established VMT threshold of 500 employee trips per day.

Currently, the Landfill is permitted to receive a maximum 2,000 TPD. The proposed Project ***would not*** (emphasis added) increase or decrease the solid waste tonnage, it would merely increase total daily tonnage of the Landfill from 2,000 TPD to 3,000 TPD (with 1,000 TPD transported to the biomass conversion/composting components). As such, there will not be an increase in solid waste hauling trips, rather there would be a gradual increase in feedstock for biomass conversion/composting production as analyzed in the Original EIR resulting in a determination of a less than significant impact. Also, as solid waste and organic material hauling trips are considered "goods movements", the VMT generated by this component of overall Landfill operations is exempt from VMT.

Lastly, as the proposed Project's biomass conversion/composting production activities would be identical to that analyzed in the Original EIR, it would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment; nor result in inadequate emergency access.

Would the project:

[22] Op. Cit. 3.8-11
[23] Op. Cit. .3.8-12 and -13.

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 biomass conversion/composting operation site would be accessed from Avenue 328 via an existing ingress/egress roadway that currently services the landfill. As proposed, the Project would retain the currently permitted tonnage limits (stated in the Solid Waste Facility Permit) for 2,000 TPD for landfilling and 1,000 TPD organic material (green waste) to be diverted to a different area (the biomass conversion/composting facility) within the existing Landfill site. As such, the new organic wastes tonnage would be diverted directly to the compost facility instead of to its current area within the existing landfill.

The biomass conversion/composting operation would be located at the southwest corner of the Landfill 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. Despite the increase of 1,000 TPD of organic material and the addition of 300 haul truck trips, the conclusion in the original EIR of a less than significant impact to the Transportation resource remains valid for the proposed Project. Although the proposed Project would increase the number of vehicle trips necessary to import pre- biomass conversion/composting material and exporting of finished compost material, the conclusion in the Original EIR that the Project's impact would remain less than significant remains valid.

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

The geographic area of this cumulative analysis is Tulare County. As identified previously, the intent of the proposed Project is to increase the currently permitted tonnage limits as stated in the current Solid Waste Facility Permit for the Landfill from 2,000 total TPD to 3,000 total TPD (i.e., 2,000 TPD for landfilling and 1,000 TPD for the biomass conversion/composting operation); and the addition of 300 haul truck trips resulting in a total of 1,200 total vehicle trips to the Landfill. As noted earlier, the current organic material is being landfilled; whereas the future organic material would be diverted directly to the biomass conversion/composting facility instead of landfilling. In addition to the haul truck trucks, the only new trips occurring associated with the Original Project and the subsequent (this) proposed Project are the employee trips, which are estimated to be 45 trips per day (which includes the 10-15 employees). Because of the nominal number of additional 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.[24] The 10-15 employees anticipated to be utilized for the Project will generate an additional 45 trips per day in accordance with 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."[25] As noted earlier, the current organic material is currently being landfilled; whereas and future organic material would be diverted directly to the biomass conversion/composting facility instead of landfilling. As such, the Project does not change the number of haul trucks used to import organic material. Since "raw" products (i.e., the organic material) and finished product (i.e., "finished" composting material) are considered goods movement; they are exempt from VMT.

Similar to the Original EIR, 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***

No changes would occur to the existing, or future, landfilling operation as the daily maximum of 2,000 TPD would remain unchanged.The proposed biomass conversion/composting facility

[24] County of Tulare. SB 743 Guidelines. June 2020. Page 6. Accessed September 2023 at: https://tularecounty.ca.gov/rma/index.cfm/rma-documents/planning-documents/tulare-county-sb-743-guidelines-final/
[25] Ibid. iv.

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 land 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. Operation of the composting component 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. 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's 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 3.7
Tribal Cultural Resources

SUMMARY OF FINDINGS

The proposed Project will result in a ***Less Than Significant Impact With Mitigation*** to Tribal Cultural Resources. A detailed review of potential impacts is provided in the following analysis. The Cultural Resources sections 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 via Resolution No. 2013-0713); the Cultural Resources and Tribal Cultural Resources section included in the Focused Environmental Impact Report (SCH# 2021020054) Visalia Landfill – Compost and Biomass Conversion Facility (SCH#20221020054, adopted/certified by the Tulare County Board of Supervisors on September 27, 2022 via Resolution No. 2022-084). Also, 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

[1] California Public Resources Code. Division 13. Chapter 2.6. Section 21084.1. Accessed September 2023 at: http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum=21084.1.

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."

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

[2] California Natural Resources Agency. California Environmental Quality Act (CEQA) Guidelines. Appendix "G", Item XVIII. Tribal Cultural Resources. Accessed September 2023 at: 2023 CEQA Statutes and Guidelines (califaep.org) or 2023 CEQA Statutes and Guidelines (califaep.org).

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]

"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.

<u>Natural Setting</u>

[3] Tulare County General Plan Update 2030. Background Report. Pages 9-53 through 9-54. http://generalplan.co.tulare.ca.us/documents/GeneralPlan2010/Appendix%20B%20-%20Background%20Report.pdf or Tulare County General Plan Recirculated Draft EIR.

[4] Ibid. 9-54 through 9-55

[5] Op. Cit. 9-55.

[6] Op. Cit. 9-56.

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 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

[7] United States Environmental Protection Agency, NEPAssist. National Wetlands Inventory Mapper. Accessed September 2023 at: https://nepassisttool.epa.gov/nepassist/nepamap.aspx.
[8] Tulare County General Plan 2030. Update Background Report. Page 9-53.
[9] Ibid.
[10] Op. Cit. 9-53 through 9-54.

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 River South 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 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]

[11] Op. Cit.
[12] Op. Cit.
[13] Op. Cit. 9-54 through 9-55.
[14] Op. Cit. 9-55.

"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]

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 recent response to the County letter from the NACH dated July 13, 2023 describing negative results of the SLF search.

An updated records search by the Southern San Joaquin Valley Information Center (SSJVIC) was not requested as there will be no change to the physical footprint within the Landfill site by the proposed Project. An earlier search by the SSJVIC for the Original EIR 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

[15] Ibid. 9-55.

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]

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,

[16] Advisory Council on Historic Preservation. National Historic Preservation Act. Accessed September 2023 at: https://www.achp.gov/preservation-legislation.
[17] California State Parks. Office of Historic Preservation. Mission and Responsibilities. Accessed September 2023 at: https://ohp.parks.ca.gov/?page_id=1066.
[18] Ibid.

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 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).

[19] California State Parks. California Office of Historic Preservation. California Historical Resources Information System. Accessed September 2023 at: http://ohp.parks.ca.gov/?page_id=1068.

[20] California State Parks. California Office of Historic Preservation. About the CHRIS Information Centers. Accessed September 2023 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 September 2023 at: https://ohp.parks.ca.gov/?page_id=30331.

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.

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

[22] California State Parks. Office of Historic Preservation. California Register of Historical Resources. Accessed September 2023 at: . https://ohp.parks.ca.gov/?page_id=21238 or California Register of Historical Resources

[23] California Legislative Information. Senate Bill No. 18, Chapter 905. Accessed September 2023 at: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200320040SB18.

[24] California Legislative Information. Assembly Bill No. 52, Chapter 532. Accessed September 2023 at: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB52.

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 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.

[25] Native American Heritage Commission. About the Native American Heritage Commission. Accessed September 2023 at: http://nahc.ca.gov/about/.

(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:

(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

[26] CEQA Guidelines. Section 15064.5(c).
[27] Ibid. Section 15064.5(d).

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 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,

[28] Op. Cit. Section 15064.5(e).
[29] Op. Cit. Section 15064.5(f).
[30] Tulare County General Plan 2030 Update. Part 1 – Goals and Policies Report.

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.

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

The discussions regarding Environmental Setting, CEQA requirements, Regulatory Setting, Chapter 3.9 Tribal Consultation, Chapters 1 through 9, Appendices "A" through "E", etc., contained in the adopted/certified Focused Environmental Impact Report (SCH#2021020054) Visalia Landfill – Compost and Biomass Conversion Facility, Findings of Fact, Board of Supervisors Resolution No. 2022-0841, Notice of Determination, etc., are incorporated herein in their entirety, as applicable. Also, additional resources incorporated by reference include the Cultural Resources sections 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); and 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 via Resolution No. 2013-0713); Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

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). As noted earlier, 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 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 noted earlier, the Tribal Cultural Resource contained in the adopted/certified Focused Environmental Impact Report ("Original EIR",

[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.

SCH#2021020054, Visalia Landfill – Compost and Biomass Conversion Facility, Mitigation Measures, Findings of Fact, Board of Supervisors Resolution No. 2022-0841, Notice of Determination, etc., are incorporated herein in their entirety, as applicable. As such, Mitigation Measures 3.9-1 through 3.9-3 contained in the Original EIR are incorporated herein, but have been renumerated as Mitigation Measures, 3.7-1 through 3.7-3. As an abundance of caution, Mitigation Measures 3.7-1 through 3.7-3 are included in the unlikely event that Native American remains or tribal cultural resources are unearthed during any ground disturbance activities. These measures 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 3.7-1** through **3.7-3**.

Mitigation Measure(s): ***See Mitigation Measure 3.7-1*** through ***3.7-3***

3.7-1. 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.

3.7-2. 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.

3.7-3 Prior to the start of construction the applicant will conduct a tailgate meeting in cooperation with the Santa Rosa Rancheria Tachi Yokut Tribe to train all construction staff that will be involved with the project regarding Tribal Cultural Resources.

Therefore, as noted earlier, in the unlikely event that Tribal Cultural Resources are discovered, implementation of **Mitigation Measures 3.7-1** through **3.7-3** 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 3.7-1** through **3.7-3**.

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 3.7-1 through 3.7-3***

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. The cumulative list contained in the Original EIR is incorporated and have been summarized as follows (*Note: The status of projects listed below have been updated to reflect current status*):

- **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 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). 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 2030 Update is consistent with the 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 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 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; the Update did not propose any changes to the existing Terra Bella UDB and remains at 1,393 acres. 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. The Pixley Community Plan is consistent with Tulare County General Plan 2030 Update.

- **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). Tipton's Urban Development Boundary contains approximately 1,008 acres. The Tipton Community Plan is consistent with Tulare County General Plan 2030 Update.

- **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.

- **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 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. The Poplar/Cotton Center Community Plan is consistent with the Tulare County 2030 General Plan Update.

- **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).

- **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).

- **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).

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):

- **Pena's:** Status – Approved. The project is for Peña's Material Recovery Facility (MRF) and Transfer Station (TS) which sits on 18.01 acres that was 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; respectively. 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).

- **Pixley Biogas:** Status – Approved. The project is for development of a biogas facility on 2.75-acre portion of an 8 acre parcel in Pixley, CA. 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.

- **Harvest Power:** Status – Approved. The project is for a Composting Expansion and Anaerobic Digester (south of the City of Visalia). 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.

- **Summerlyn (formerly Hash Farms and Andersen Village) 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. The 54-acre site is located within Tulare and Fresno Counties. 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 also completed 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.

- **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; 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.

- **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, approximately one (1) mile west of State Route 99 (SR 99) and east of Road 76 in an unincorporated area of Tulare County. 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.

- **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. PMR 14-002 would 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 to a maximum of 1,500,000 tpy; increase truck hauling to a maximum of 600 round-trips per day; 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 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 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.

- **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 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.

- **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 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.

- **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.

- **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.

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 **Table 4-2**. It is noted that the Mitigation list in **Table 4-2** is identical to those contained in the Original EIR and have been included in this discussion as there are no changes in significance of impacts to the respective resources. It is also noted that this SEIR does not include evaluation of the Project's potential impacts to Cultural Resources or Geology and Soils; however, as the Original EIR, is incorporated by reference, all measures remain applicable. Also, see Chapter 8 Mitigation Measures and Reporting Program **Table 8-1** for the complete discussion regarding mitigation.

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

REFERENCES

California Environmental Quality Act (CEQA) Guidelines. Sections 15130 (e) and 15355 Accessed October 2021 at: September 2023 at: https://www.califaep.org/docs/CEQA_Handbook_2023_final.pdf or 2023 CEQA Statutes and Guidelines (califaep.org)

Tulare County Association of Governments (TCAG). Regional Transportation Plan 2018. Tulare County Regional Blueprint. Accessed September 2023 at: https://tularecog.org/tcag/planning/rtp/rtp-20181/tulare-county-blue-print/

Tulare County. Tulare County General Plan 2030 Update. Background Report. August 2012. Accessed September 2023 at: http://generalplan.co.tulare.ca.us/documents/GeneralPlan2010/BackgroundReport.pdf.

Tulare County. Tulare County General Plan 2030. Update Recirculated Draft Environmental Impact Report. Accessed September 2023 at: http://generalplan.co.tulare.ca.us/documents/generalplan2010/RecirculatedDraftEIR.pdf.

Chapter 5
Alternatives

INTRODUCTION

CEQA Guidelines Section 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 Section 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 Section 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 Section 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 Section 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 Section 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 Section 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

It is noted that the County of Tulare (County) is not amending its existing permit for the Visalia Disposal (Landfill) site. Rather, the County is proposing a new, standalone permit for the biomass conversion/composting facility to exclusively receive 1,000 TPD of organic material as feedstock and 300 haul truck trips per day to transport the organic material to the Landfill site's biomass conversion/composting facility. It is anticipated that the landfilling operations at the Landfill will not change, that is, it will still be permitted to receive a maximum of 2,000 TPD of landfilling material and 900 vehicle trips per day. When combined with the biomass conversion/composting facility's tonnage and vehicle trips, the Landfill will cumulatively receive a maximum of 3,000 TPD of material and 1,200 vehicle trips.

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:

[1] 2013 CEQA Guidelines, Section 15021

- Increase tonnage to 3,000 tons per day (TPD) at the existing Landfill site to be split between the landfilling operation (2,000 TPD) and the biomass conversion/compost facility (1,000 TPD). It is anticipated that, over time, a maximum of 900 vehicle trips (the current permitted trips limit) per day would deliver landfilling material and 300 additional haul truck trips would deliver organic material to be used exclusively as feedstock for the biomass conversion/composting 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:

- Increase the maximum total daily tonnage to 3,000 TPD and 1,200 vehicle trips per day received by and within the existing footprint of the Visalia Landfill. Retain Visalia Landfill's permit allowing 2,000 TPD solid waste stream and 900 vehicle trips. Receive a new, standalone permit that allows up to 1,000 TPD of organic material to be used for the biomass conversion/composting component (resulting in 3,000 TPD permitted for the Landfill). Additionally, the new standalone permit would include up to 300 daily haul truck trips that would be exclusively used to import organic material (i.e., bio material) to be used as feedstock for the biomass conversion/composting component of the Project; this would be in addition to the currently permitted 900 daily vehicles resulting in 1,200 total vehicles per day at the Landfill.
- 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;
- 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 biomass conversion/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 a 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. Reduce the daily increase of haul truck trips from 300 to 150.

Alternative 1: No-Project

This section discusses the mandatory "No-Project" alternative. Under this alternative, the 2,000 TPD maximum would be retained and there would be no change to the existing 900 daily vehicle trips. As approved in the Original EIR, the 2,000 TPD would consist of 1,000 TPD for landfilling purposes and 1,000 TPD for biomass conversion/composting would be implemented and the maximum of 900 daily vehicle trips would be retained as currently permitted.

Description. Under this alternative, the 2,000 TPD maximum and 900 vehicle trips per day would be retained as previously approved by the Board of Supervisors and as analyzed in the adopted/certified Original EIR. As noted earlier, 1,000 TPD would be used for landfilling purposes and 1,000 TPD would be diverted as feedstock for the biomass conversion/composting facility. The maximum 900 daily vehicle trips would be retained and no additional haul truck trips would be used to exclusively transport feedstock to the biomass conversion/composting facility. 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 not meeting two critical project objectives or project-specific elements as follows:

- Failure to provide landfilling capacity and likely reduce the lifespan of the landfilling component of Visalia Landfill; and
- Failure to allow 300 additional truck haul trips to transport organic material to be used exclusively as feedstock.

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 additional landfilling capacity over time. The No Project Alternative would also fail to achieve the feedstock supply necessary for the biomass conversion/composting facility. Over time, this would result in failure 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 most 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: Reduce number of proposed haul trip increase

Alternative 2 would reduce the maximum daily increase of haul truck trips from 300 to 150 for transport of organic material to be used exclusively as feedstock for the biomass conversion/composting component at Visalia Landfill. Rather than increase the total number of

vehicles entering the Landfill from 900 to 1,200; this Alternative would result in 1,050 daily vehicles.

Description. Under Alternative 2, the proposed Project would reduce the number of the proposed increase of 300 haul truck trips to 150 haul truck trips. As noted earlier, the intent of the proposed increase in haul truck trips is to transport organic material to be exclusively used as feedstock to the biomass conversion/composting facility. This Alternative is unlikely to supply the quantity (tonnage) of daily feedstock needed and would reduce the efficiency, effectiveness, and design capacity/capability of processing/producing of biomass conversion/composting. As such, this reduction would not allow the County to be fully compliant with the objectives/intent of AB 341 (diversion from landfills) or SB 1383 (reduction of organics to mitigate methane emissions).

Environmental Considerations. A change in reduced haul truck trips to transport organic material exclusively to the biomass conversion/composting facility would result in reduced impacts to the following resources: Air Quality (decrease in emissions due to less vehicles transporting unprocessed and processed organic material); Energy (less fuel consumption of vehicles due to less vehicles transporting unprocessed and processed organic material), Transportation (decreased traffic along various County and/or state roadways, vehicle miles travelled); and Utilities and Service Systems (less diversion reduction required by statutes and regulations related to solid waste). The following benefits would be temporary as the population centers and commercial/industrial uses served by the landfill will continue to grow over time necessitating the need for future landfill space: reduced vehicle trips include reduced air quality emissions (oxides of nitrogen and particulate matter), reduced greenhouse gases emissions; reduced trips/transport of unprocessed and processed organic material; and reduced use of fuel from vehicles used to transport of unprocessed and processed organic material.

Alternative 2 would result in not fully meeting critical project objectives or project-specific elements as follows:

- 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;
- 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.

Therefore, it is reasonable to conclude that a reduction in proposed haul trips for transport of unprocessed and processed organic material would not, ultimately, result in long-term realization of all the Project Criteria (in conjunction with the landfilling component) listed earlier in this Chapter; especially in the critical areas such as: Evaluation Criteria 1: Project Specific Elements; Criteria 2: Project Objectives; Criteria 3: Minimize Costs; and Criteria 4: Operational Efficiency.

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 retain 2,000 TPD of material for landfilling purposes and adding 1,000 TPD for biomass conversion/composting purposes and increasing vehicle trips to transport organic material exclusively for biomass conversion/composting purposes in response to upcoming waste diversion mandates. Factors considered in the comparison of Alternative 2 (Reduce number of proposed haul trip increase) 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 and 2 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. 3 Reduced haul truck trips
1. Project Specific Elements	No	No
2. Project Objectives	No	No
3. Minimize Costs	No	Yes
4. Operational Efficiency	No	No
5. Lessen Significant Impacts	Yes	Yes
6. Physical Feasibility	No	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 an increase to a maximum total daily tonnage to 3,000 TPD and 1,200 vehicle trips per day received by and within the existing footprint of the Visalia Landfill. As noted earlier, the intent of the proposed Project is to retain Visalia Landfill's existing permit that allows 2,000 TPD solid waste stream and 900 vehicle trips. Additionally, the County is requesting a new, standalone permit that allows up to 1,000 TPD of organic material to be used for the biomass conversion/composting component (resulting in 3,000 TPD permitted for the Landfill). The new standalone permit would include up to 300 daily haul truck trips that would be exclusively used to import organic material (i.e., bio material) to be used as feedstock for the biomass conversion/composting component of the Project; this would be in addition to the currently permitted 900 daily vehicles resulting in 1,200 total vehicles per day at the Landfill 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. As indicated later, this Alternative would be the Environmentally Superior Alternative.

Alternative 2 – Reduced haul truck trips. As noted earlier, the County is requesting a new, standalone permit that allows up to 1,000 TPD of organic material to be used for the biomass conversion/composting component would include up to 300 daily haul truck trips that would be exclusively used to import organic material (i.e., bio material) to be used as feedstock for the biomass conversion/composting component of the Project. Under Alternative 2, the proposed increase in vehicle trips for the proposed Project would be reduce to 150 haul truck trips thereby increasing the total number of daily vehicle trips allowed at the Landfill from 900 daily vehicles to 1,050. the development of the composting facility. Operations would essentially be the same as the proposed Project except that biomass conversion facility would not operate to its fullest potential (that is, to fully maximize biomass conversion/composting to its design capacity). The comparison of Alternative 2 to the proposed Project includes less impact to the following resources: air quality, energy, greenhouse gas emissions, and transportation (traffic). See **Table 5-2** as it contains a comparison of the Alternative's and the proposed Project's abilities to achieve the Project objectives and reduce environmental impacts.

Environmentally Superior Alternative

Alternative 1 (No Project) would be the Environmentally Superior alternative because it would result in less adverse significant impacts to the environment as noted above. However, Alternative 1 would not meet the County's Project objectives, particularly with regard to the County's goal to reduce organic waste from landfill disposal. It does not meet all of the evaluation criteria and importantly, and it would not meet the economic and regulation objectives of the Project. The proposed Project would, importantly, allow compliance and implementation of State mandates (i.e.; legislation and requirements) such as AB 1826 (Chesbro, 2014), AB 341 (Chesbro, 2011), and SB 1383 (Lara, 2016) which would phase in mandatory commercial organic waste collection; mandatory commercial recycling collection; and 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; respectively, whereas the No Project Alternative would not.

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 Reduced haul truck trips
Air Quality	Less	Less
Biological Resources	Less	Similar
Cultural Resources	Less	Similar
Energy	Less	Less
Geology and Soils	Less	Similar
Greenhouse Gas Emissions	Less	Less
Hydrology and Water Quality	Less	Similar
Transportation and Traffic	Less	Less
Tribal Resources	Less	Similar
Cumulative Impacts	Less	Similar
Impact Reduction	**Yes**	**Yes; however, reduction would be temporary over time**

SUMMARY AND DETERMINATION

Alternatives 1 and 2 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; most critically, Criteria 2 where State mandates (i.e.; legislation and requirements) such as AB 1826 (Chesbro, 2014), AB 341 (Chesbro, 2011), and SB 1383 (Lara, 2016) are noted. After this full, substantial, and deliberate analysis; the proposed Project remains the preferred alternative.

REFERENCES

See references cited in Chapter 3-1 – Air Quality; Chapter 3-2 – Biological Resources; Chapter 3-3 – Energy; 3-4 – Greenhouse Gas Emissions; Chapter 3-5 – Hydrology; Chapter 3-6 – Transportation; and Chapter 3.7 – Tribal Cultural 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 9.6 percent in October 2023, up from a revised 8.9 percent in September 2023, and above the year-ago estimate of 8.0 percent. This compares with an unadjusted unemployment rate of 4.8 percent for California and 3.6 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, 2020[2]

Demographic Profile Data	***Tulare County***
Total	*473,117*
% Hispanic or Latino	*65.5%*
% not Hispanic or Latino	*34.5%*
White alone (Not Hispanic or Latino)	*39.4%*
Black or African American alone	*1.4%*
American Indian and Alaska Native alone	*2.2%*
Asian alone	*3.6%*
Native Hawaiian and Other Pacific Islander alone	*0.2%*
Some other race alone	*34.9%*
Two or more races	*18.3%*
Total housing units	*150,652*

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 December 2023 at: http://www.labormarketinfo.edd.ca.gov/file/lfmonth/visa$pds.pdf.

[2] U.S. Census Bureau, 2020 Decennial Census. Table ID: DP1 Profile of General Population and Housing Characteristics Accessed September 2023 at: https://data.census.gov/table/DECENNIALDP2020.DP1?q=profile%20of%20general%20population%20and%20%20characteristics&g=050XX00US06107 or Tulare County 2020 Population and Housing

(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

[3] California Natural Resources Agency. California Environmental Quality Act (CEQA) Guidelines. Section 15131. Accessed September 2023 at: 2023 CEQA Statutes and Guidelines (califaep.org) or 2023 CEQA Statutes and Guidelines (califaep.org)

forms of environmental pollution." Among other things, E.O. 12898 directed federal agencies to incorporate environmental justice into their missions."[4]

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

[4] State of California. Governor's Office of Planning and Research. General Plan Guidelines Chapter 4: Required Elements. 2020. Page 4. https://www.opr.ca.gov/docs/20200706-GPG_Chapter_4_EJ.pdf or General Plan Guidelines Chapter 4: Environmental Justice Element (ca.gov)

[5] California Natural Resources Agency. California Environmental Quality Act (CEQA) Guidelines. Section 15126.2. Accessed September 2023 at: 2023 CEQA Statutes and Guidelines (califaep.org) or 2023 CEQA Statutes and Guidelines (califaep.org)

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.

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

California Natural Resources Agency. California Environmental Quality Act (CEQA) Guidelines. Sections 15131 and 15126.2. Accessed September 2023 at: 2023 CEQA Statutes and Guidelines (califaep.org) or 2023 CEQA Statutes and Guidelines (califaep.org)

State of California. Governor's Office of Planning and Research. General Plan Guidelines Chapter 4: Required Elements. 2020. Page 4. https://www.opr.ca.gov/docs/20200706-GPG_Chapter_4_EJ.pdf or General Plan Guidelines Chapter 4: Environmental Justice Element (ca.gov)

State of California. Governor's Office of Planning and Research. General Plan Guidelines and Technical Advisories 2020. Accessed September 2023 at: https://www.opr.ca.gov/planning/general-plan/guidelines.html or General Plan Guidelines and Technical Advisories - Office of Planning and Research

State of California Employment Development Department. Unemployment Rate and Labor Force, Monthly EDD Press Release. Accessed in September 2023 at: http://www.labormarketinfo.edd.ca.gov/file/lfmonth/visa$pds.pdf.

United States. Census Bureau. 2020 Decennial Census. Table ID: DP1, Profile of General Population and Housing Characteristics. Accessed in September 2023 at: https://data.census.gov/table/DECENNIALDP2020.DP1?q=profile%20of%20general%20population%20and%20%20characteristics&g=050XX00US06107

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] CEQA Guidelines. Section 15126.2 (b). Accessed July 2023 at: https://www.califaep.org/docs/CEQA_Handbook_2023_final.pdf or 2023 CEQA Statutes and Guidelines (califaep.org)
[2] Ibid.

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] Op. Cit. Section 15043.
[4] Op. Cit. Section 15093 (a).
[5] Op. Cit. Section 15093 (b).
[6] Op. Cit. 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 the Landfill to accept a maximum of 3,000 tons of daily material and add a maximum of 300 daily haul trucks.

The Project would allow the County to amend its Landfill permit to continue the 2,000 TPD waste stream to be landfilled and to receive a standalone per import 1,000 TPD of organic material to be diverted to the biogas conversion/composting facility. Overall, the Landfill would receive a maximum of 3,000 TPD. In addition to the currently permitted maximum of 900 vehicles per day for the Landfill permit, the standalone permit would add a maximum of 300 haul trucks per day entering the Landfill to import organic (bio) material to be used as feedstock for the biomass conversion/composting component of the Project. Overall, the Landfill would receive a maximum of 1,200 vehicles per day.

Project Benefit #3: Would allow a biomass conversion facility

The Project would contribute to alternative energy production through the development and operation of a 2.0 mega-watt biomass conversion facility to produce electricity, heat and biochar using wood fuel (in conjunction with the composting facility to comply with SB 1383 regulations implement local and state landfill diversion goals), produce approximately 20-30 MM BTU of waste heat, and produce approximately 300-600 pounds of biochar per hour.

Project Benefit #4: Would allow composting of up to 200,000 tons annually

The Project would contribute to implement 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 #5: 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 #6: Implements Tulare County General Plan policies for solid waste.

The proposed Project implements County policies to reduce, recycle, and compost waste materials (in conjunction with the biomass conversion facility); and ensure adequate capacity

within the solid waste system for the processing, recycling, transmission, and disposal of solid waste.

Project Benefit #7: 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 3-7. The sixty-eight (68) General Policies noted in the Original EIR remain applicable; the following sixty-two (62) policies are applicable to this Focused SEIR:

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. 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

VI 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

VII 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

VIII. TRIBAL CULTURAL RESOURCES – 7 Policies

ERM-6.1	Evaluation of Cultural and Archaeological Resources
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ERM-6.4	Mitigation
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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 Resources

REFERENCES

California Natural Resources Agency. California Environmental Quality Act (CEQA). Sections 15126.2(c), 15043, 15091(a)(3), and 15093 (a)(b)(c) Accessed September 2023 at: https://www.califaep.org/docs/CEQA_Handbook_2023_final.pdf or 2023 CEQA Statutes and Guidelines (califaep.org)

Tulare County. Background Report Tulare County General Plan. Accessed September 2023 at: http://generalplan.co.tulare.ca.us/documents/GeneralPlan2010/BackgroundReport.pdf.

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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 Focused Subsequent Environmental Impact Report (SEIR) for the proposed Project. The Focused Environmental Impact Report (SCH# 2021020054) prepared for the Visalia Landfill – Compost and Biomass Conversion Facility (Original EIR), adopted/certified by the Tulare County Board of Supervisors on September 27, 2022 via Resolution No. 2022-084, has been incorporated by reference. As such, the MMRP (**Table 8-1**) includes the mitigation measures recommended in the Draft Focused SEIR for the proposed Project and identifies monitoring and reporting requirements, as well as those measures adopted in the Original EIR.

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 reported. As necessary the reporting should indicate any follow-up actions that might be required 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 40.46 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 Department / Planning Department	County of Tulare Solid Waste Department			
3.2 BIOLOGICAL RESOURCES							
Swainson's Hawk (SWHA)							
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 Department	County of Tulare Solid Waste Department			
3.2-2 *Pre-construction Surveys*. If construction activities in the rural zone must occur between March 1 and September 15, then 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 Department	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 if nests are discovered within the Project site, an appropriate disturbance-free buffer will be established around the nest based on local conditions and in consultation with the CDFW. 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 Department	Qualified biologist.			
Burrowing Owl (BUOW)							
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 Department	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, then a 250-foot construction	Prior to construction-related activities.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable	County of Tulare Solid Waste Department 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
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.	Prior to construction-related activities.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable	County of Tulare Solid Waste Department 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 (SJKF)							
3.2-7 *Pre-construction Surveys.* Pre-construction surveys shall be conducted by a qualified biologist 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 for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (2011)*. 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, then 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 Department and CDFW	Qualified biologist			
3.2-8 *Avoidance.* Should a kit fox be found using any of the sites during preconstruction surveys, then 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 Department and CDFW	County of Tulare Solid Waste Department & 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
3.2-9 *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.	Prior to and during construction	Issuance of building permit	County of Tulare Solid Waste Department and CDFW	County of Tulare Solid Waste Department & Qualified biologist			
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 Department 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	During construction	Issuance of building permit	County of Tulare Solid Waste Department and CDFW	County of Tulare Solid Waste Department &			

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
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.				Qualified biologist			
Tricolored Blackbird (TRBL)							
3.2-12 *Pre-construction Surveys*. If construction activities must occur between February 1 and September 15, then a qualified biologist will conduct pre-construction surveys to determine the presence/absence of tricolored blackbirds on and, to the extent feasible, within 500 feet of the project site, no more than 10 days prior to the start of construction. Should any tricolored blackbirds be discovered within the survey area, then the observation will be submitted to the CNDDB, and the local CDFW office (Fresno) will be contacted. Additional measures, if any, will be identified in consultation with the CDFW based on local conditions.	Prior to construction-related activities.	Retention of professional biologist/ongoing monitoring/submittal of Report of Findings, if applicable	County of Tulare Solid Waste Department	Qualified biologist			
3.3 CULTURAL RESOURCES							
3.3-1 In the event that historical, archaeological, or paleontological resources are discovered during site excavation, then 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/	During construction	Daily or as needed throughout the construction period if suspicious resources are discovered	County of Tulare Solid Waste Department 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			

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
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.				taken to mitigate for unique resource or human remains found, consistent with all applicable laws including CEQA.			
3.3-2 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, then 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, then the following steps must 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	During construction	Daily or as needed throughout the construction period if suspicious resources are discovered	County of Tulare Solid Waste Department 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 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
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 most likely descendent or the most							

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
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, then 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 Solid Waste Department 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 Solid Waste Department determines avoidance is not feasible, then the paleontologist shall design and implement a data recovery plan consistent with applicable standards. The plan	During construction activities.	Daily or as needed throughout the construction period if suspicious resources are discovered	County of Tulare Solid Waste Department	County of Tulare Solid Waste Department			

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
shall be submitted to the Tulare County Solid Waste Department 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, paleontological, or tribal cultural resources are discovered during site excavation, then 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, a unique paleontological resource, or a tribal cultural resource, or to undertake data recovery, 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 Department / 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, then 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, then the following steps must 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 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
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.							
3.9-3 Prior to the start of construction the applicant will coordinate with the Santa Rosa Rancheria Tachi Yokut Tribe to provide a	Prior to initiation of construction	Issuance of grading/building permit	County of Tulare Solid Waste Department /	County of Tulare Solid			

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
tailgate meeting to train all construction staff that will be involved with the project regarding Tribal Cultural Resources.			Planning Department	Waste Department			

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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Technical documents have been prepared by:

- Tulare County Resource Management Agency – *Biological Resources Evaluation for the Visalia Landfill - Compost and Biomass Conversion Facility Project.* November 2023. (See Appendix "B")
- Yorke Engineering, LLC. – *Air Quality and GHG Technical Report for the Tulare County Solid Waste Department Compost and Biomass Conversion Facilities.* November 2023. (See Appendix "A")

APPENDIX “A”

AIR QUALITY AND GREENHOUSE GAS EMISSIONS

Air Quality and GHG Technical Report
November 2023

Air Quality and GHG Technical Report
November 2021 (from Original EIR)

Administrative Draft

Tulare County Resource Management Agency Solid Waste Department

Compost and Biomass Conversion Facilities

Visalia Landfill
8614 Avenue 328
Visalia, CA 93291

November 2023

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Air Quality and GHG Technical Report

Air Quality and GHG Technical Report

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November 2023

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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

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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)

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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

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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 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 Disposal Site 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 entail installation and operation of 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) biomass conversion facility at the Visalia Disposal Site. The County intends to enter into a public/private partnership to operate this facility as well. The facility will use waste wood as the feedstock to produce electricity, heat, and biochar. The wood waste would also be diverted from the landfill. The facility will utilize approximately 18,000 bone-dry tons (BDT) of recovered wood chips per year (approximately 25,000 TPY of wet wood waste). The facility will produce 2.0 MW (net) of electrical energy and, in addition, 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 biomass conversion 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 Disposal Site, 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;

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- 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 more than 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, and the comparison of those emissions to the mass-based significance thresholds. 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 2022.1.1.20 (CAPCOA 2022), 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 applicable SJVAPCD California Environmental Quality Act (CEQA) significance thresholds. As shown, the criteria pollutant emissions due to Project construction are less than significant.

Operations Emissions

Operational emissions were estimated based on proposed throughput of both the compost and the biomass conversion facilities 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 the purchase of 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 volatile organic compound (VOC) ERCs in the amount of 40.46 TPY, emissions from the proposed Project would be less than the

[1] Criteria pollutants are pollutants for which federal or State ambient air quality standards ("criteria") 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.

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CEQA significance thresholds for criteria pollutant emissions from construction and operation of permitted and non-permitted sources.

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	2.46	1.83	3.48	0.01	0.38	0.17
CEQA Construction Threshold	10	10	100	27	15	15
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*
Project Permitted Source Emissions	3.98	49.37	26.57	0.54	1.76	0.85
SJVAPCD Rule 2202 ERCs[1]	NR	40.46	NR	NR	NR	NA
Net emissions after Offsets	3.98	9.0	26.57	0.54	1.76	0.85
CEQA Permitted Source Threshold	10	10	100	27	15	15
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*
Project Non-Permitted Source Emissions	6.85	0.49	8.00	0.05	2.11	0.49
CEQA Non-Permitted Source Threshold	10	10	100	27	15	15
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

Notes:

1. The quantity of ERCs required for the Compost Project will depend on how the facility is permitted. The quantity of ERCs required would be 40.46 TPY if the facility is permitted as part of the existing landfill and would be 61.68 TPY if permitted as a new stationary source. The lower value of 40.46 TPY is used in the significance determination as it is a more conservative approach; applying more ERC would lower the value of the 'Net emissions after offsets'. Please see Section 2.3.4 for additional details on the determination of ERC requirements. The Biomass Conversion Facility emissions will not exceed the offset threshold for any pollutant and offsets would not be required.

NR: Not required (below SJVAPCD NSR offset thresholds).

NA: Not Applicable (not subject to offsets).

Ambient Air Quality Analysis

Air dispersion models are used to predict the atmospheric transport and fate of pollutants from the emissions sources. 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.

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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 (PS) 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 PS 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 PS of less than 1 are low risk and are not likely to have an adverse health risk.
- Intermediate Score: Projects having a PS of 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 PS 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 PS 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 PS 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 are less than significant.

Table ES-2: Summary of Prioritization Scores

Project Phase	Acute	Chronic	Cancer	Prioritization Score
Construction	–	0.0068	4.57	Intermediate
Operations	0.76	0.065	3.54	Intermediate

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Odor Impact Assessment

The proposed Project will divert organics from the landfill to the compost and biomass conversion facilities. The compost facility 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. Construction GHG emissions are typically amortized over the assumed 30-year life of the Project. Construction GHG emissions are summarized in Table ES-3.

Operations Emissions

The proposed Project is fundamentally a landfill diversion project: the compost and biomass conversion facilities 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 8,800 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)	72.57	0.00	0.00	73.73
Mobile Sources	4,375	52	11	4,521
Compost Facility	–	–	–	(17,378)
Biomass Conversion Facility	–	–	–	
Subtotal New Sources	4402	52	11	(12,783)
Baseline – Landfill	–	–	–	(3,977)
Total	–	–	–	**(8,806)**

[2] GHGs include, but are not limited to, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O).

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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 any 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 SJVAPCD NSR-required ERCs 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. 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 biomass conversion 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 including the purchase of VOC ERCs, 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.

GHG emissions would be reduced with the implementation of the Project and hence, the Project would have a beneficial impact.

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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 Disposal Site 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 biomass conversion facility at the Visalia Disposal Site. 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 recovered wood chips per year (approximately 25,000 TPY of wet wood waste). The facility will produce 2.0 MW (net) of electrical energy and, in addition, 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 more than 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 Disposal Site, 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

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- 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 Disposal Site 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 biomass conversion facility is provided as Figure 1-3.

1.3 Current Operations

The Visalia Disposal Site is operated by the Tulare County Resource Management Agency (RMA). Landfill operations are conducted on 129 acres of the approximately 634-acre property. The landfill 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.

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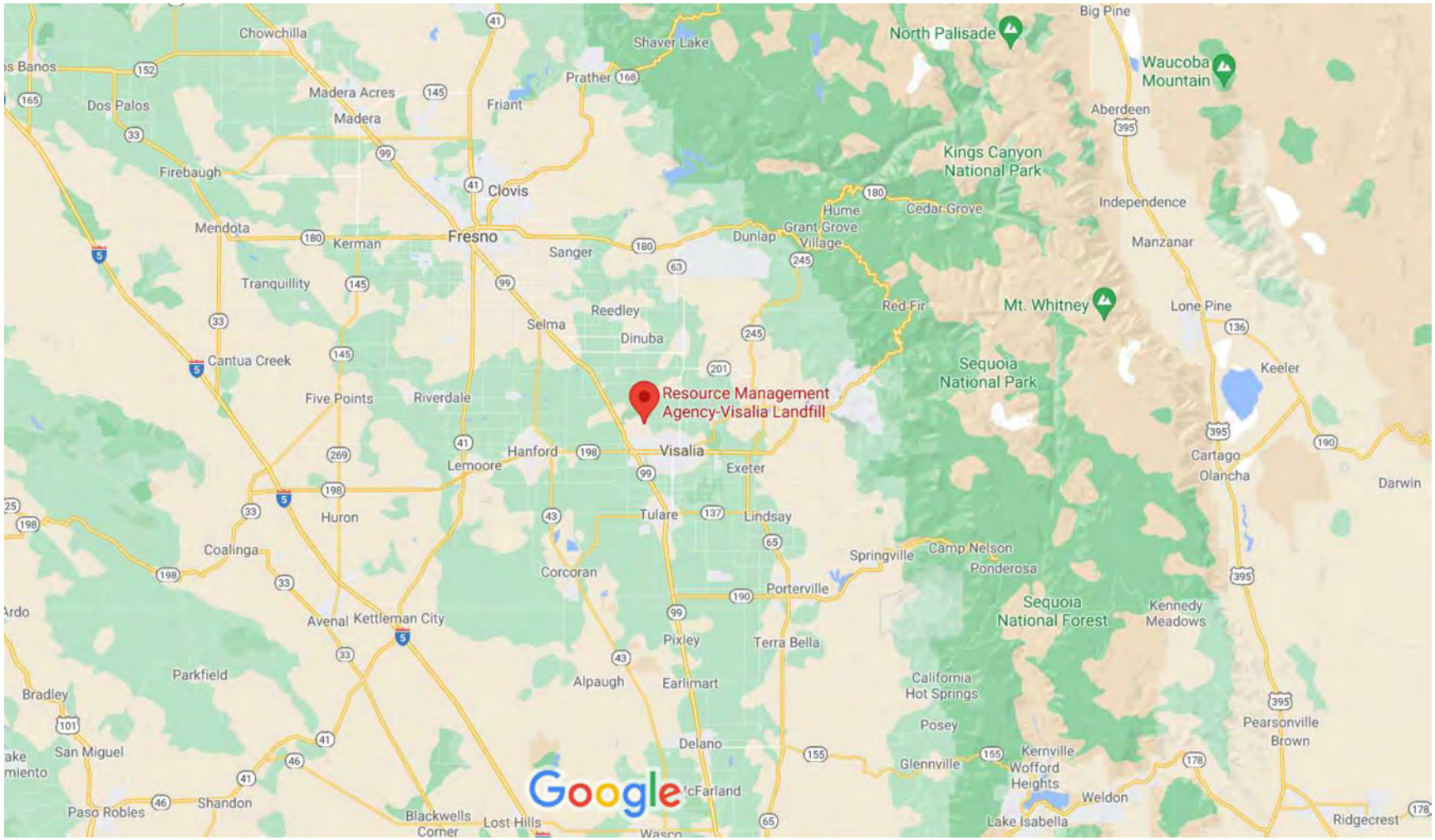

Figure 1-1: Regional Location of the Visalia Disposal Site

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Figure 1-2: Aerial Photograph of the Visalia Disposal Site and Surrounding Properties

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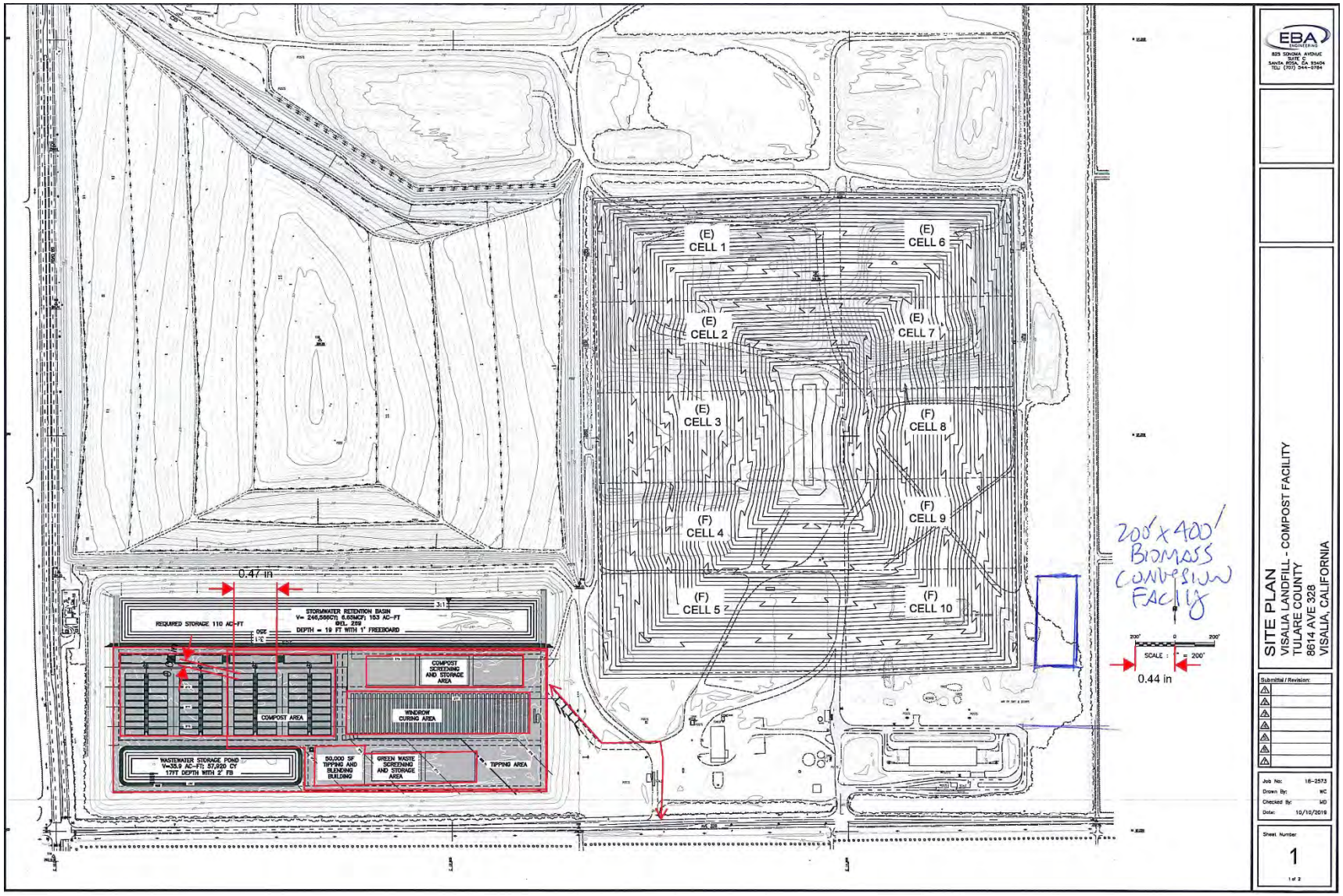

Figure 1-3: Plot Plan Visalia Disposal Site Facility with Compost and Biomass Conversion Facilities

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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, with a peak seasonal capacity of 1000 TPD.

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

[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, 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.

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cleared and grubbed for the proposed compost facility. Construction at the site would last 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 biomass conversion 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 the compost and biomass conversion 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 1,000 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 compost facility to accept organic waste and "mixed materials" classified consistent with AB 1826 and SB 1383 definitions. The additional types of mixed materials and organic wastes would include various types of food material (including post-consumer food waste, food-soiled paper, and 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. 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 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.

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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 be adjusted to 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)

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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;

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- 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 (part of the CASP design).

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

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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 feedstock reduces the volume of material, increases the surface area which promotes 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. Water is added as necessary to adjust moisture content to between 40 and 65% by weight.

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Feedstock delivered to the facility will be processed one of four ways, depending on the feedstock:

- Some 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. It is anticipated that 20% of the total throughput would be placed directly into the CASP, bypassing feedstock storage.
- 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. 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 limited to 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.

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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 closer 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 following receipt 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 receiving storage pile with a front-

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end loader into an infeed bin to be mechanically separated from the residual non-compostable 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 each 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 may be 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 equal or lower emissions compared to the positively aerated CASP described herein. Another alternative is a reversing air system in which the airflow is positive during some periods of operation and negative during other periods. 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.

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 airflow into the compost material (positive aeration) or pull airflow through the pile (negative aeration) during the active compost phase. A biofilter cover will be used for VOC emissions control.

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Temperature Control

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 naturally 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.

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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 (known as the "unders"), to remove oversized particles (e.g., woodchips) and contaminants (e.g., 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 in 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;

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- 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 Biomass Conversion 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, and consists primarily of carbon. 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 of the process (EM-1 through EM-5) is provided as Figure 1-4.

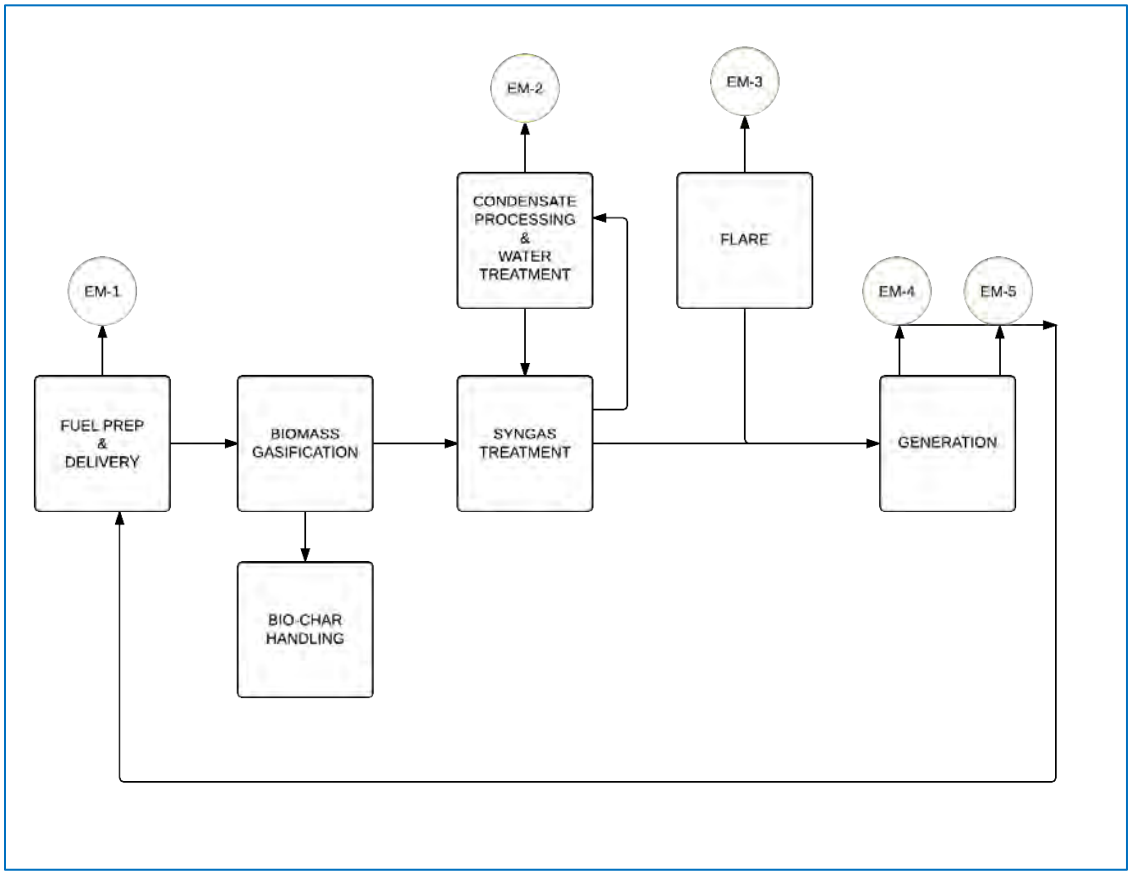

Figure 1-4: Tulare County Biomass Conversion Facility Process Flow Diagram

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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 Project engines. Particulate emissions from the dryer would be controlled by a cyclone.

1.5.3.3 Biomass Conversion (Gasification)

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.

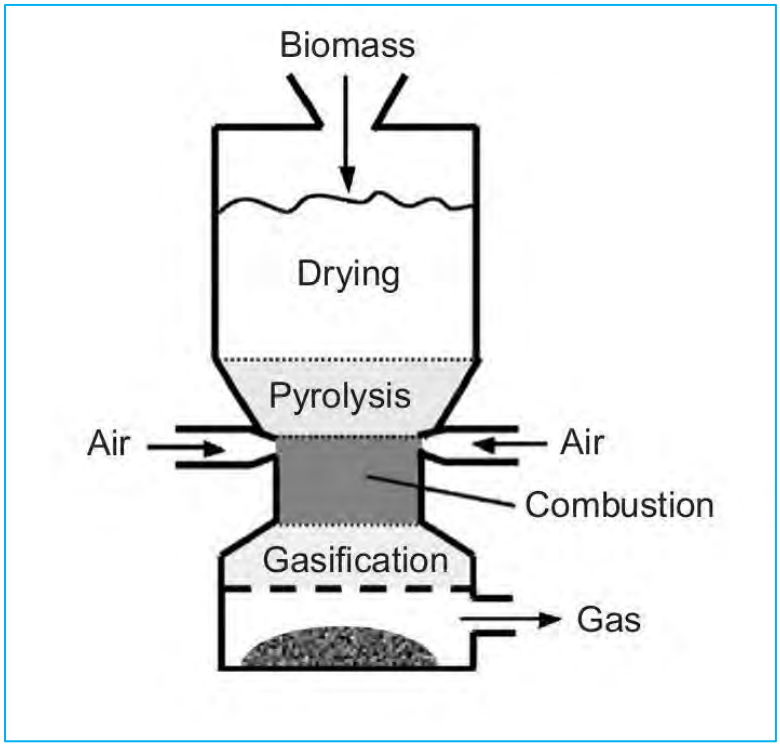

Figure 1-5: Gasifier Schematic

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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 in the genset engines. If the engines are offline due to malfunction or maintenance, the syngas would be diverted to a flare for destruction. 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 while the gasifier is 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 similar to the condensate found in natural gas or propane pipelines and will contain trace amounts of hydrocarbons. Phoenix Energy and its technology partners plan to utilize a suite of separation technologies, including flocculation, settling, and other treatment which will remove the majority of particulates and hydrocarbons from the condensate. Cleaned water may be used as make-up water for 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 0.39 pounds per hour.

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2.0 EXISTING AIR QUALITY SETTING

The Visalia Disposal Site is located in the southern region of the San Joaquin Valley near the community of Visalia in Tulare County, CA. The existing settings 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.

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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.

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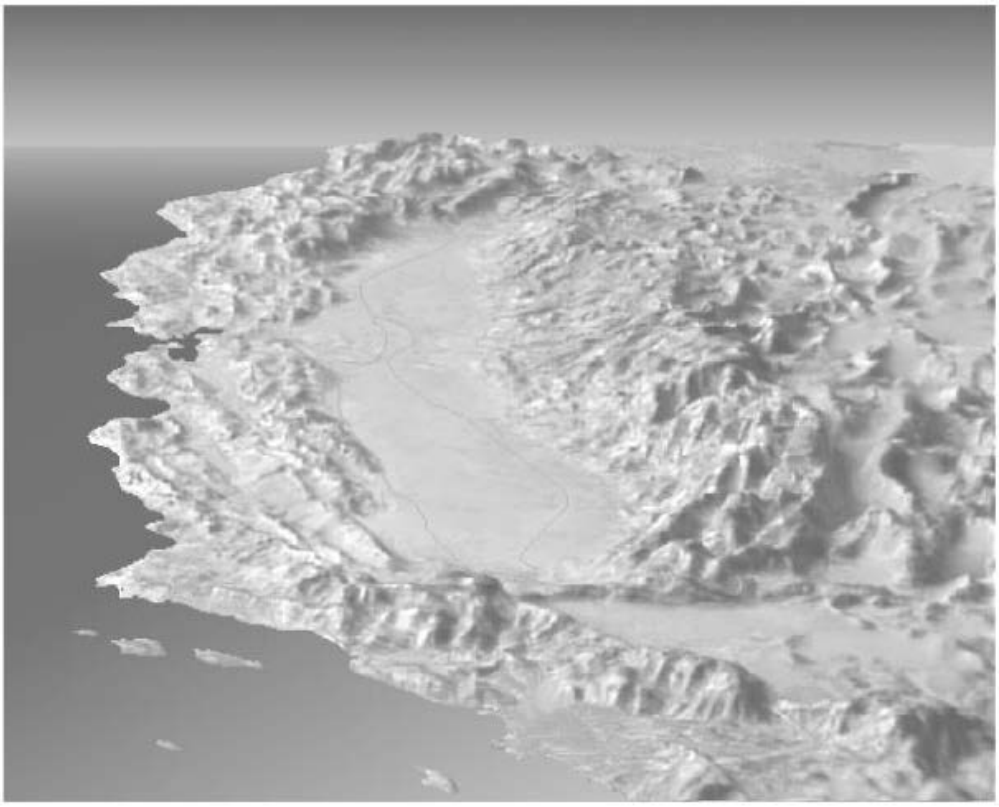

Figure 2-2: Aerial View of the San Joaquin Valley Air Basin

The SJVAB is in 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

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surface. Pollutant emissions 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.

Winds in the valley most frequently blow from the northwest, especially in summer. 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.

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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

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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

<u>Ozone (O_3):</u> 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 human-caused materials, such as rubber, paint, and plastics.

<u>Oxides of Nitrogen (NO_x):</u> 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.

<u>Volatile Organic Compounds (VOC):</u> 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).

<u>Total Organic Gases (TOG):</u> includes all of the ROGs, in addition to low-reactivity organic compounds like methane and acetone. ROGs and VOC are subsets of TOG.

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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

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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.

Hydrogen Sulfide (H_2S): 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.

Sulfates (SO_4^{2-}): 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.

Visibility-Reducing Particles: 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.

Vinyl Chloride [C_2H_3Cl, also known as vinyl chloride monomer (VCM)]: 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.

Diesel particulate matter (DPM): 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

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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

Valley Fever (Coccidioidomycosis): 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 ecological 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 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

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underestimates the true number of Valley Fever cases. Tens of thousands more illnesses are likely to 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 (or unclassified) 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} (CARB 2023a). 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, limiting 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.

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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

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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.

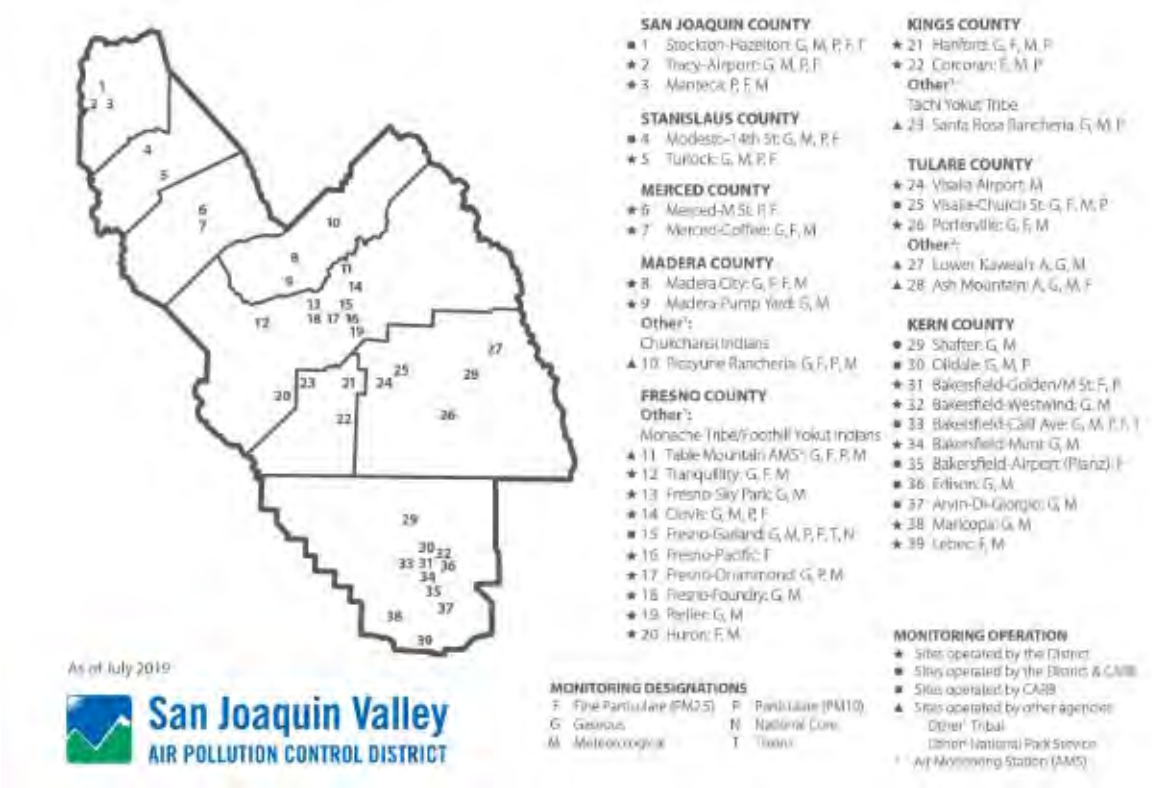

Figure 2-3: San Joaquin Valley Air Monitoring Sites

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Table 2-2: Maximum Observed Criteria Pollutant Concentrations and Number of Days Over the Applicable Ambient Air Quality Standard

Pollutant and Averaging Period		2019		2020		2021	
		Max. Conc.*	Days Exceeded	Max. Conc.*	Days Exceeded	Max. Conc. *	Days Exceeded
O_3	State 1-Hour	0.093	0	0.127	7	0.119	14
	National 8-Hour	0.082	22	0.102	36	0.097	51
NO_2	State 1-Hour	70	0	53	0	50	0
	National 1-Hour	70.7	0	53.4	0	50.0	0
	Annual	9	–	9	–	**	–
PM_{10}	State 24-Hour	418.5	115.8	305.7	157	302.1	**
	State Annual	46.3	–	60.5	–	**	–
	National 24-Hour	411.1	5	317.4	20.2	299.9	4.7
$PM_{2.5}$	State 24-hour	47.2	–	136.1	–	129.2	–
	State Annual	12.3	–	**	–	**	–
	National 24-Hour	47.2	6	127.1	20	129.2	43
	National Annual	12.9	–	19.6	–	20.7	–

*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).

**Insufficient data.

Source: CARB 2023b

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.

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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 emission 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. AB 32 requires that California implement regulations designed to reduce GHG emissions (See Section 5 for additional detail).

Applicable California regulations are discussed below.

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- 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.

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- 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.

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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.

- <u>SJVAPCD's 2023 Maintenance Plan and Redesignation Request for the Revoked 1-Hour Ozone Standard</u>

  EPA set the 1-hour ozone NAAQS at 124 ppb on February 8, 1979, and later revoked the standard in 2004 to be replaced by a more health-protective 8-hour ozone NAAQS in 1997 of 84 ppb. This standard was lowered again in 2008 to 75 ppb, and then once more in 2015 to 70 ppb. When EPA revoked the 1-hour standard, it identified the revoked requirements applicable to implementation of the 1-hour standard, and those that remained in effect. EPA adopted anti-backsliding provisions to preserve existing 1-hour ozone control measures and emission reductions obligations; therefore, nonattainment areas were still obligated to meet Rate of Progress (ROP) emission reduction targets, adopt mandatory control measures, and meet any extant attainment demonstration obligations. In order to terminate anti-backsliding provisions for the revoked 1-hour ozone standard, including Section 185 nonattainment fees, the District must meet all five criteria of Section 107(d)(3)(E) of the CAA. The 2023 Maintenance Plan and Redesignation Request for the Revoked 1-Hour Ozone Standard includes such requirements as well as all provisions for a maintenance plan. The plan includes a list of contingency measures that would be used to ensure future compliance once triggered. The contingency measures focus primarily on commercial/industrial combustion sources such as boilers, flares, dryers, ovens, engines, and turbines.

- <u>SJVAPCD's 2022 Plan for the 2015 8-Hour Ozone Standard, Adopted December 15, 2022</u>

  This Plan builds upon comprehensive strategies already in place from adopted District plans and CARB state-wide strategies. The District's current rules and regulations reflect technologies and methods that are beyond control levels established under the Clean Air Act. Overall, the aggressive control strategy included in the 2022 Ozone Plan will reduce NOx emissions by 72% between 2018 and 2037, contributing to the Valley's progress toward attainment of the 2015 8-hour ozone standard. In addition to the regulatory strategy contained in the Plan, the District and state's incentive programs will also reduce emissions from mobile sources in the coming years.

  The 2022 Ozone Plan includes a number of measures committing the District to explore and implement a variety of stationary source emission reduction opportunities, including:

  - Six proposed source-specific rules focused on VOC emissions from the oil and gas sector;

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- An incentive program (grant funding) to accelerate the replacement of older, high emitting equipment with lower emitting equipment and technologies; and
- Identified areas of future study, focused on NOx emissions from small combustion sources and VOC emissions from stationary sources including oil and gas and composting.

This plan relies heavily on mobile source reductions from CARB and EPA to achieve attainment with the 2015 8-hour ozone standard.

- CARB's 2022 State Strategy for the State Implementation Plan (2022 State SIP Strategy)

  2022 State SIP Strategy includes a number of commitments to reduce emissions from mobile sources, consumer products, pesticides, and primarily-federally and internationally regulated sources.

- 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.

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- 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 of 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 biomass conversion 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.

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- *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.

The VOC emissions from the proposed Project exceed the offset threshold. District Rule 2201 specifies two methodologies for calculating the required offset quantity: District offset quantity and federal offset quantity. Whether the Project is subject to the District offsets or federal offsets will depend on how the Project is permitted by the SJVAPCD, which in turn depends in part on how the contract is structured between the County and the operator. If the Project is permitted as part of the existing landfill, District offsets would be required. The District offset requirements are estimated as follows:

- District Offset Quantity (DOQ) = (PE2 – 10 ton/yr) × 1.3
  - DOQ = (41,12 ton/yr - 10) × 1.3

DOQ = 40.46 ton/yr

If the project is permitted as a separate facility from the landfill and is a new major source or a federal major modification, the Project is exempt from District offset requirements and the federal offset requirements must be met. Emission increases at a minor source or new source constitute a new major source if the net emissions increase exceeds the major source threshold for a given pollutant. The VOC emissions from proposed Project exceed the major source threshold, thus the Project would be a new major source and federal offset quantities are applicable.

The federal offset requirements are calculated in accordance with Section 4.8.4 of Rule 2201. The amount of increase emissions shall be determined by summing the difference between the post-project potential to emit (PE2) and the federal baseline emissions (FBE). Since this is a new facility, the FBE is zero. An offset ratio of 1.5 is applied for this project since internal emission reductions will not be utilized.

Federal Offset Quantity (FOQ) = (PE2 - FBE) × 1.5

FOQ = (41,12 ton/yr - 0) × 1.5

FOQ = 61.68 ton/yr

The Project proponent is proposing to provide approved ERCs to offset the proposed compost facility pending approval of this application by SJVAPCD. VOC ERCs will be provided at the time of ATC issuance for the proposed Project. The VOC may be provided piecemeal, as the various phases of the Project are developed. The VOC ERCs must meet all District or federal requirements, as applicable, including being surplus at the time of use.

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

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- *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 biomass conversion 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

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will be subject to Title V permitting requirements. The rule requires a completed Title V permit application to be filed within 12 months of becoming subject to the rule.

Emissions from the proposed biomass conversion 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 biomass conversion 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 biomass conversion 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

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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).

  This rule applies primarily to sources that exhaust through a stack, and would not normally be applied to a compost or storage pile.

- 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 allowed by Rule 4202.

  Compost and storage piles are routinely watered to enhance biological degradation during composting, enhance emission control of gaseous emissions from the piles, and reduce dust emissions. 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 biomass conversion 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 biomass conversion 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

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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 biomass conversion 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

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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 biomass conversion 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

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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;

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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.

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3.0 EMISSIONS

3.1 Baseline Landfill Emissions

The Visalia Disposal Site is an existing facility that is permitted to dispose up to 2,000 TPD of waste. The proposed composting facility would have the capacity to divert up to 1,000 TPD (seasonal maximum) and 641 TPD (average) up to a maximum of 200,000 TPY from landfill to composting, and the proposed biomass conversion facility would divert up to an additional 68 TPD (25,000 TPY) from landfill to biomass conversion. Logically, diverting organic waste from the landfill will reduce emissions from the landfill. However, the landfill will 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 had the organic material been landfilled rather than composted, 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 2022.1.1.20 (CAPCOA 2022), 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.

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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	Biomass Conversion Facility
VOC	43.2	35.3	35.3	37.5
NO_x	36.0	27.5	27.5	15.9
CO	33.6	28.9	28.9	15.8
SO_x	0.06	0.05	0.05	0.03
PM_{10}	6.81	6.35	6.35	2.64
$PM_{2.5}$	4.12	3.70	3.70	1.59

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	Biomass Conversion Facility
VOC	1.83	0.41	0.41	0.37
NO_x	2.46	1.21	1.21	1.44
CO	3.48	1.80	1.80	1.62
SO_x	0.01	<0.005	<0.005	<0.005
PM_{10}	0.38	0.10	0.10	0.10
$PM_{2.5}$	0.17	0.06	0.06	0.06

3.3 Operational Mobile Source Emissions

Emission estimates were prepared for the mobile sources required to operate the proposed composting and biomass conversion facilities. The mobile sources include trucks used for shipment of feedstock to the facility, vehicles used by employees for travel to and from the facility, support vehicles, heavy equipment operation needed to move feedstock into and out of the processing units, finished compost delivery vehicles, and biochar delivery trucks. 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

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- 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	38.62	0.65	5.59	0.21	2.48	1.23
On-road Vehicle Paved Road Dust	---	---	---	---	4.43	1.11
On-road Vehicle Unpaved Road Dust	---	---	---	---	0.00	0.00
Off-road Equipment Exhaust	5.27	2.46	45.70	0.09	0.18	0.18
Off-road Equipment Unpaved Dust	---	---	---	---	6.47	0.65
Total	43.89	3.11	51.29	0.29	13.56	3.16

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	12,048	203	1,745	64	775	382
On-road Vehicle Paved Road Dust	---	---	---	---	1,365	341
On-road Vehicle Unpaved Road Dust	---	---	---	---	0	0
Off-road Equipment Exhaust	1,645	768	14,258	27	55	55
Off-road Equipment Unpaved Dust	---	---	---	---	2,018	202
Total (lb/yr)	13,693	971	16,003	91	4,212	980
Total (TPY)	6.85	0.49	8.00	0.05	2.11	0.49

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

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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.

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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	–	211.79	–	–	–	–
Grind and Screen	–	–	–	–	3.69	0.55
Material Handling	–	–	–	–	1.53	0.23
Wind Erosion	–	–	–	–	0.34	0.14
Total	0.00	211.79	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	–	82,240.00	–	–	–	–
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	82,240.00	0.00	0.00	1,753.11	294.80
Total (TPY)	0.00	41.12	0.00	0.00	0.88	0.15

3.5 Biomass Conversion Facility Emissions

In preparation for the biomass conversion process, feedstock materials may be pre-processed by grinding. Grinding 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 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 will be 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 biomass conversion facility for the following source categories:

- Grinding;
- Material Handling;
- Biomass Drying;
- IC Engines;
- Cooling tower; and
- Flare.

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Daily and annual biomass conversion 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 Biomass Conversion 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 Biomass Conversion 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	–	5,400	–	–	–	–
Engines (2) Normal Ops	7,639.26	7,380.93	51,666.48	1,044.61	1,274.72	1,274.72
Flare	323.00	299.25	1,472.50	30.37	37.06	37.06
Cooling Tower	–	3,416.40	–	–	41.47	41.47
Total (lb/yr)	7,962.26	16,496.58	53,138.98	1,074.98	1,768.91	1,411.68
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	43.89	3.11	51.29	0.29	13.56	3.16
Compost Facility	0.00	211.79	0.00	0.00	5.56	0.92
Biomass Conversion Facility	31.01	52.79	141.55	2.92	4.81	3.83
Total New Sources	74.90	267.70	192.84	3.21	23.93	7.91

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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	13,693.26	971.10	16,003.18	90.98	4,212.26	980.18
Compost Facility	0.00	82,240.00	0.00	0.00	1,753.11	294.80
Biomass Conversion Facility	7,962.26	16,496.58	53,138.98	1,074.98	1,768.91	1,411.68
Total	21,655.52	99,707.67	69,142.16	1,165.96	7,734.27	2,686.65
Total (TPY)	10.83	49.85	34.57	0.58	3.87	1.34

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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

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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 biomass conversion 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 were 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.

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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 impacts within the geographic area in which the project is located [14 CCR Section 15064(h)(3)].

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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 pound-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 thresholds in Table 4-2. Mass-daily construction emissions are below the significance thresholds for all pollutants. 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	36.0	43.2	33.6	0.06	6.81	4.12
AAQA Construction Screening Level	100	100	100	100	100	100
Exceed Level?	*No*	*No*	*No*	*No*	*No*	*No*
Project Permitted Source Emissions	31.01	264.58	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	43.89	3.11	51.29	0.29	13.56	3.16
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 40.46 TPY ERCs as required by SJVAPCD Rule 2202 for the compost facility (i.e., compost facility emissions

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exceeding the 10-ton offset threshold). With the application of VOC ERC in the amount of 40.5 TPY, 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	2.46	1.83	3.48	0.01	0.38	0.17
CEQA Construction Threshold	10	10	100	27	15	15
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*
Project Permitted Source Emissions	3.98	49.37	26.57	0.54	1.76	0.85
SJVAPCD Rule 2202 ERCs[1]	NR	40.46	NR	NR	NR	NA
Net Emissions After Offsets	3.98	9.0	26.57	0.54	1.76	0.85
CEQA Permitted Source Threshold	10	10	100	27	15	15
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*
Project Non-Permitted Source Emissions	6.85	0.49	8.00	0.05	2.11	0.49
CEQA Non-Permitted Source Threshold	10	10	100	27	15	15
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

Notes:

1. The quantity of ERCs required for the Compost Project will depend on how the facility is permitted. The quantity of ERCs required would be 40.46 TPY if the facility is permitted as part of the existing landfill and would be 61.68 TPY if permitted as a new stationary source. The lower value of 40.46 TPY is used in the significance determination as it is a more conservative approach; applying more ERC would lower the value of the 'Net emissions after offsets'. Please see Section 2.3.4 for additional details on the determination of ERC requirements. The Biomass Conversion Facility emissions will not exceed the offset threshold for any pollutant and offsets would not be required.

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.

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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 on air quality. The modeling results are presented in Tables 4-4 and 4-5. A detailed modeling report is provided in Appendix F.

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Table 4-4: AAQA Modeling Results

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	90.9	123.3	188	No
		California	34.4	133.9	168.4	339	No
	Annual	Federal	0.9	19.1	20.0	100	No
		California	0.9	19.1	20.0	57	No
CO	1-Hour	Federal	521.3	11,693.8	12,215	40,000	No
		California	521.3	11,693.8	12,215	23,000	No
	8-Hour	Federal	395.3	3,028.3	3,424	10,000	No
		California	395.3	3,028.3	3,424	10,000	No
SO_2	1-Hour	Federal	0.9	14.6	15.4	196	No
		California	0.9	43.1	44.0	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	60.5	-	20	
$PM_{2.5}$	24-Hour	Federal	See SIL Analysis	129.2	-	35	
	Annual	Federal	See SIL Analysis	20.7	-	12	
		California	See SIL Analysis	12.3	-	12	

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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	0.50	5.0	No
	Annual	0.13	1.0	No
$PM_{2.5}$	24-Hour	0.50	1.2	No
	Annual	0.13	0.2	No
Fugitive PM_{10}	24-Hour	7.74	10.4	No
	Annual	1.26	2.1	No
Fugitive $PM_{2.5}$	24-Hour	1.25	2.5	No
	Annual	0.23	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. A 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 biomass conversion 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, additional mitigation in the form of a VERA may 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 in the amount of 40.46 TPY, criteria pollutant emissions from the proposed Project would be less than the defined CEQA

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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 demonstrates 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 biomass conversion facilities will operate as permitted stationary sources, the SJVAPCD's NSR program ensures that the emissions will not be cumulatively significant, per SJVAPCD guidance. Additional mitigation in the form of a VERA may be considered to further reduce emissions of nonattainment pollutants and/or their precursors, consistent with SJVAPCD guidelines.

Based on the analyses conducted, the proposed Project with the proposed mitigation 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 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 may consider 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

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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 PS 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 PS hierarchy is explained below:

- Low Score: Projects having a PS of less than 1 are low risk and are not likely to have an adverse health risk.
- Intermediate Score: Projects having a PS of 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 PS 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 PS at the nearest residential and business receptors. The PS 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	—	0.0068	4.57	Intermediate
Operations	0.76	0.065	3.54	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.

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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 biomass conversion facilities are new facilities that have no odor history. The nearest sensitive receptor to the Project site is a residence approximately 0.5 miles to the west of the compost facility and more than a mile from the biomass conversion 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

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- 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 biomass conversion 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 biomass conversion 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.

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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 human-caused 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

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matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanoes. Human-caused 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 human-caused 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 racing 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.

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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).

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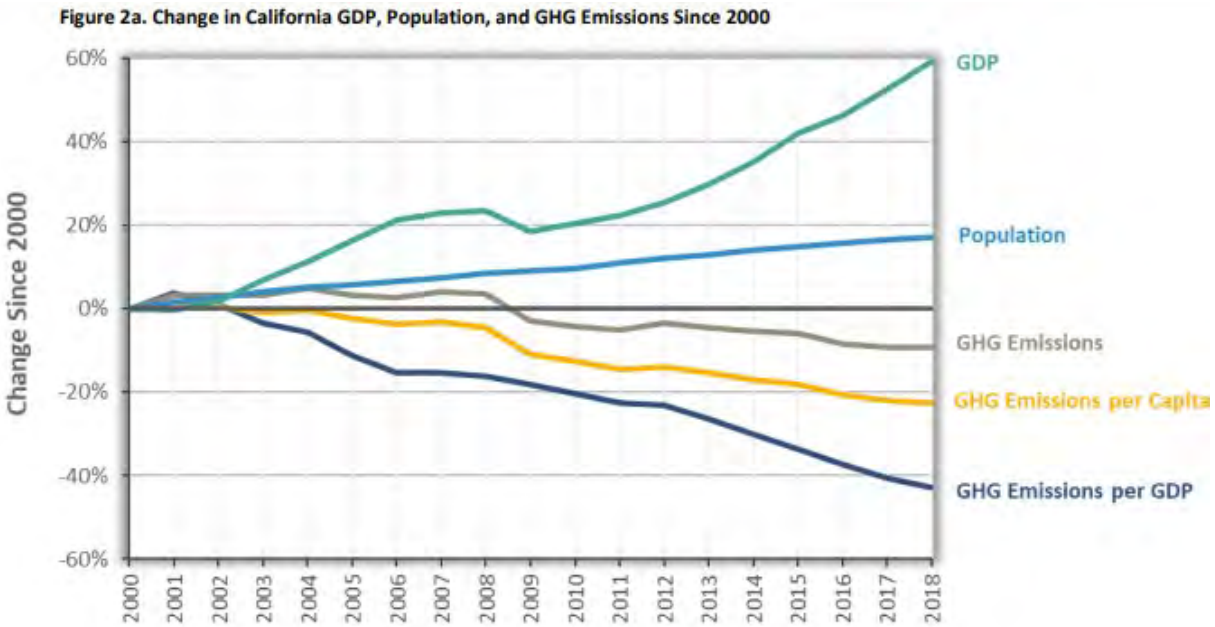
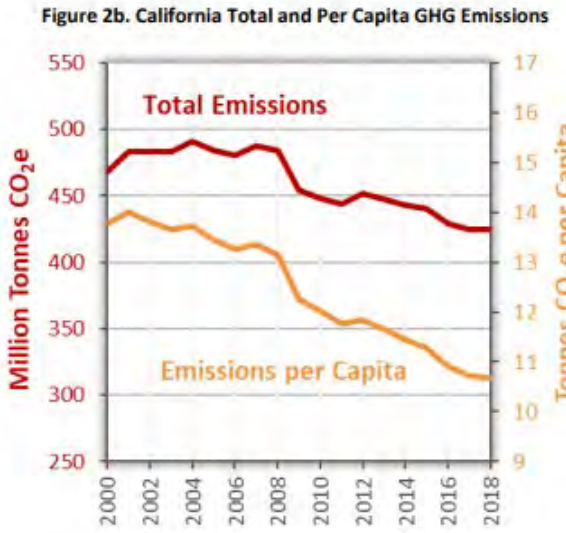


Metric	Associated 2018 Value
GDP	2.7 Trillion (2012 $)
Population	39.8 Million
GHG Emissions	425.3 Million Tonnes CO_2e
GHG Emissions per Capita	10.7 Tonnes CO_2e per Capita
GHG Emissions per GDP	156 Tonnes CO_2e per Million $



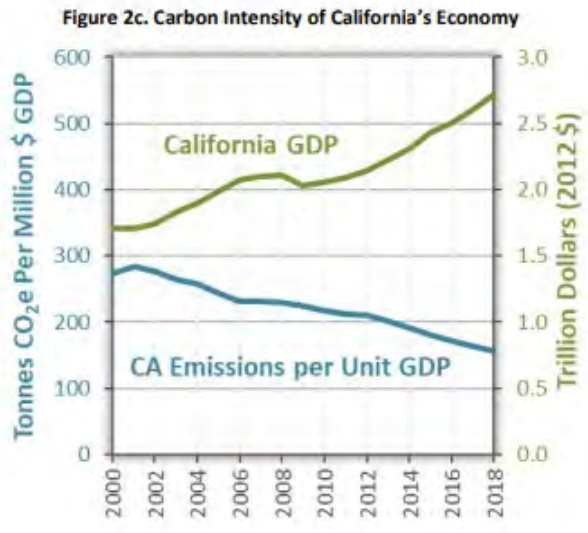


Figure 5-1: California Statewide GHG Emission Trends

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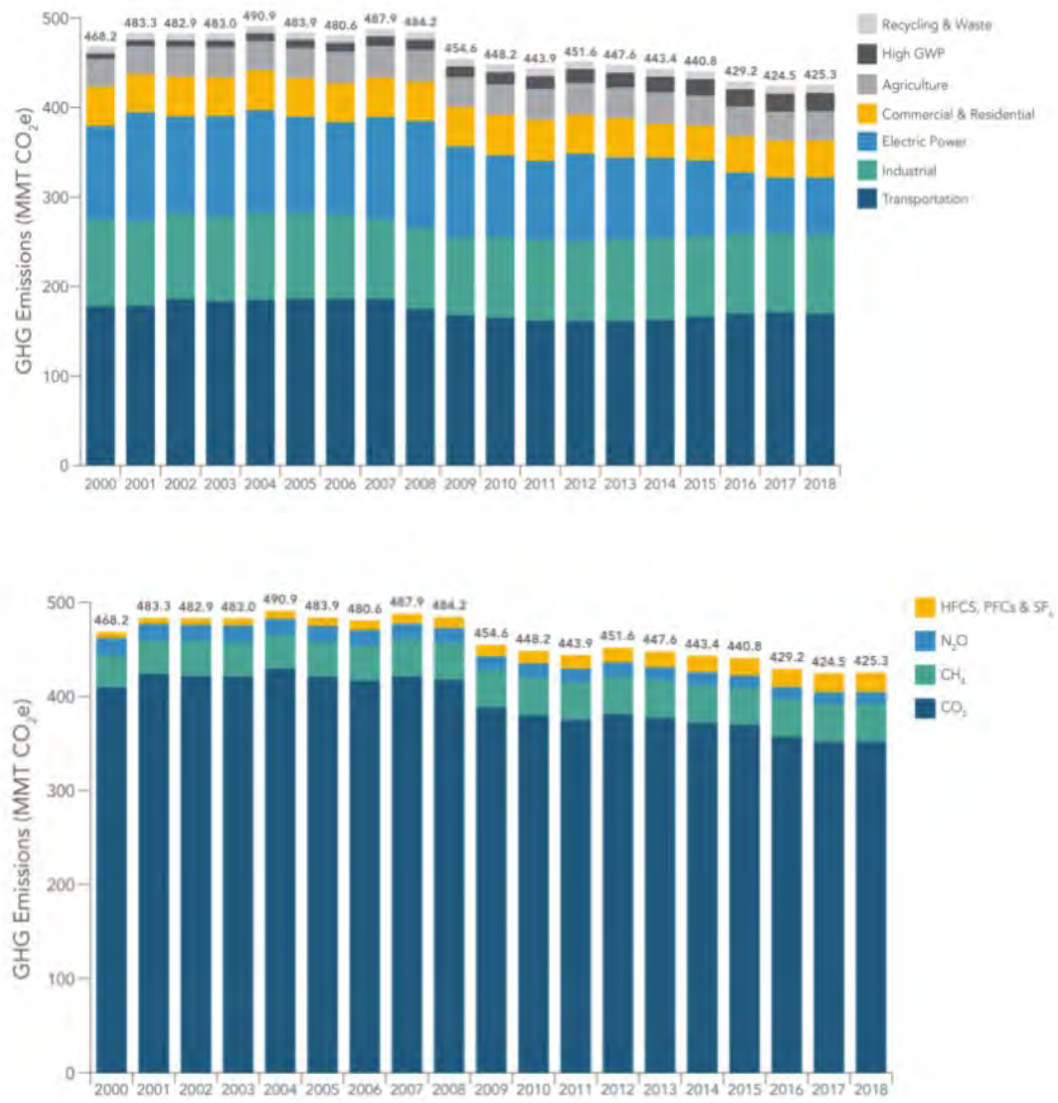

Figure 5-2: California GHG Emissions by Sector and Gas

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

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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

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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

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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 discussed below.

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.

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5.2.2.1 Assembly Bill 32

The California Global Warming Solutions Act of 2006, also known as AB 32, 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.

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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 Assembly Bill 341

AB 341 (Chesbro, Chapter 476, Statutes of 2011) sets forth the requirements of the statewide mandatory commercial recycling program. The legislation requires that a business (includes public entities) that generates four cubic yards or more of commercial solid waste per week or is a multifamily residential dwelling of five units or more must arrange for recycling services. Businesses can take one or any combination of the following in order to reuse, recycle, compost, or otherwise divert solid waste from disposal: self-haul, subscribe to a hauler, arrange for the pickup of recyclable materials, or subscribe to a recycling service that may include mixed waste processing that yields diversion results comparable to source separation. The implementing regulation was adopted at CalRecycle's January 17, 2012 Monthly Public Meeting. The regulation reflects the statutory provisions of AB 341 and provides additional procedural clarifications. The regulation was approved by the Office of Administrative Law on May 7, 2012 and became effective immediately. On June 27, 2012, the Governor signed Senate Bill 1018 which included an amendment that requires a business that generates 4 cubic yards or more of commercial solid waste per week to arrange for recycling services.

5.2.2.5 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

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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.

5.2.2.6 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.

5.2.2.7 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.

5.2.2.8 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 to update when CARB adopts a Scoping Plan Update

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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."

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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).

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5.3.1 Landfill Diversion Emissions

The diversion of organic waste from the landfill to composting and biomass conversion 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 biomass conversion 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 biomass conversion 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 biomass conversion facility or compost facility was excluded from this analysis.

GHG emissions associated with the diversion of organic material from landfill to composting and biomass conversion 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, 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 biomass conversion 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 Biomass Conversion
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 2022.1.1.20 (CAPCOA 2022), 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

[6] A properly-designed LFG collection system typically collects 75% of the methane produced in the landfill.

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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	Biomass Conversion Facility
CO_2	1,226	331	331	289
CH_4	0.05	0.01	0.01	0.01
N_2O	0.08	0.01	0.01	0.01
CO_2e	1,251	335	335	291

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 biomass conversion facilities. The mobile sources include trucks used to transport organic waste to the facility, vehicles used for employee travel to and from the facility, support vehicles, heavy equipment operation needed to move feedstock into and out of the processing units, finished compost delivery vehicles, and biochar delivery vehicles.

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	3,077	0.0	0.5	3,219
Off-road Equipment Exhaust	1,298	52	10	1,302
Total	4,375	52	11	4,521

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 8,800 MT CO_2e per year.

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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)	72.57	0.00	0.00	73.73
Mobile Sources	4,375	52	11	4,521
Compost Facility	–	–	–	(17,378)
Biomass Conversion Facility	–	–	–	
Subtotal New Sources	4402	52	11	(12,783)
Baseline – Landfill	–	–	–	(3,977)
Total	–	–	–	**(8,806)**

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.

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- 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 the proposed Project result in a net GHG reduction of over 8,800 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, consistent with agency guidance. 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 8,800 MT CO_2e per year.

Neither the compost facility nor the biomass conversion 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 biomass conversion 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]

[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."*

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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 (SJVAPCD 2015a).

5.4.2.2 Level of Significance

The proposed Project yields a net reduction in GHG emissions of over 8,800 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, consistent with SJVAPCD guidance.

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 not have significant adverse impacts related to GHG emissions and, instead, would provide a net 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.

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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 recovered 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 biomass conversion production[8] 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 biomass conversion 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 biomass conversion 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 biomass conversion production as alternatives to landfilling of organic wastes in Tulare County.

5.4.3.2 Level of Significance after Mitigation

By providing composting and biomass conversion 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.

[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.

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APPENDIX A – LANDFILL EMISSIONS

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Appendix A: Landfill Emissions

Air Quality and GHG Technical Report

Prepared for:

Tulare County Resource Management Agency
Solid Waste Department
Visalia Landfill
8614 Avenue 328
Visalia, CA 93291

October 2023

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ATTACHMENT A-1 – WARM CALCULATION WORKSHEETS

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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

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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 biomass conversion facility would divert an additional 68 TPD (25,000 TPY) from landfill to biomass conversion. 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 and biomass conversion facilities. While emissions from organic waste disposal itself 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 biomass conversion 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 biomass conversion 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.

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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 divert 25,000 TPY to biomass conversion. WARM model inputs are shown in Table 2-1.

Table 2-1: WARM Model Inputs

Parameter	Baseline (Business as Usual)	Proposed Composting	Proposed Biomass Conversion
Disposal Quantity	225,000 TPY	200,000 TPY	25,000 TPY
Waste Disposition	Landfill w/ landfill gas collection and flare	Composting	Biomass Conversion 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.

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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 Biomass Conversion
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."*

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3.0 REFERENCES

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ATTACHMENT A-1 – WARM CALCULATION WORKSHEETS

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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)
						0
						0
						0
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						0
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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
							0	0.00
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							0	0.00
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							0	0.00
							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

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Appendix B: Construction Emissions

Air Quality and GHG Technical Report

Prepared for:

Tulare County Resource Management Agency
Solid Waste Department
Visalia Landfill
8614 Avenue 328
Visalia, CA 93291

November 2023

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ATTACHMENT B-1 – FACILITY PLOT PLAN

ATTACHMENT B-2 – CALEEMOD INPUT DATA

ATTACHMENT B-3 – CALEEMOD OUTPUT REPORTS

Phase 1 Construction Emissions
Phases 2 & 3 Construction Emissions
Biomass Conversion Facility Construction Emissions

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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

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Appendix B: Construction Emissions

1.0 INTRODUCTION

The construction emissions analysis was performed using the California Emissions Estimator Model® (CalEEMod) version 2022.1.1.20 (CAPCOA 2022), 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 VOC 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).

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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;

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- 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 that are not specifically listed as assumptions.

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 plan 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 biomass conversion 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

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Table 2-3: Land Use Data for CalEEMod Input – Biomass Conversion Facility

Project Element	Land Use Type	Land Use Subtype	Unit Amount (1,000 sq. ft.)	Lot Size (acres)	Estimated Area (sq. ft.)
Biomass Conversion 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 biomass conversion 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	Biomass Conversion Facility
VOC	43.2	35.3	35.3	37.5
NO_x	36.0	27.5	27.5	15.9
CO	33.6	28.9	28.9	15.8
SO_x	0.06	0.05	0.05	0.03
PM_{10}	6.81	6.35	6.35	2.64
$PM_{2.5}$	4.12	3.70	3.70	1.59

[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.

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Table 2-5: Mitigated Annual Construction Emissions Summary

Criteria Pollutant	Emissions (Tons)			
	Compost Facility Phase 1	Compost Facility Phase 2	Compost Facility Phase 3	Biomass Conversion Facility
VOC	1.83	0.41	0.41	0.37
NO_x	2.46	1.21	1.21	1.44
CO	3.48	1.80	1.80	1.62
SO_x	0.01	<0.005	<0.005	<0.005
PM_{10}	0.38	0.10	0.10	0.10
$PM_{2.5}$	0.17	0.06	0.06	0.06

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 biomass conversion 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	Biomass Conversion Facility
CO_2	1,226	331	331	289
CH_4	0.05	0.01	0.01	0.01
N_2O	0.08	0.01	0.01	0.01
CO_2e	1,251	335	335	291

[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.

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3.0 REFERENCES

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ATTACHMENT B-1 – FACILITY PLOT PLAN

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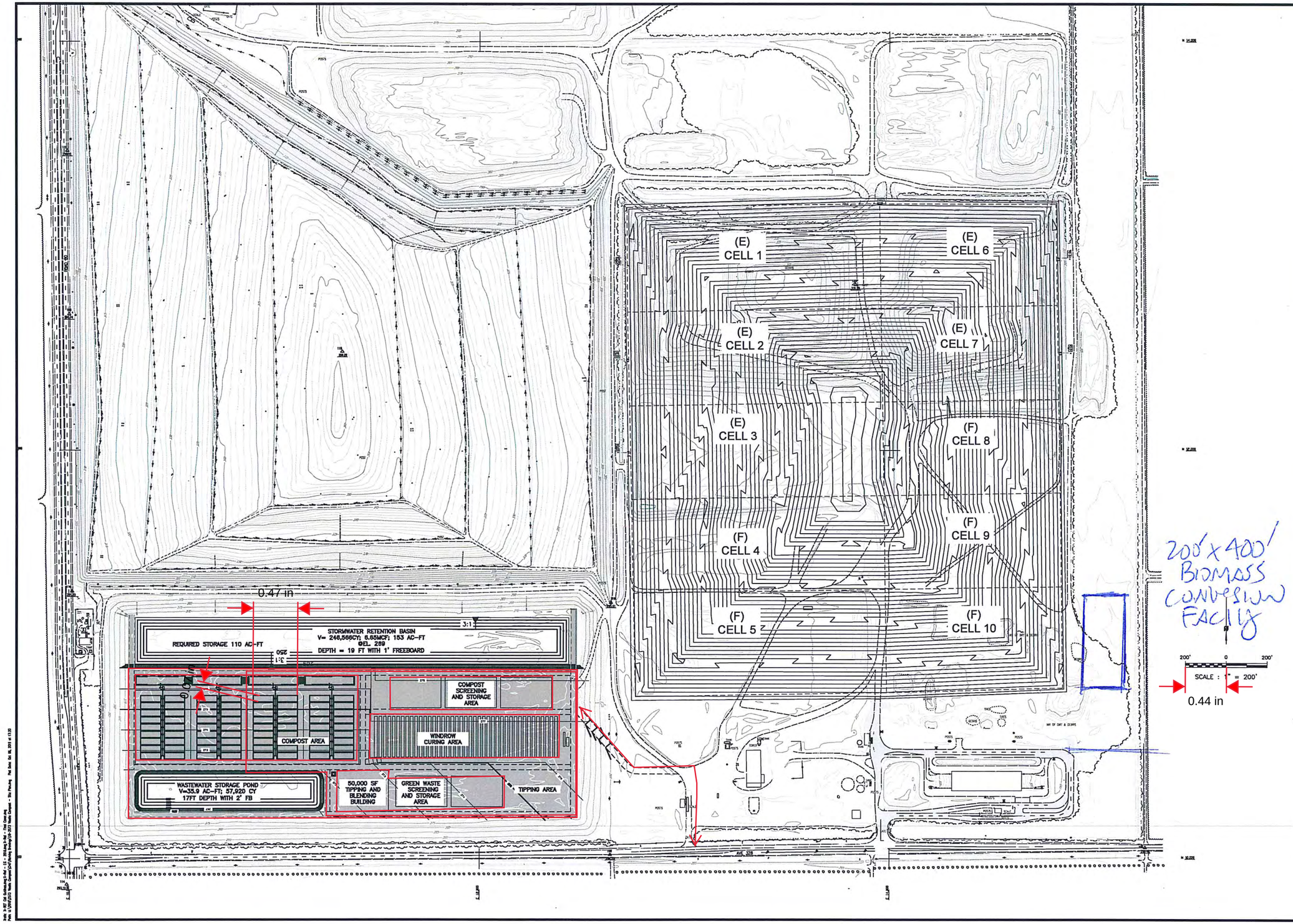

EBA ENGINEERING
825 SONOMA AVENUE
SUITE C
SANTA ROSA, CA 95404
TEL: (707) 544-0784

SITE PLAN

VISALIA LANDFILL - COMPOST FACILITY
TULARE COUNTY
8614 AVE 328
VISALIA, CALIFORNIA

Submittal / Revision:

Job No:	18-2573
Drawn By:	WC
Checked By:	MD
Date:	10/10/2019

Sheet Number

1

1 of 2

ATTACHMENT B-2 – CALEEMOD INPUT DATA

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Table 1: Land Use Data for CalEEMod Input - Compost Facility Phase 1						
Project Element	**CalEEMod Land Use Type**	**CalEEMod 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 Heavy Industry	667.355	1,000 sq. ft.	15.32	**667,355**
Other Non-Asphalt Paved Areas (Concrete) and Concrete Paved Roads	Parking	Other Non-Asphalt Surfaces	400.000	1,000 sq. ft.	9.18	**400,000**
Office	Commercial	General Office Building	1.000	1,000 sq. ft.	0.02	**1,000**
Project Site					**24.53**	**1,068,355**

Sources: Applicant 2021, CalEEMod version 2022.1.1.20

Start Date 1/8/2024 (Site Prep, Grading, Bldg Const, Pave, Arch Coat)

Table 2: Land Use Data for CalEEMod Input - Compost Facility Phases 2/3						
Project Element	**CalEEMod Land Use Type**	**CalEEMod Land Use Subtype**	**Unit Amount**	**Size Metric**	**Lot Acreage (footprint)**	**Square Feet (est.)**
Phase 2/3 Area: Composting Area	Industrial	General Heavy Industry	112.603	1,000 sq. ft.	2.585	**112,603**
Parking	Parking	Other Asphalt Surfaces	0.415	acres	0.415	**18,077**
Project Site					**3.000**	**130,680**

Sources: Applicant 2021, CalEEMod version 2022.1.1.20

Start Date 1/3/2028 (Site Prep, Grading, Bldg Const, Pave, Arch Coat)

Table 3: Land Use Data for CalEEMod Input - Biomass Facility						
Project Element	**CalEEMod Land Use Type**	**CalEEMod 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.	1.84	**80,000**
Parking	Parking	Parking Lot	20.000	Spaces	0.18	**8,000**
Project Site					**2.02**	**88,000**

Sources: Applicant 2021, CalEEMod version 2022.1.1.20

Start Date 1/8/2024 (Site Prep, Grading, Bldg Const, Pave, Arch Coat)

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

ATTACHMENT B-3 – CALEEMOD OUTPUT REPORTS

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Phase 1 Construction Emissions

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Visalia Landfill - Compost Facility Phase 1 Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Visalia Landfill - Compost Facility Phase 1
Construction Start Date	1/8/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.90
Precipitation (days)	24.4
Location	36.38642713958254, -119.37972530287755
County	Tulare
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2717
EDFZ	9
Electric Utility	Eastside Power Authority
Gas Utility	Southern California Gas
App Version	2022.1.1.20

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
General Heavy Industry	667	1000sqft	15.3	667,355	0.00	—	—	—

General Office Building	1.00	1000sqft	0.02	1,000	0.00	—	—	—
Other Non-Asphalt Surfaces	400	1000sqft	9.18	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-10-A	Water Exposed Surfaces

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	43.2	15.6	29.0	0.04	0.53	2.15	2.68	0.49	0.53	1.02	—	6,523	6,523	0.26	0.46	13.5	6,679
Mit.	43.2	15.6	29.0	0.04	0.53	2.15	2.68	0.49	0.53	1.02	—	6,523	6,523	0.26	0.46	13.5	6,679
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	43.2	36.0	33.6	0.06	1.60	19.8	21.4	1.47	10.1	11.6	—	6,707	6,707	0.28	0.46	0.35	6,732
Mit.	43.2	36.0	33.6	0.06	1.60	5.21	6.81	1.47	2.65	4.12	—	6,707	6,707	0.28	0.46	0.35	6,732
% Reduced	—	—	—	—	—	74%	68%	—	74%	64%	—	—	—	—	—	—	—

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.0	13.5	19.1	0.03	0.49	2.66	3.15	0.45	0.93	1.39	—	4,487	4,487	0.19	0.27	3.39	4,576
Mit.	10.0	13.5	19.1	0.03	0.49	1.61	2.10	0.45	0.47	0.92	—	4,487	4,487	0.19	0.27	3.39	4,576
% Reduced	—	—	—	—	—	40%	33%	—	50%	34%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.83	2.46	3.48	0.01	0.09	0.49	0.58	0.08	0.17	0.25	—	743	743	0.03	0.04	0.56	758
Mit.	1.83	2.46	3.48	0.01	0.09	0.29	0.38	0.08	0.09	0.17	—	743	743	0.03	0.04	0.56	758
% Reduced	—	—	—	—	—	40%	33%	—	50%	34%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.91	15.6	29.0	0.04	0.53	2.15	2.68	0.49	0.53	1.02	—	6,523	6,523	0.26	0.46	13.5	6,679
2025	43.2	14.6	27.6	0.04	0.46	2.15	2.62	0.43	0.53	0.96	—	6,445	6,445	0.25	0.44	12.8	6,595
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	3.73	36.0	33.6	0.06	1.60	19.8	21.4	1.47	10.1	11.6	—	6,707	6,707	0.28	0.46	0.35	6,732
2025	43.2	15.0	24.8	0.04	0.46	2.15	2.62	0.43	0.53	0.96	—	6,252	6,252	0.28	0.44	0.33	6,390
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.03	13.5	19.1	0.03	0.49	2.66	3.15	0.45	0.93	1.39	—	4,487	4,487	0.19	0.27	3.39	4,576
2025	10.0	7.10	12.2	0.02	0.23	0.99	1.21	0.21	0.24	0.45	—	2,918	2,918	0.12	0.20	2.53	2,982

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.37	2.46	3.48	0.01	0.09	0.49	0.58	0.08	0.17	0.25	—	743	743	0.03	0.04	0.56	758
2025	1.83	1.29	2.22	< 0.005	0.04	0.18	0.22	0.04	0.04	0.08	—	483	483	0.02	0.03	0.42	494

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.91	15.6	29.0	0.04	0.53	2.15	2.68	0.49	0.53	1.02	—	6,523	6,523	0.26	0.46	13.5	6,679
2025	43.2	14.6	27.6	0.04	0.46	2.15	2.62	0.43	0.53	0.96	—	6,445	6,445	0.25	0.44	12.8	6,595
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	3.73	36.0	33.6	0.06	1.60	5.21	6.81	1.47	2.65	4.12	—	6,707	6,707	0.28	0.46	0.35	6,732
2025	43.2	15.0	24.8	0.04	0.46	2.15	2.62	0.43	0.53	0.96	—	6,252	6,252	0.28	0.44	0.33	6,390
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.03	13.5	19.1	0.03	0.49	1.61	2.10	0.45	0.47	0.92	—	4,487	4,487	0.19	0.27	3.39	4,576
2025	10.0	7.10	12.2	0.02	0.23	0.99	1.21	0.21	0.24	0.45	—	2,918	2,918	0.12	0.20	2.53	2,982
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.37	2.46	3.48	0.01	0.09	0.29	0.38	0.08	0.09	0.17	—	743	743	0.03	0.04	0.56	758
2025	1.83	1.29	2.22	< 0.005	0.04	0.18	0.22	0.04	0.04	0.08	—	483	483	0.02	0.03	0.42	494

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.99	0.90	< 0.005	0.04	—	0.04	0.04	—	0.04	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	0.54	0.54	—	0.28	0.28	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.18	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	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

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.07	0.71	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	95.4	95.4	0.01	< 0.005	0.01	97.0
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.71	2.71	< 0.005	< 0.005	0.01	2.76
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.46
Vendor	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
Hauling	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

3.2. Site Preparation (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	5.11	5.11	—	2.63	2.63	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.99	0.90	< 0.005	0.04	—	0.04	0.04	—	0.04	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	0.14	0.14	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.18	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.07	0.71	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	95.4	95.4	0.01	< 0.005	0.01	97.0

Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.71	2.71	< 0.005	< 0.005	0.01	2.76
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.46
Vendor	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
Hauling	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

3.3. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.52	34.3	30.2	0.06	1.45	—	1.45	1.33	—	1.33	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	3.29	2.89	0.01	0.14	—	0.14	0.13	—	0.13	—	633	633	0.03	0.01	—	635
Dust From Material Movement	—	—	—	—	—	0.88	0.88	—	0.35	0.35	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.60	0.53	< 0.005	0.03	—	0.03	0.02	—	0.02	—	105	105	< 0.005	< 0.005	—	105
Dust From Material Movement	—	—	—	—	—	0.16	0.16	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.81	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	109	109	0.01	0.01	0.01	111
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.08	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.8	10.8	< 0.005	< 0.005	0.02	11.0
Vendor	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

Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.80	1.80	< 0.005	< 0.005	< 0.005	1.83
Vendor	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
Hauling	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

3.4. Grading (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.52	34.3	30.2	0.06	1.45	—	1.45	1.33	—	1.33	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	2.39	2.39	—	0.95	0.95	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	3.29	2.89	0.01	0.14	—	0.14	0.13	—	0.13	—	633	633	0.03	0.01	—	635
Dust From Material Movement	—	—	—	—	—	0.23	0.23	—	0.09	0.09	—	—	—	—	—	—	—

Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.60	0.53	< 0.005	0.03	—	0.03	0.02	—	0.02	—	105	105	< 0.005	< 0.005	—	105
Dust From Material Movement	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.81	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	109	109	0.01	0.01	0.01	111
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.08	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.8	10.8	< 0.005	< 0.005	0.02	11.0
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.80	1.80	< 0.005	< 0.005	< 0.005	1.83
Vendor	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
Hauling	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

3.5. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.70	6.50	7.60	0.01	0.29	—	0.29	0.27	—	0.27	—	1,389	1,389	0.06	0.01	—	1,394
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	1.19	1.39	< 0.005	0.05	—	0.05	0.05	—	0.05	—	230	230	0.01	< 0.005	—	231
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.60	0.92	14.6	0.00	0.00	1.53	1.53	0.00	0.36	0.36	—	1,731	1,731	0.11	0.07	7.08	1,762
Vendor	0.11	3.47	1.28	0.02	0.03	0.62	0.66	0.03	0.17	0.21	—	2,395	2,395	0.05	0.36	6.39	2,511
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.38	1.15	11.4	0.00	0.00	1.53	1.53	0.00	0.36	0.36	—	1,530	1,530	0.13	0.07	0.18	1,555
Vendor	0.10	3.70	1.31	0.02	0.03	0.62	0.66	0.03	0.17	0.21	—	2,397	2,397	0.05	0.36	0.17	2,507
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.82	0.60	6.84	0.00	0.00	0.87	0.87	0.00	0.20	0.20	—	920	920	0.07	0.04	1.77	936
Vendor	0.06	2.10	0.75	0.01	0.02	0.36	0.38	0.02	0.10	0.12	—	1,388	1,388	0.03	0.21	1.59	1,453
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.11	1.25	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	152	152	0.01	0.01	0.29	155
Vendor	0.01	0.38	0.14	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	230	230	< 0.005	0.03	0.26	241
Hauling	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

3.6. Building Construction (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.70	6.50	7.60	0.01	0.29	—	0.29	0.27	—	0.27	—	1,389	1,389	0.06	0.01	—	1,394
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	1.19	1.39	< 0.005	0.05	—	0.05	0.05	—	0.05	—	230	230	0.01	< 0.005	—	231
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.60	0.92	14.6	0.00	0.00	1.53	1.53	0.00	0.36	0.36	—	1,731	1,731	0.11	0.07	7.08	1,762
Vendor	0.11	3.47	1.28	0.02	0.03	0.62	0.66	0.03	0.17	0.21	—	2,395	2,395	0.05	0.36	6.39	2,511
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.38	1.15	11.4	0.00	0.00	1.53	1.53	0.00	0.36	0.36	—	1,530	1,530	0.13	0.07	0.18	1,555

Vendor	0.10	3.70	1.31	0.02	0.03	0.62	0.66	0.03	0.17	0.21	—	2,397	2,397	0.05	0.36	0.17	2,507
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.82	0.60	6.84	0.00	0.00	0.87	0.87	0.00	0.20	0.20	—	920	920	0.07	0.04	1.77	936
Vendor	0.06	2.10	0.75	0.01	0.02	0.36	0.38	0.02	0.10	0.12	—	1,388	1,388	0.03	0.21	1.59	1,453
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.11	1.25	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	152	152	0.01	0.01	0.29	155
Vendor	0.01	0.38	0.14	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	230	230	< 0.005	0.03	0.26	241
Hauling	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

3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	4.54	5.67	0.01	0.19	—	0.19	0.17	—	0.17	—	1,042	1,042	0.04	0.01	—	1,045
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.83	1.03	< 0.005	0.03	—	0.03	0.03	—	0.03	—	172	172	0.01	< 0.005	—	173
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.51	0.85	13.4	0.00	0.00	1.53	1.53	0.00	0.36	0.36	—	1,693	1,693	0.10	0.07	6.48	1,724
Vendor	0.09	3.32	1.22	0.02	0.03	0.62	0.66	0.03	0.17	0.21	—	2,354	2,354	0.05	0.35	6.36	2,465
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.31	1.04	10.5	0.00	0.00	1.53	1.53	0.00	0.36	0.36	—	1,498	1,498	0.13	0.07	0.17	1,523
Vendor	0.08	3.53	1.25	0.02	0.03	0.62	0.66	0.03	0.17	0.21	—	2,356	2,356	0.05	0.35	0.17	2,461
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.58	0.42	4.71	0.00	0.00	0.65	0.65	0.00	0.15	0.15	—	675	675	0.05	0.03	1.21	687
Vendor	0.04	1.50	0.54	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	1,023	1,023	0.02	0.15	1.19	1,070
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.08	0.86	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	112	112	0.01	0.01	0.20	114

Vendor	0.01	0.27	0.10	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	169	169	< 0.005	0.03	0.20	177
Hauling	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

3.8. Building Construction (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	4.54	5.67	0.01	0.19	—	0.19	0.17	—	0.17	—	1,042	1,042	0.04	0.01	—	1,045
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.83	1.03	< 0.005	0.03	—	0.03	0.03	—	0.03	—	172	172	0.01	< 0.005	—	173
Onsite truck	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

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.51	0.85	13.4	0.00	0.00	1.53	1.53	0.00	0.36	0.36	—	1,693	1,693	0.10	0.07	6.48	1,724
Vendor	0.09	3.32	1.22	0.02	0.03	0.62	0.66	0.03	0.17	0.21	—	2,354	2,354	0.05	0.35	6.36	2,465
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.31	1.04	10.5	0.00	0.00	1.53	1.53	0.00	0.36	0.36	—	1,498	1,498	0.13	0.07	0.17	1,523
Vendor	0.08	3.53	1.25	0.02	0.03	0.62	0.66	0.03	0.17	0.21	—	2,356	2,356	0.05	0.35	0.17	2,461
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.58	0.42	4.71	0.00	0.00	0.65	0.65	0.00	0.15	0.15	—	675	675	0.05	0.03	1.21	687
Vendor	0.04	1.50	0.54	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	1,023	1,023	0.02	0.15	1.19	1,070
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.08	0.86	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	112	112	0.01	0.01	0.20	114
Vendor	0.01	0.27	0.10	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	169	169	< 0.005	0.03	0.20	177
Hauling	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

3.9. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.41	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.05	0.71	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	90.5	90.5	0.01	< 0.005	0.35	92.2
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.55	4.55	< 0.005	< 0.005	0.01	4.63
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.75	0.75	< 0.005	< 0.005	< 0.005	0.77
Vendor	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
Hauling	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

3.10. Paving (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.41	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.05	0.71	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	90.5	90.5	0.01	< 0.005	0.35	92.2
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.55	4.55	< 0.005	< 0.005	0.01	4.63
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.75	0.75	< 0.005	< 0.005	< 0.005	0.77
Vendor	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
Hauling	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

3.11. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	42.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	42.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.18	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	27.4	27.4	< 0.005	< 0.005	—	27.5
Architectural Coatings	8.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.54	4.54	< 0.005	< 0.005	—	4.56
Architectural Coatings	1.60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.30	0.17	2.68	0.00	0.00	0.31	0.31	0.00	0.07	0.07	—	339	339	0.02	0.01	1.30	345
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.26	0.21	2.10	0.00	0.00	0.31	0.31	0.00	0.07	0.07	—	300	300	0.03	0.01	0.03	305
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.45	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	63.9	63.9	< 0.005	< 0.005	0.11	65.0
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.08	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.6	10.6	< 0.005	< 0.005	0.02	10.8
Vendor	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
Hauling	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

3.12. Architectural Coating (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	42.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	42.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.18	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	27.4	27.4	< 0.005	< 0.005	—	27.5
Architectural Coatings	8.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.54	4.54	< 0.005	< 0.005	—	4.56
Architectural Coatings	1.60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.30	0.17	2.68	0.00	0.00	0.31	0.31	0.00	0.07	0.07	—	339	339	0.02	0.01	1.30	345
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.26	0.21	2.10	0.00	0.00	0.31	0.31	0.00	0.07	0.07	—	300	300	0.03	0.01	0.03	305
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.45	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	63.9	63.9	< 0.005	< 0.005	0.11	65.0
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.08	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.6	10.6	< 0.005	< 0.005	0.02	10.8
Vendor	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
Hauling	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

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/8/2024	1/21/2024	5.00	10.0	—
Grading	Grading	1/22/2024	3/10/2024	5.00	35.0	—
Building Construction	Building Construction	3/11/2024	8/10/2025	5.00	370	—
Paving	Paving	8/11/2025	9/7/2025	5.00	20.0	—
Architectural Coating	Architectural Coating	9/8/2025	12/21/2025	5.00	75.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38

Grading	Tractors/Loaders/Backh	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29

Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	—	6.80	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	6.80	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	281	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	110	6.80	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—

Paving	Worker	15.0	7.70	LDA,LDT1,LDT2
Paving	Vendor	—	6.80	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	56.1	7.70	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.80	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	—	6.80	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	6.80	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	281	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	110	6.80	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT

Paving	—	—	—	—
Paving	Worker	15.0	7.70	LDA,LDT1,LDT2
Paving	Vendor	—	6.80	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	56.1	7.70	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.80	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	1,002,533	334,178	24,000

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	15.0	0.00	—
Grading	—	—	105	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
General Heavy Industry	0.00	0%
General Office Building	0.00	0%
Other Non-Asphalt Surfaces	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	453	0.03	< 0.005
2025	0.00	453	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	34.7	annual days of extreme heat
Extreme Precipitation	1.05	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	5	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	5	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A

Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	91.1
AQ-PM	96.5
AQ-DPM	26.9
Drinking Water	96.7
Lead Risk Housing	58.6
Pesticides	88.8
Toxic Releases	71.5
Traffic	30.9
Effect Indicators	—
CleanUp Sites	91.0
Groundwater	99.0

Haz Waste Facilities/Generators	66.7
Impaired Water Bodies	33.2
Solid Waste	93.3
Sensitive Population	—
Asthma	41.0
Cardio-vascular	54.8
Low Birth Weights	49.0
Socioeconomic Factor Indicators	—
Education	86.7
Housing	80.5
Linguistic	83.1
Poverty	91.5
Unemployment	61.5

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	9.867830104
Employed	2.194276915
Median HI	14.65417683
Education	—
Bachelor's or higher	6.877967407
High school enrollment	21.68612858
Preschool enrollment	37.39253176
Transportation	—
Auto Access	75.69613756

Active commuting	55.357372
Social	—
2-parent households	35.77569614
Voting	35.30091107
Neighborhood	—
Alcohol availability	85.56396766
Park access	5.427948159
Retail density	6.441678429
Supermarket access	36.30180932
Tree canopy	2.207108944
Housing	—
Homeownership	40.03592968
Housing habitability	41.67842936
Low-inc homeowner severe housing cost burden	72.84742718
Low-inc renter severe housing cost burden	36.87925061
Uncrowded housing	26.21583472
Health Outcomes	—
Insured adults	16.16835622
Arthritis	0.0
Asthma ER Admissions	55.7
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	29.1

Cognitively Disabled	54.2
Physically Disabled	33.4
Heart Attack ER Admissions	64.5
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	33.8
Elderly	92.9
English Speaking	18.7
Foreign-born	52.7
Outdoor Workers	3.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	92.0
Traffic Density	26.5
Traffic Access	0.0
Other Indices	—
Hardship	85.8

Other Decision Support	—
2016 Voting	33.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	95.0
Healthy Places Index Score for Project Location (b)	8.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	2-year construction.
Construction: Paving	Non-asphalt paving.

Phases 2 & 3 Construction Emissions

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Visalia Landfill - Compost Facility Phases 2/3 Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Visalia Landfill - Compost Facility Phases 2/3
Construction Start Date	1/3/2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.90
Precipitation (days)	24.4
Location	36.386496567736984, -119.3798413774999
County	Tulare
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2717
EDFZ	9
Electric Utility	Eastside Power Authority
Gas Utility	Southern California Gas
App Version	2022.1.1.20

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
General Heavy Industry	113	1000sqft	2.59	112,603	0.00	—	—	—

Other Asphalt Surfaces	0.41	Acre	0.41	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-10-A	Water Exposed Surfaces

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.21	9.52	14.9	0.03	0.31	0.36	0.67	0.28	0.09	0.37	—	3,037	3,037	0.12	0.09	1.56	3,068
Mit.	1.21	9.52	14.9	0.03	0.31	0.36	0.67	0.28	0.09	0.37	—	3,037	3,037	0.12	0.09	1.56	3,068
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	35.3	27.5	28.9	0.05	1.14	19.8	20.9	1.05	10.1	11.2	—	5,388	5,388	0.22	0.09	0.04	5,408
Mit.	35.3	27.5	28.9	0.05	1.14	5.21	6.35	1.05	2.65	3.70	—	5,388	5,388	0.22	0.09	0.04	5,408
% Reduced	—	—	—	—	—	74%	70%	—	74%	67%	—	—	—	—	—	—	—

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.26	6.63	9.84	0.02	0.22	0.69	0.90	0.20	0.29	0.49	—	2,002	2,002	0.08	0.05	0.42	2,021
Mit.	2.26	6.63	9.84	0.02	0.22	0.34	0.56	0.20	0.12	0.32	—	2,002	2,002	0.08	0.05	0.42	2,021
% Reduced	—	—	—	—	—	50%	38%	—	60%	35%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.41	1.21	1.80	< 0.005	0.04	0.13	0.17	0.04	0.05	0.09	—	331	331	0.01	0.01	0.07	335
Mit.	0.41	1.21	1.80	< 0.005	0.04	0.06	0.10	0.04	0.02	0.06	—	331	331	0.01	0.01	0.07	335
% Reduced	—	—	—	—	—	50%	38%	—	60%	35%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	1.21	9.52	14.9	0.03	0.31	0.36	0.67	0.28	0.09	0.37	—	3,037	3,037	0.12	0.09	1.56	3,068
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	35.3	27.5	28.9	0.05	1.14	19.8	20.9	1.05	10.1	11.2	—	5,388	5,388	0.22	0.09	0.04	5,408
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	2.26	6.63	9.84	0.02	0.22	0.69	0.90	0.20	0.29	0.49	—	2,002	2,002	0.08	0.05	0.42	2,021
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.41	1.21	1.80	< 0.005	0.04	0.13	0.17	0.04	0.05	0.09	—	331	331	0.01	0.01	0.07	335

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	1.21	9.52	14.9	0.03	0.31	0.36	0.67	0.28	0.09	0.37	—	3,037	3,037	0.12	0.09	1.56	3,068
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	35.3	27.5	28.9	0.05	1.14	5.21	6.35	1.05	2.65	3.70	—	5,388	5,388	0.22	0.09	0.04	5,408
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	2.26	6.63	9.84	0.02	0.22	0.34	0.56	0.20	0.12	0.32	—	2,002	2,002	0.08	0.05	0.42	2,021
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.41	1.21	1.80	< 0.005	0.04	0.06	0.10	0.04	0.02	0.06	—	331	331	0.01	0.01	0.07	335

3. Construction Emissions Details

3.1. Site Preparation (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	3.04	27.5	28.4	0.05	1.14	—	1.14	1.05	—	1.05	—	5,300	5,300	0.21	0.04	—	5,318
Dust From Material Movement	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.38	0.39	< 0.005	0.02	—	0.02	0.01	—	0.01	—	72.6	72.6	< 0.005	< 0.005	—	72.9
Dust From Material Movement	—	—	—	—	—	0.27	0.27	—	0.14	0.14	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.0	12.0	< 0.005	< 0.005	—	12.1
Dust From Material Movement	—	—	—	—	—	0.05	0.05	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.51	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	87.9	87.9	< 0.005	< 0.005	0.01	89.3

Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.25	1.25	< 0.005	< 0.005	< 0.005	1.27
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.21
Vendor	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
Hauling	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

3.2. Site Preparation (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.04	27.5	28.4	0.05	1.14	—	1.14	1.05	—	1.05	—	5,300	5,300	0.21	0.04	—	5,318
Dust From Material Movement	—	—	—	—	—	5.11	5.11	—	2.63	2.63	—	—	—	—	—	—	—
Onsite truck	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.38	0.39	< 0.005	0.02	—	0.02	0.01	—	0.01	—	72.6	72.6	< 0.005	< 0.005	—	72.9
Dust From Material Movement	—	—	—	—	—	0.07	0.07	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.0	12.0	< 0.005	< 0.005	—	12.1
Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.51	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	87.9	87.9	< 0.005	< 0.005	0.01	89.3
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.25	1.25	< 0.005	< 0.005	< 0.005	1.27
Vendor	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

Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.21
Vendor	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
Hauling	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

3.3. Grading (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.56	13.8	17.3	0.03	0.57	—	0.57	0.52	—	0.52	—	2,961	2,961	0.12	0.02	—	2,971
Dust From Material Movement	—	—	—	—	—	7.08	7.08	—	3.42	3.42	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.38	0.47	< 0.005	0.02	—	0.02	0.01	—	0.01	—	81.1	81.1	< 0.005	< 0.005	—	81.4
Dust From Material Movement	—	—	—	—	—	0.19	0.19	—	0.09	0.09	—	—	—	—	—	—	—

Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5
Dust From Material Movement	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.04	0.44	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	75.3	75.3	< 0.005	< 0.005	0.01	76.6
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.14	2.14	< 0.005	< 0.005	< 0.005	2.18
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.35	0.35	< 0.005	< 0.005	< 0.005	0.36
Vendor	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
Hauling	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

3.4. Grading (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.56	13.8	17.3	0.03	0.57	—	0.57	0.52	—	0.52	—	2,961	2,961	0.12	0.02	—	2,971
Dust From Material Movement	—	—	—	—	—	1.84	1.84	—	0.89	0.89	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.38	0.47	< 0.005	0.02	—	0.02	0.01	—	0.01	—	81.1	81.1	< 0.005	< 0.005	—	81.4
Dust From Material Movement	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5

Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.04	0.44	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	75.3	75.3	< 0.005	< 0.005	0.01	76.6
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.14	2.14	< 0.005	< 0.005	< 0.005	2.18
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.35	0.35	< 0.005	< 0.005	< 0.005	0.36
Vendor	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
Hauling	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

3.5. Building Construction (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.60	5.38	7.80	0.01	0.18	—	0.18	0.17	—	0.17	—	1,445	1,445	0.06	0.01	—	1,450
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.98	1.42	< 0.005	0.03	—	0.03	0.03	—	0.03	—	239	239	0.01	< 0.005	—	240
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.10	1.76	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	268	268	0.02	0.01	0.81	273
Vendor	0.01	0.49	0.18	< 0.005	0.01	0.11	0.11	0.01	0.03	0.03	—	372	372	0.01	0.06	0.75	389
Hauling	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.13	1.38	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	237	237	0.01	0.01	0.02	241
Vendor	0.01	0.52	0.19	< 0.005	0.01	0.11	0.11	0.01	0.03	0.03	—	372	372	0.01	0.06	0.02	389
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.07	0.86	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	148	148	0.01	0.01	0.21	151
Vendor	0.01	0.31	0.11	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	224	224	< 0.005	0.03	0.20	235
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.6	24.6	< 0.005	< 0.005	0.04	25.0
Vendor	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	37.1	37.1	< 0.005	0.01	0.03	38.8
Hauling	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

3.6. Building Construction (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.60	5.38	7.80	0.01	0.18	—	0.18	0.17	—	0.17	—	1,445	1,445	0.06	0.01	—	1,450
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.98	1.42	< 0.005	0.03	—	0.03	0.03	—	0.03	—	239	239	0.01	< 0.005	—	240
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.10	1.76	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	268	268	0.02	0.01	0.81	273
Vendor	0.01	0.49	0.18	< 0.005	0.01	0.11	0.11	0.01	0.03	0.03	—	372	372	0.01	0.06	0.75	389
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.13	1.38	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	237	237	0.01	0.01	0.02	241
Vendor	0.01	0.52	0.19	< 0.005	0.01	0.11	0.11	0.01	0.03	0.03	—	372	372	0.01	0.06	0.02	389
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.07	0.86	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	148	148	0.01	0.01	0.21	151
Vendor	0.01	0.31	0.11	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	224	224	< 0.005	0.03	0.20	235

Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.6	24.6	< 0.005	< 0.005	0.04	25.0
Vendor	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	37.1	37.1	< 0.005	0.01	0.03	38.8
Hauling	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

3.7. Paving (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	5.85	8.80	0.01	0.21	—	0.21	0.19	—	0.19	—	1,350	1,350	0.05	0.01	—	1,355
Paving	0.22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.5	18.5	< 0.005	< 0.005	—	18.6
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.06	3.06	< 0.005	< 0.005	—	3.07

Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.06	0.58	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	100	100	< 0.005	0.01	0.01	102
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.43	1.43	< 0.005	< 0.005	< 0.005	1.45
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.24
Vendor	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
Hauling	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

3.8. Paving (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	5.85	8.80	0.01	0.21	—	0.21	0.19	—	0.19	—	1,350	1,350	0.05	0.01	—	1,355
Paving	0.22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.5	18.5	< 0.005	< 0.005	—	18.6
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.06	3.06	< 0.005	< 0.005	—	3.07
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.06	0.58	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	100	100	< 0.005	0.01	0.01	102
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.43	1.43	< 0.005	< 0.005	< 0.005	1.45
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.24
Vendor	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
Hauling	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

3.9. Architectural Coating (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	35.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.49	5.49	< 0.005	< 0.005	—	5.51
Architectural Coatings	1.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.91	0.91	< 0.005	< 0.005	—	0.91
Architectural Coatings	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.28	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	47.5	47.5	< 0.005	< 0.005	< 0.005	48.3
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.02	2.02	< 0.005	< 0.005	< 0.005	2.06
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.34	0.34	< 0.005	< 0.005	< 0.005	0.34
Vendor	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
Hauling	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

3.10. Architectural Coating (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	35.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.49	5.49	< 0.005	< 0.005	—	5.51
Architectural Coatings	1.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.91	0.91	< 0.005	< 0.005	—	0.91
Architectural Coatings	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.28	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	47.5	47.5	< 0.005	< 0.005	< 0.005	48.3
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.02	2.02	< 0.005	< 0.005	< 0.005	2.06
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.34	0.34	< 0.005	< 0.005	< 0.005	0.34
Vendor	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
Hauling	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

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequeste	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequeste red	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequeste red	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/3/2028	1/9/2028	5.00	5.00	—
Grading	Grading	1/10/2028	1/23/2028	5.00	10.0	—
Building Construction	Building Construction	1/24/2028	11/26/2028	5.00	220	—
Paving	Paving	11/27/2028	12/3/2028	5.00	5.00	—
Architectural Coating	Architectural Coating	12/4/2028	12/24/2028	5.00	15.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74

Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	2.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	6.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	6.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37

Paving	Cement and Mortar Mixers	Diesel	Average	2.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	6.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	6.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	—	6.80	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	6.80	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	47.3	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	18.5	6.80	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	20.0	7.70	LDA,LDT1,LDT2

Paving	Vendor	—	6.80	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	9.46	7.70	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.80	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	—	6.80	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	6.80	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	47.3	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	18.5	6.80	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—

Paving	Worker	20.0	7.70	LDA,LDT1,LDT2
Paving	Vendor	—	6.80	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	9.46	7.70	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.80	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	168,905	56,302	1,085

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	7.50	0.00	—
Grading	—	—	10.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.41

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
General Heavy Industry	0.00	0%
Other Asphalt Surfaces	0.41	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2028	0.00	453	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	34.7	annual days of extreme heat
Extreme Precipitation	1.05	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	5	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	5	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	91.1
AQ-PM	96.5
AQ-DPM	26.9
Drinking Water	96.7
Lead Risk Housing	58.6
Pesticides	88.8
Toxic Releases	71.5
Traffic	30.9
Effect Indicators	—
CleanUp Sites	91.0
Groundwater	99.0
Haz Waste Facilities/Generators	66.7
Impaired Water Bodies	33.2
Solid Waste	93.3

Sensitive Population	—
Asthma	41.0
Cardio-vascular	54.8
Low Birth Weights	49.0
Socioeconomic Factor Indicators	—
Education	86.7
Housing	80.5
Linguistic	83.1
Poverty	91.5
Unemployment	61.5

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	9.867830104
Employed	2.194276915
Median HI	14.65417683
Education	—
Bachelor's or higher	6.877967407
High school enrollment	21.68612858
Preschool enrollment	37.39253176
Transportation	—
Auto Access	75.69613756
Active commuting	55.357372
Social	—
2-parent households	35.77569614

Voting	35.30091107
Neighborhood	—
Alcohol availability	85.56396766
Park access	5.427948159
Retail density	6.441678429
Supermarket access	36.30180932
Tree canopy	2.207108944
Housing	—
Homeownership	40.03592968
Housing habitability	41.67842936
Low-inc homeowner severe housing cost burden	72.84742718
Low-inc renter severe housing cost burden	36.87925061
Uncrowded housing	26.21583472
Health Outcomes	—
Insured adults	16.16835622
Arthritis	0.0
Asthma ER Admissions	55.7
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	29.1
Cognitively Disabled	54.2
Physically Disabled	33.4
Heart Attack ER Admissions	64.5

Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	33.8
Elderly	92.9
English Speaking	18.7
Foreign-born	52.7
Outdoor Workers	3.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	92.0
Traffic Density	26.5
Traffic Access	0.0
Other Indices	—
Hardship	85.8
Other Decision Support	—
2016 Voting	33.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	95.0
Healthy Places Index Score for Project Location (b)	8.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	1-year construction.

Biomass Conversion Facility Construction Emissions

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Visalia Landfill - Biomass Conversion Facility Detailed Report

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3.10. Architectural Coating (2024) - Mitigated

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Visalia Landfill - Biomass Conversion Facility
Construction Start Date	1/8/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.90
Precipitation (days)	24.4
Location	36.386515040699564, -119.3798938317131
County	Tulare
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2717
EDFZ	9
Electric Utility	Eastside Power Authority
Gas Utility	Southern California Gas
App Version	2022.1.1.20

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
General Heavy Industry	80.0	1000sqft	1.84	80,000	0.00	—	—	—

Parking Lot	20.0	Space	0.18	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-10-A	Water Exposed Surfaces

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.52	11.8	13.8	0.03	0.46	0.26	0.72	0.42	0.06	0.49	—	2,695	2,695	0.11	0.07	1.61	2,720
Mit.	1.52	11.8	13.8	0.03	0.46	0.26	0.72	0.42	0.06	0.49	—	2,695	2,695	0.11	0.07	1.61	2,720
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	37.5	15.9	15.8	0.03	0.74	7.14	7.88	0.68	3.44	4.12	—	2,757	2,757	0.11	0.07	0.04	2,767
Mit.	37.5	15.9	15.8	0.03	0.74	1.90	2.64	0.68	0.90	1.59	—	2,757	2,757	0.11	0.07	0.04	2,767
% Reduced	—	—	—	—	—	73%	67%	—	74%	61%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	2.01	7.83	8.90	0.02	0.31	0.37	0.68	0.29	0.13	0.42	—	1,744	1,744	0.07	0.04	0.43	1,759
Mit.	2.01	7.83	8.90	0.02	0.31	0.21	0.52	0.29	0.06	0.35	—	1,744	1,744	0.07	0.04	0.43	1,759
% Reduced	—	—	—	—	—	43%	23%	—	53%	17%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.37	1.43	1.62	< 0.005	0.06	0.07	0.12	0.05	0.02	0.08	—	289	289	0.01	0.01	0.07	291
Mit.	0.37	1.43	1.62	< 0.005	0.06	0.04	0.10	0.05	0.01	0.06	—	289	289	0.01	0.01	0.07	291
% Reduced	—	—	—	—	—	43%	23%	—	53%	17%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.52	11.8	13.8	0.03	0.46	0.26	0.72	0.42	0.06	0.49	—	2,695	2,695	0.11	0.07	1.61	2,720
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	37.5	15.9	15.8	0.03	0.74	7.14	7.88	0.68	3.44	4.12	—	2,757	2,757	0.11	0.07	0.04	2,767
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.01	7.83	8.90	0.02	0.31	0.37	0.68	0.29	0.13	0.42	—	1,744	1,744	0.07	0.04	0.43	1,759
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.37	1.43	1.62	< 0.005	0.06	0.07	0.12	0.05	0.02	0.08	—	289	289	0.01	0.01	0.07	291

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.52	11.8	13.8	0.03	0.46	0.26	0.72	0.42	0.06	0.49	—	2,695	2,695	0.11	0.07	1.61	2,720
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	37.5	15.9	15.8	0.03	0.74	1.90	2.64	0.68	0.90	1.59	—	2,757	2,757	0.11	0.07	0.04	2,767
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.01	7.83	8.90	0.02	0.31	0.21	0.52	0.29	0.06	0.35	—	1,744	1,744	0.07	0.04	0.43	1,759
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.37	1.43	1.62	< 0.005	0.06	0.04	0.10	0.05	0.01	0.06	—	289	289	0.01	0.01	0.07	291

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.31	12.7	11.4	0.03	0.55	—	0.55	0.51	—	0.51	—	2,716	2,716	0.11	0.02	—	2,725

Dust From Material Movement	—	—	—	—	—	1.59	1.59	—	0.17	0.17	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.17	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	37.2	37.2	< 0.005	< 0.005	—	37.3
Dust From Material Movement	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.16	6.16	< 0.005	< 0.005	—	6.18
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.31	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	40.9	40.9	< 0.005	< 0.005	< 0.005	41.6
Vendor	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
Hauling	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.58	0.58	< 0.005	< 0.005	< 0.005	0.59
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.10	0.10	< 0.005	< 0.005	< 0.005	0.10
Vendor	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
Hauling	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

3.2. Site Preparation (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.31	12.7	11.4	0.03	0.55	—	0.55	0.51	—	0.51	—	2,716	2,716	0.11	0.02	—	2,725
Dust From Material Movement	—	—	—	—	—	0.41	0.41	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.17	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	37.2	37.2	< 0.005	< 0.005	—	37.3

Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.16	6.16	< 0.005	< 0.005	—	6.18
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.31	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	40.9	40.9	< 0.005	< 0.005	< 0.005	41.6
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.58	0.58	< 0.005	< 0.005	< 0.005	0.59
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.10	0.10	< 0.005	< 0.005	< 0.005	0.10
Vendor	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

Hauling	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

3.3. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.65	15.9	15.4	0.02	0.74	—	0.74	0.68	—	0.68	—	2,454	2,454	0.10	0.02	—	2,462
Dust From Material Movement	—	—	—	—	—	7.08	7.08	—	3.42	3.42	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.44	0.42	< 0.005	0.02	—	0.02	0.02	—	0.02	—	67.2	67.2	< 0.005	< 0.005	—	67.5
Dust From Material Movement	—	—	—	—	—	0.19	0.19	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.1	11.1	< 0.005	< 0.005	—	11.2

Dust From Material Movement	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.41	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	54.5	54.5	< 0.005	< 0.005	0.01	55.4
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.55	1.55	< 0.005	< 0.005	< 0.005	1.58
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.26
Vendor	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
Hauling	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

3.4. Grading (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.65	15.9	15.4	0.02	0.74	—	0.74	0.68	—	0.68	—	2,454	2,454	0.10	0.02	—	2,462
Dust From Material Movement	—	—	—	—	—	1.84	1.84	—	0.89	0.89	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.44	0.42	< 0.005	0.02	—	0.02	0.02	—	0.02	—	67.2	67.2	< 0.005	< 0.005	—	67.5
Dust From Material Movement	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.1	11.1	< 0.005	< 0.005	—	11.2
Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.41	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	54.5	54.5	< 0.005	< 0.005	0.01	55.4
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.55	1.55	< 0.005	< 0.005	< 0.005	1.58
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.26
Vendor	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
Hauling	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

3.5. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.32	11.2	11.9	0.02	0.46	—	0.46	0.42	—	0.42	—	2,201	2,201	0.09	0.02	—	2,209
Onsite truck	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.32	11.2	11.9	0.02	0.46	—	0.46	0.42	—	0.42	—	2,201	2,201	0.09	0.02	—	2,209
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.79	6.77	7.20	0.01	0.28	—	0.28	0.25	—	0.25	—	1,327	1,327	0.05	0.01	—	1,331
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	1.24	1.31	< 0.005	0.05	—	0.05	0.05	—	0.05	—	220	220	0.01	< 0.005	—	220
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.11	1.75	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	207	207	0.01	0.01	0.85	211
Vendor	0.01	0.41	0.15	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	287	287	0.01	0.04	0.76	301
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.14	1.37	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	183	183	0.02	0.01	0.02	186
Vendor	0.01	0.44	0.16	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	287	287	0.01	0.04	0.02	300
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.10	0.07	0.85	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	115	115	0.01	0.01	0.22	117
Vendor	0.01	0.26	0.09	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	173	173	< 0.005	0.03	0.20	181
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.16	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.0	19.0	< 0.005	< 0.005	0.04	19.3
Vendor	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.6	28.6	< 0.005	< 0.005	0.03	30.0
Hauling	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

3.6. Building Construction (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.32	11.2	11.9	0.02	0.46	—	0.46	0.42	—	0.42	—	2,201	2,201	0.09	0.02	—	2,209
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.32	11.2	11.9	0.02	0.46	—	0.46	0.42	—	0.42	—	2,201	2,201	0.09	0.02	—	2,209
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.79	6.77	7.20	0.01	0.28	—	0.28	0.25	—	0.25	—	1,327	1,327	0.05	0.01	—	1,331

Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	1.24	1.31	< 0.005	0.05	—	0.05	0.05	—	0.05	—	220	220	0.01	< 0.005	—	220
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.11	1.75	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	207	207	0.01	0.01	0.85	211
Vendor	0.01	0.41	0.15	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	287	287	0.01	0.04	0.76	301
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.14	1.37	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	183	183	0.02	0.01	0.02	186
Vendor	0.01	0.44	0.16	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	287	287	0.01	0.04	0.02	300
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.07	0.85	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	115	115	0.01	0.01	0.22	117
Vendor	0.01	0.26	0.09	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	173	173	< 0.005	0.03	0.20	181
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.16	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.0	19.0	< 0.005	< 0.005	0.04	19.3
Vendor	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.6	28.6	< 0.005	< 0.005	0.03	30.0
Hauling	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

3.7. Paving (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.75	6.44	8.26	0.01	0.31	—	0.31	0.29	—	0.29	—	1,244	1,244	0.05	0.01	—	1,248
Paving	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.0	17.0	< 0.005	< 0.005	—	17.1
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.82	2.82	< 0.005	< 0.005	—	2.83
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.61	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	81.8	81.8	0.01	< 0.005	0.01	83.1
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.16	1.16	< 0.005	< 0.005	< 0.005	1.18
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20
Vendor	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
Hauling	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

3.8. Paving (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.75	6.44	8.26	0.01	0.31	—	0.31	0.29	—	0.29	—	1,244	1,244	0.05	0.01	—	1,248
Paving	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.0	17.0	< 0.005	< 0.005	—	17.1
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.82	2.82	< 0.005	< 0.005	—	2.83
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.61	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	81.8	81.8	0.01	< 0.005	0.01	83.1
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.16	1.16	< 0.005	< 0.005	< 0.005	1.18
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20

Vendor	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
Hauling	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

3.9. Architectural Coating (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.91	1.15	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	37.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.66	3.66	< 0.005	< 0.005	—	3.67
Architectural Coatings	1.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61

Architectu Coatings	0.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.27	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	36.6	36.6	< 0.005	< 0.005	< 0.005	37.3
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.04	1.04	< 0.005	< 0.005	< 0.005	1.06
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.18
Vendor	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
Hauling	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

3.10. Architectural Coating (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.91	1.15	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	37.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.66	3.66	< 0.005	< 0.005	—	3.67
Architectural Coatings	1.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Architectural Coatings	0.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.27	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	36.6	36.6	< 0.005	< 0.005	< 0.005	37.3
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.04	1.04	< 0.005	< 0.005	< 0.005	1.06
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.18
Vendor	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
Hauling	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

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetatio	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/8/2024	1/14/2024	5.00	5.00	—
Grading	Grading	1/15/2024	1/28/2024	5.00	10.0	—
Building Construction	Building Construction	1/29/2024	12/1/2024	5.00	220	—
Paving	Paving	12/2/2024	12/8/2024	5.00	5.00	—
Architectural Coating	Architectural Coating	12/9/2024	12/22/2024	5.00	10.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Scrapers	Diesel	Average	1.00	8.00	423	0.48
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	7.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74

Building Construction	Tractors/Loaders/Backh	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Paving	Tractors/Loaders/Backh oes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Scrapers	Diesel	Average	1.00	8.00	423	0.48
Site Preparation	Tractors/Loaders/Backh oes	Diesel	Average	1.00	7.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backh oes	Diesel	Average	2.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	7.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backh oes	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Paving	Tractors/Loaders/Backh oes	Diesel	Average	1.00	8.00	84.0	0.37

Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	—	6.80	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	6.80	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	33.6	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	13.1	6.80	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	7.70	LDA,LDT1,LDT2

Paving	Vendor	—	6.80	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	6.72	7.70	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.80	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	—	6.80	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	6.80	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	33.6	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	13.1	6.80	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—

Paving	Worker	15.0	7.70	LDA,LDT1,LDT2
Paving	Vendor	—	6.80	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	6.72	7.70	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.80	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	120,000	40,000	470

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	7.50	0.00	—
Grading	—	—	10.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.18

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
General Heavy Industry	0.00	0%
Parking Lot	0.18	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	453	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	34.7	annual days of extreme heat
Extreme Precipitation	1.05	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	5	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	5	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	91.1
AQ-PM	96.5
AQ-DPM	26.9
Drinking Water	96.7
Lead Risk Housing	58.6
Pesticides	88.8
Toxic Releases	71.5
Traffic	30.9
Effect Indicators	—
CleanUp Sites	91.0
Groundwater	99.0
Haz Waste Facilities/Generators	66.7
Impaired Water Bodies	33.2
Solid Waste	93.3

Sensitive Population	—
Asthma	41.0
Cardio-vascular	54.8
Low Birth Weights	49.0
Socioeconomic Factor Indicators	—
Education	86.7
Housing	80.5
Linguistic	83.1
Poverty	91.5
Unemployment	61.5

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	9.867830104
Employed	2.194276915
Median HI	14.65417683
Education	—
Bachelor's or higher	6.877967407
High school enrollment	21.68612858
Preschool enrollment	37.39253176
Transportation	—
Auto Access	75.69613756
Active commuting	55.357372
Social	—
2-parent households	35.77569614

Voting	35.30091107
Neighborhood	—
Alcohol availability	85.56396766
Park access	5.427948159
Retail density	6.441678429
Supermarket access	36.30180932
Tree canopy	2.207108944
Housing	—
Homeownership	40.03592968
Housing habitability	41.67842936
Low-inc homeowner severe housing cost burden	72.84742718
Low-inc renter severe housing cost burden	36.87925061
Uncrowded housing	26.21583472
Health Outcomes	—
Insured adults	16.16835622
Arthritis	0.0
Asthma ER Admissions	55.7
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	29.1
Cognitively Disabled	54.2
Physically Disabled	33.4
Heart Attack ER Admissions	64.5

Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	33.8
Elderly	92.9
English Speaking	18.7
Foreign-born	52.7
Outdoor Workers	3.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	92.0
Traffic Density	26.5
Traffic Access	0.0
Other Indices	—
Hardship	85.8
Other Decision Support	—
2016 Voting	33.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	95.0
Healthy Places Index Score for Project Location (b)	8.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	1-year construction.

APPENDIX C – MOBILE SOURCE EMISSIONS

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Appendix C:
Mobile Source Emissions

Air Quality and GHG Technical Report

Prepared for:

Tulare County Resource Management Agency
Solid Waste Department
Visalia Landfill
8614 Avenue 328
Visalia, CA 93291

October 2023

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Attachments

ATTACHMENT C-1 – EMISSION CALCULATION WORKSHEETS

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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

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VOC	Volatile Organic Compounds
W	Average Roadway Fleet Weight (Tons)
wt.	Weight
yr	Year

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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 biomass conversion 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 biomass conversion facility will process 25,000 TPY of woody biomass feedstock. The compost facility will produce finished compost for shipment to customers, and the biomass conversion facility will produce biochar for shipment to customers. The process throughput used in this analysis is summarized in Table 1-1.

Peak daily throughput for the compost facility may be as high as 1,000 TPD. However, because these emission calculations are intended to support the CEQA evaluation of the project, annual average daily throughput is used in the calculations.

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Table 1-1: Process Throughput

Material	Compost Facility		Biomass Conversion Facility	
	TPY	TPD	TPY	TPD
Feedstock	200,000	641	25,000	68
Finished Product	120,000	385	1620	4

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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) and the number of engine starts expected to occur. 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 EMFAC2021 (CARB 2021), developed and maintained by the California Air Resources Board (CARB). The EMFAC2021 model was used to generate the emission factors used for estimating the onroad emissions from the vehicle fleet required for operation of the proposed composting and biomass conversion 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. Feedstock to the compost and biomass conversion facilities assumes that all feedstock materials are supplied from within Tulare County, and the maximum distance from the county line to the compost facility of 38 miles is used in the emission calculations.

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 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 EMFAC2021 component being calculated) for 2030, the first year anticipated for Phase 3 operation of the compost facility. Phase 3 is representative of the project at full buildout and is the period with the highest operational emissions. Calculation procedures are summarized in Table 2-1.

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Table 2-1: EMFAC2021 Components Included in Onroad Vehicle Emission Calculations

EMFAC2021 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 of 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 EMFAC2021 model was run to derive emission factors for the LDT1, LDT2, and T7 vehicles. The EMFAC2021 factors used for calculating emissions from the onroad mobile sources are listed 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 biomass conversion facility is closer to the access gate; thus, use of the compost distance for all onsite 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 raw material delivery trucks and finished product delivery trucks assumes the distance from the facility to the Tulare County line to the south. Off-site mileage for the workers assumes that workers live in Visalia. 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 biomass conversion facility.

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Table 2-3: Onroad Mobile Source Activity for Composting and Biomass Conversion 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 Compost	312	54	2	33,696	0.85	38	1,309,090
T7 Tractor	Ship Finished Compost	312	49	2	30,576	0.85	38	1,187,878
T7 Tractor	Ship Raw Material to Biomass Conversion	365	6	2	4,380	0.85	38	170,163
T7 Tractor	Ship Biochar	365	1	2	730	0.85	38	28,361

Notes:

1. LDT1 (Light Duty Truck), LHD2 (Light-Heavy-Duty), and T7 Tractor (diesel) refer to vehicle categories in EMFAC2021. LDT1 is gasoline fueled; LHD2 and T7 are diesel fueled.

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.

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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	12,048.14	148.33	1,745.45	64.10	169.05	161.71
Fugitive	---	55.05	---	---	605.49	220.54
Total (lb/yr)	12,048.14	203.37	1,745.45	64.10	774.55	382.26
Total (TPY)	6.02	0.10	0.87	0.03	0.39	0.19

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)
3,077	4.17	475.15	3,219

2.2 Offroad Equipment Exhaust Emissions

The exhaust emissions from the use of offroad equipment required for composting and biomass conversion 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 not available from the project description, 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

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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 biomass conversion 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.

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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	137.43	64.13	1,191.05	2.25	4.58	4.58
Excavator	141.85	66.20	1,229.35	2.32	4.73	4.73
Loader	858.93	400.83	7,444.05	14.03	28.63	28.63
Water Truck	247.00	115.27	2,140.67	4.04	8.23	8.23
Sweeper Truck	205.03	95.68	1,776.91	3.35	6.83	6.83
Lb/yr	1,645.12	767.72	14,257.73	26.88	54.84	54.84
TPY	0.82	0.38	7.13	0.01	0.03	0.03

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	10,617	108	4	1	109
Excavator	10,959	112	4	1	112
Loader	66,357	678	27	5	680
Water Truck	19,082	195	8	2	195
Sweeper Truck	15,840	162	6	1	162
Total	127,095	1,298	52	10	1,302

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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 biomass conversion 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 on 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

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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.

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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 Raw Material to Compost	VMT/day	1,365	1,599	1,132	8.21	27.00	4,131
	VMT/Yr	425,749	498,991	353,276	2560.90	8424.00	1,280,448
Ship Finished Compost	VMT/day	1,238	1,451	1,027	7.45	24.50	3,749
	VMT/yr	386,328	452,788	320,565	2,324	7,644	1,161,888
Ship Raw Material to Biomass Conversion	VMT/day	152	178	126	0.91	3.00	459
	VMT/Yr	55,341	64,862	45,921	333	1,095	166,440
Ship Biochar	VMT/day	25	30	21	0.15	0.50	77
	VMT/yr	9,224	10,810	7,653	55	183	27,740

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)	0.45	0.88	0.63	0.03	0.55	1.88	4.43
$PM_{2.5}$ (lb/day)	0.11	0.22	0.16	0.01	0.14	0.47	1.11
PM_{10} (lb/yr)	140.93	274.86	194.59	10.57	169.17	575.19	1365.32

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Pollutant	Freeway	Major	Collector	Local	Rural	On-Site	Total
$PM_{2.5}$ (lb/yr)	35.23	68.71	48.65	2.64	42.29	143.80	341.33

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. Water truck 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

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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 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	9.0	0.3	2.7	842
Excavator	28.6	9.0	0.3	2.7	842
Loader	22.5	9.0	0.3	13.5	4,212
Water Truck	21.5	9.0	3.0	27.0	8,424
Sweeper Truck	16.5	9.0	3.0	27.0	8,424

Notes:

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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	154	15	0.49	0.05
Excavator	274	27	0.88	0.09
Loader	1232	123	3.95	0.39
Water Truck	0	0	0.00	0.00
Sweeper Truck	0	0	0.00	0.00
Total (lb/yr)	2018	202	6.47	0.65
Total (TPY)	1.0	0.1	---	---

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4.0 SUMMARY OF CRITERIA POLLUTANT AND GHG EMISSIONS

The predicted emissions from the proposed compost and biomass conversion 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	38.62	0.65	5.59	0.21	2.48	1.23
Onroad Vehicle Paved Road Dust	---	---	---	---	4.43	1.11
Onroad Vehicle Unpaved Road Dust	---	---	---	---	0.00	0.00
Offroad Equipment Exhaust	5.27	2.46	45.70	0.09	0.18	0.18
Offroad Equipment Unpaved Dust	---	---	---	---	6.47	0.65
Total	43.89	3.11	51.29	0.29	13.56	3.16

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	12,048.14	203.37	1,745.45	64.10	774.55	382.26
Onroad Vehicle Paved Road Dust	---	---	---	---	1,365.32	341.33
Onroad Vehicle Unpaved Road Dust	---	---	---	---	0.00	0.00
Offroad Equipment Exhaust	1,645.12	767.72	14,257.73	26.88	54.84	54.84
Offroad Equipment Unpaved Dust	---	---	---	---	2017.55	201.76
Total (lb/yr)	13,693.26	971.10	16,003.18	90.98	4,212.26	980.18
Total (TPY)	6.85	0.49	8.00	0.05	2.11	0.49

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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	3,077.18	0.00	0.48	3,218.88
Onroad Vehicle Paved Road Dust	---	---	---	---
Onroad Vehicle Unpaved Road Dust	---	---	---	---
Offroad Equipment Exhaust	1,297.64	52.11	10.17	1301.97
Offroad Equipment Unpaved Dust	---	---	---	---
Total	4,374.82	52.11	10.64	4,520.85

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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 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	0.020	0.006
T7 Tractor	0.060	0.018	3.676	1.081
Fuel Truck	0.001	0.000	1.830	0
Tractors	0.002	0.000	4.581	0
Excavator	0.002	0.000	4.728	0
Loader	0.010	0.000	28.631	0
Water Truck	0.003	0.000	8.233	0
Sweeper Truck	0.002	0.000	6.834	0
Total PM_{10} = DPM	0.079	0.018	58.533	1.087

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.

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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 0.27 pounds per hour and 744.37 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.

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Table 5-4: Paved Road Dust TAC Emissions

TAC	CAS No.	Wt. Fraction	Emissions	
			lb/hr	lb/yr
Arsenic	7440-38-2	0.000013	3.52E-06	9.68E-03
Cadmium	7440-43-9	0.000003	8.12E-07	2.23E-03
Chromium-VI[1]	18540-29-9	0.00000085	2.30E-07	6.33E-04
Cobalt	7440-48-4	0.000023	6.22E-06	1.71E-02
Copper	7440-50-8	0.000148	4.00E-05	1.10E-01
Lead	7439-92-1	0.000124	3.35E-05	9.23E-02
Manganese	7439-96-5	0.0008	2.16E-04	5.95E-01
Nickel	7440-02-0	0.000012	3.25E-06	8.93E-03
Mercury	7439-97-6	0.000009	2.44E-06	6.70E-03
Selenium	7782-49-2	0.000002	5.41E-07	1.49E-03
Vanadium	7440-62-2	0.000071	1.92E-05	5.28E-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 obtained from SJVAPCD for dust from a compost facility (SJVAPCD 2016). The SJVAPCD compost speciation is used because it is assumed that the unpaved road dust will be composed predominately of compost debris. On-site unpaved road PM_{10} emissions are based on PM_{10} emissions of 0.72 pounds per hour and 2,017.55 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.	lb TAC/lb dust	Emissions	
			lb/hr	lb/yr
Arsenic	7440-38-2	6.20E-06	4.45E-06	1.25E-02
Cadmium	7440-43-9	2.00E-06	1.44E-06	4.04E-03
Chromium-VI[1]	18540-29-9	2.45E-06	1.76E-06	4.94E-03
Cobalt	7440-48-4	8.80E-06	6.32E-06	1.78E-02
Copper	7440-50-8	6.90E-05	4.96E-05	1.39E-01
Lead	7439-92-1	2.00E-04	1.44E-04	4.04E-01
Manganese	7439-96-5	4.40E-04	3.16E-04	8.88E-01
Nickel	7440-02-0	9.50E-05	6.83E-05	1.92E-01
Mercury	7439-97-6	1.00E-06	7.19E-07	2.02E-03
Selenium	7782-49-2	1.00E-06	7.19E-07	2.02E-03

1. Hexavalent chromium is assumed to be 5% of total chromium per SJVAPCD guidance.

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ATTACHMENT C-1 – EMISSION CALCULATION WORKSHEETS

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Visalia Landfill Compost and Biomass Conversion Facilities
Mobile Source
Emission Calculations

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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 - Biomass Conversion 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

Biomass Conversion 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

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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[2,3]	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 Compost	47,000	23,000	35,000	312	54	2	33,696	0.85	38	38.85	28,642	1,280,448	1,309,090
T7 Tractor	Ship Finished Compost	39,000	23,000	31,000	312	49	2	30,576	0.85	38	38.85	25,990	1,161,888	1,187,878
T7 Tractor	Ship Raw Material to Biomass Conv.	47,000	23,000	35,000	365	6	2	4,380	0.85	38	38.85	3,723	166,440	170,163
T7 Tractor	Ship Biochar	47,000	23,000	35,000	365	1	2	730	0.85	38	38.85	621	27,740	28,361

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	110	69,382	58,975	2,636,516	2,695,491

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. Mileage for raw material and finished 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	0.053	0.00000	0.180	28.25	0.00	6.02	34.27	1.84	32.43	0.11	5.89E-03
	LHD2	1.214	0.14733	0.000	17.63	0.13	0.00	17.77	0.95	16.81	0.06	3.05E-03
	T7 Tractor	1.927	1.74894	1.867	11,443.57	267.28	285.25	11,996.10	262.46	11,733.64	38.45	8.41E-01
VOC	LDT1	0.011	0.00000	0.207	5.78	0.00	6.92	12.70	0.68	12.02	0.04	2.18E-03
	LHD2	0.153	0.00873	0.000	2.22	0.01	0.00	2.23	0.12	2.11	0.01	3.84E-04
	T7 Tractor	0.019	0.14800	0.000	110.77	22.62	0.00	133.39	2.92	130.47	0.43	9.35E-03
CO	LDT1	0.716	0.00000	1.863	379.61	0.00	62.32	441.93	23.70	418.23	1.42	7.60E-02
	LHD2	0.739	0.07232	0.000	10.73	0.07	0.00	10.79	0.58	10.22	0.03	1.86E-03
	T7 Tractor	0.161	2.18687	0.000	958.52	334.21	0.00	1,292.72	28.28	1,264.44	4.14	9.07E-02
SOx	LDT1	0.003	0.00000	0.001	1.34	0.00	0.02	1.36	0.07	1.29	0.00	2.34E-04
	LHD2	0.005	0.00015	0.000	0.08	0.00	0.00	0.08	0.00	0.07	0.00	1.36E-05
	T7 Tractor	0.010	0.00318	0.000	62.17	0.49	0.00	62.66	1.37	61.28	0.20	4.39E-03
PM10	LDT1	0.001	0.00000	0.002	0.61	0.00	0.06	0.66	0.04	0.63	0.00	1.14E-04
	LHD2	0.025	0.00222	0.000	0.36	0.00	0.00	0.37	0.02	0.35	0.00	6.30E-05
	T7 Tractor	0.028	0.00063	0.000	167.93	0.10	0.00	168.02	3.68	164.35	0.54	1.18E-02
PM2.5	LDT1	0.001	0.00000	0.002	0.56	0.00	0.05	0.61	0.03	0.58	0.00	1.05E-04
	LHD2	0.024	0.00212	0.000	0.35	0.00	0.00	0.35	0.02	0.33	0.00	6.03E-05
	T7 Tractor	0.027	0.00060	0.000	160.66	0.09	0.00	160.75	3.52	157.24	0.52	1.13E-02

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	0.16	0.55	0.38	0.56	5.2	18.6	12.7	18.6	55.05	2.95	52.09	0.18
	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	213.74	366.56	580.30	12.70	567.61	1.860
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	53.43	157.10	210.53	4.61	205.93	0.675

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	12048.14	148.33	1745.45	64.10	169.05	161.71
Fugitive	---	55.05	---	---	605.49	220.54
Total (Lb/Yr)	12048.14	203.37	1745.45	64.10	774.55	382.26
Total (TPY)	6.02	0.10	0.87	0.03	0.39	0.19

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	256.218	0.000	54.082	61.7	0.000	0.8	62
	LHD2	575.901	16.363	0.000	3.8	0.007	0.0	4
	T7 Tractor	1108.337	336.967	0.000	2,987.5	23.379	0.0	3,011
CH4	LDT1	0.003	0.000	0.045	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	0.005	0.000	0.005	0.00	0.000	0.00	0.00
	LHD2	0.091	0.003	0.000	0.00	0.000	0.00	0.00
	T7 Tractor	0.174	0.053	0.000	0.47	0.004	0.00	0.47
CO2e	LDT1							63
	LHD2							4
	T7 Tractor							3,152
	Total							**3,219**

Table 3f: GHG Emissions from Onroad Mobile Source Activity

CO_2	CH_4	N_2O	Total CO_2e
(MT/Yr)	(Kg/Yr)	(Kg/Yr)	(MT/Yr)
3,077	4.17	475.15	3,219

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 Compost	VMT/day	1,365	1,599	1,132	8.21	27.00	4,131	91.8	4,223
		VMT/Yr	425,749	498,991	353,276	2560.90	8424.00	1,280,448	28,642	1,309,090
T7 Tractor	Ship Finished Compost	VMT/day	1,238	1,451	1,027	7.45	24.50	3,749	83.3	3,832
		VMT/Yr	386,328	452,788	320,565	2,324	7,644	1,161,888	25,990	1,187,878
T7 Tractor	Ship Raw Material to Biomass Conv.	VMT/day	152	178	126	0.91	3.00	459	10	469
		VMT/Yr	55,341	64,862	45,921	333	1,095	166,440	3,723	170,163
T7 Tractor	Ship Biochar	VMT/day	25	30	21	0.15	0.50	77	2	78
		VMT/Yr	9,224	10,810	7,653	55	183	27,740	621	28,361

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 Compost	PM10	2.01E-01	3.93E-01	2.78E-01	1.51E-02	2.15E-01	7.31E-01	1.83E+00
		PM2.5	5.04E-02	9.82E-02	6.96E-02	3.78E-03	5.37E-02	1.83E-01	4.58E-01
T7 Tractor	Ship Finished Compost	PM10	1.83E-01	3.57E-01	2.52E-01	1.37E-02	1.95E-01	6.63E-01	1.66E+00
		PM2.5	4.57E-02	8.91E-02	6.31E-02	3.43E-03	4.88E-02	1.66E-01	4.16E-01
T7 Tractor	Ship Raw Material to Biomass Conv.	PM10	2.24E-02	4.37E-02	3.09E-02	1.68E-03	2.39E-02	8.12E-02	2.04E-01
		PM2.5	5.60E-03	1.09E-02	7.73E-03	4.20E-04	5.97E-03	2.03E-02	5.09E-02
T7 Tractor	Ship Biochar	PM10	3.73E-03	7.28E-03	5.15E-03	2.80E-04	3.98E-03	1.35E-02	3.40E-02
		PM2.5	9.33E-04	1.82E-03	1.29E-03	7.00E-05	9.95E-04	3.38E-03	8.49E-03
Total	All	PM10	0.45	0.88	0.63	0.03	0.55	1.88	4.43
		PM2.5	0.11	0.22	0.16	0.01	0.14	0.47	1.11

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 Compost	PM10	62.86	122.61	86.80	4.71	67.08	228.07	572.13
		PM2.5	15.72	30.65	21.70	1.18	16.77	57.02	143.03
T7 Tractor	Ship Finished Compost	PM10	57.04	111.25	78.77	4.28	60.87	206.95	519.16
		PM2.5	14.26	27.81	19.69	1.07	15.22	51.74	129.79
T7 Tractor	Ship Raw Material to Biomass Conv.	PM10	8.17	15.94	11.28	0.61	8.72	29.65	74.37
		PM2.5	2.04	3.98	2.82	0.15	2.18	7.41	18.59
T7 Tractor	Ship Biochar	PM10	1.36	2.66	1.88	0.10	1.45	4.94	12.39
		PM2.5	0.34	0.66	0.47	0.03	0.36	1.24	3.10
Total	All	PM10	140.93	274.86	194.59	10.57	169.17	575.19	1365.32
		PM2.5	35.23	68.71	48.65	2.64	42.29	143.80	341.33

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 Compost	1.8839	0.1884
T7 Tractor	Ship Finished Compost	1.7838	0.1784
T7 Tractor	Ship Raw Material to Biomass Conv.	1.8839	0.1884
T7 Tractor	Ship Biochar	1.8839	0.1884

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 Compost	23.50	11.50	17.50	312	0	2	33,696	0.85	0	0
T7 Tractor	Ship Finished Compost	19.50	11.50	15.50	312	49	2	30,576	0.85	0	0
T7 Tractor	Ship Raw Material to Biomass Conv.	23.50	11.50	17.50	365	6	2	4,380	0.85	0	0
T7 Tractor	Ship Biochar	23.50	11.50	17.50	365	1	2	730	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 Compost	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T7 Tractor	Ship Finished Compost	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T7 Tractor	Ship Raw Material to Biomass Conv.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T7 Tractor	Ship Biochar	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

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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	9.00	2,808	0.44	0.21	3.82	0.01	0.01	0.01
1	Excavator	Caterpillar 326	201	0.38	9.00	2,808	0.45	0.21	3.94	0.01	0.02	0.02
5	Loader	Caterpillar, 962K	250	0.37	9.00	2,808	2.75	1.28	23.86	0.04	0.09	0.09
1	Water Truck	International, 7400 6x4	350	0.38	9.00	2,808	0.79	0.37	6.86	0.01	0.03	0.03
1	Sweeper Truck	Freightliner M2	240	0.46	9.00	2,808	0.66	0.31	5.70	0.01	0.02	0.02
Total Emissions from offroad equipment (lb/day)							5.27	2.46	45.70	0.09	0.18	0.18

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	9.00	2,808	137.43	64.13	1,191.05	2.25	4.58	4.58
1	Excavator	Caterpillar 326	201	0.38	9.00	2,808	141.85	66.20	1,229.35	2.32	4.73	4.73
5	Loader	Caterpillar, 962K	250	0.37	9.00	2,808	858.93	400.83	7,444.05	14.03	28.63	28.63
1	Water Truck	International, 7400 6x4	350	0.38	9.00	2,808	247.00	115.27	2,140.67	4.04	8.23	8.23
1	Sweeper Truck	Freightliner M2	240	0.46	9.00	2,808	205.03	95.68	1,776.91	3.35	6.83	6.83
Total Emissions from offroad equipment (lb/yr)							1,645.12	767.72	14,257.73	26.88	54.84	54.84
Total Emissions from offroad equipment (TPY)							0.82	0.38	7.13	0.01	0.03	0.03

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	10,617	108	4	1	109
1	Excavator	Caterpillar 326	4f	201	0.3602	0.38	10,959	112	4	1	112
5	Loader	Caterpillar, 962K	4f	250	0.3602	0.37	66,357	678	27	5	680
1	Water Truck	International, 7400 6x4	4f	350	0.3602	0.38	19,082	195	8	2	195
1	Sweeper Truck	Freightliner M2	4f	240	0.3602	0.46	15,840	162	6	1	162
Total GHG Exhaust Emissions from Equipment			----	----	----	----	127,095	1,298	52	10	1,302

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	9.0	2,808	0.3	2.7	842
1	Excavator	Caterpillar 326	28.6	28.6	28.6	9.0	2,808	0.3	2.7	842
5	Loader	Caterpillar, 962K	22.5	22.5	22.5	9.0	2,808	0.3	13.5	4,212
1	Water Truck	International, 7400 6x4	31.5	11.5	21.5	9.0	2,808	3.0	27.0	8,424
1	Sweeper Truck	Freightliner M2	16.5	16.5	16.5	9.0	2,808	3.0	27.0	8,424

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	3.56	0.36	0.49	0.05	1110	111	154	15
1	Excavator	Caterpillar 326	6.34	0.63	0.88	0.09	1978	198	274	27
5	Loader	Caterpillar, 962K	28.49	2.85	3.95	0.39	8890	889	1232	123
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)			46.66	4.67	6.47	0.65	14557	1456	2018	202
Total Dust from Equip. On Unpaved Areas (Ton/Year)			---	---	---	---	7.3	0.7	1.0	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.

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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	38.62	0.65	5.59	0.21	2.48	1.23
4. Onroad Vehicle Paved Road Dust	---	---	---	---	4.43	1.11
5. Onroad Vehicle Unpaved Road Dust	---	---	---	---	0.00	0.00
6. Offroad Equipment Exhaust	5.27	2.46	45.70	0.09	0.18	0.18
7. Offroad Equipment Unpaved Dust	---	---	---	---	6.47	0.65
Total	43.89	3.11	51.29	0.29	13.56	3.16

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	12048	203	1745	64	775	382
4. Onroad Vehicle Paved Road Dust	---	---	---	---	1365	341
5. Onroad Vehicle Unpaved Road Dust	---	---	---	---	0	0
6. Offroad Equipment Exhaust	1645	768	14258	27	55	55
7. Offroad Equipment Unpaved Dust	---	---	---	---	2018	202
Total	13693	971	16003	91	4212	980
Total (TPY)	6.85	0.49	8.00	0.05	2.11	0.49

Table 8c: Summary of Annual GHG Emissions

Activity	CO2 (MT/yr)	CH4 (MT/yr)	N2O (MT/yr)	CO2e (MT/Yr)
3. Onroad Vehicle Exhaust	3077	0.0	0.5	3219
4. Onroad Vehicle Paved Road Dust	---	---	---	---
5. Onroad Vehicle Unpaved Road Dust	---	---	---	---
6. Offroad Equipment Exhaust	1298	52	10	1302
7. Offroad Equipment Unpaved Dust	---	---	---	---
Total	**4375**	**52**	**11**	**4521**

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 Exhaust[1,2]
LHD2	0.000	0.000	0.001	0.000	0.020	0.006
T7 Tractor	0.060	0.018	0.539	0.158	3.676	1.081
Fuel Truck	0.001	0.000	0.006	0.000	1.830	0
Tractors	0.002	0.000	0.015	0.000	4.581	0
Excavator	0.002	0.000	0.015	0.000	4.728	0
Loader	0.010	0.000	0.092	0.000	28.631	0
Water Truck	0.003	0.000	0.026	0.000	8.233	0
Sweeper Truck	0.002	0.000	0.022	0.000	6.834	0
Total PM10 = DPM	0.079	0.018	0.715	0.159	58.533	1.087

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-Butanor	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	0.2091	0.0615	1.88	0.55	575.19	169.17
		0.27056				744.37

Table 10b: TAC from Paved Road Dust

TAC	Wt. Fraction[2]	TAC Emissions	
		lb/hr	lb/yr
Arsenic	0.000013	3.52E-06	9.68E-03
Cadmium	0.000003	8.12E-07	2.23E-03
Chromium[3]	0.00000085	2.30E-07	6.33E-04
Cobalt	0.000023	6.22E-06	1.71E-02
Copper	0.000148	4.00E-05	1.10E-01
Lead	0.000124	3.35E-05	9.23E-02
Manganese	0.0008	2.16E-04	5.95E-01
Nickel	0.000012	3.25E-06	8.93E-03
Mercury	0.000009	2.44E-06	6.70E-03
Selenium	0.000002	5.41E-07	1.49E-03
Vanadium (Fume Or Dust)	0.000071	1.92E-05	5.28E-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.

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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	0.72	6.47	2017.55
Total PM10	0.72	6.47	2017.55

Table 11b: TAC from Vehicle/Equipment Travel on Unpaved Surfaces

TAC	Concentration[1,2] (lb/lb Dust)	TAC Emissions	
		(lb/hr)	(lb/yr)
Arsenic	6.20E-06	4.45E-06	1.25E-02
Cadmium	2.00E-06	1.44E-06	4.04E-03
Chromium	2.45E-06	1.76E-06	4.94E-03
Cobalt	8.80E-06	6.32E-06	1.78E-02
Copper	6.90E-05	4.96E-05	1.39E-01
Lead	2.00E-04	1.44E-04	4.04E-01
Manganese	4.40E-04	3.16E-04	8.88E-01
Nickel	9.50E-05	6.83E-05	1.92E-01
Mercury	1.00E-06	7.19E-07	2.02E-03
Selenium	1.00E-06	7.19E-07	2.02E-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

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Appendix D: Compost Facility Emissions

Air Quality and GHG Technical Report

Prepared for:

Tulare County Resource Management Agency
Solid Waste Department
Visalia Landfill
8614 Avenue 328
Visalia, CA 93291

October 2023

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Attachments

ATTACHMENT D-1 – EMISSION CALCULATION WORKSHEETS

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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

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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 maximum daily throughput of the compost facility is 1,000 TPD. However, composting operations emit volatile organic compounds (VOC) over the entire duration of processing, lasting 6 weeks or more. Thus, average daily throughput is a better representation of the process than maximum daily throughput is, from the viewpoint of VOC emissions. Maximum daily emission

[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.

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would impact particulate emission rates for the initial material handling operations (grinding and material transfer) but average daily throughput would better represent subsequent process steps. To simplify the analysis, average daily throughput is used for all daily emission calculations. Daily and annual process throughput rates are shown in Table 1-1.

Table 1-1: Compost Facility Process Throughput

Processing Step	Annual Throughput (TPY)	Average Daily Throughput (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

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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 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

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 lb-TSP/ton x 0.60 lb-PM_{10}/lb-TSP = 0.0144 lb/ton

$E_{PM2.5}$ = 0.024 lb-TSP/ton x 0.60 lb-PM_{10}/lb-TSP x 0.15 lb-PM_{10}/lb-$PM_{2.5}$

= 0.002 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.

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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)	Average 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)

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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)	Average 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).

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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

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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

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3.0 COMPOSTING OPERATIONS

The proposed 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.

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 a 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 80%. Feedstock storage is assumed to last no more than 2 days. VOC emissions were based on the throughput information provided in Table 3-2.

Table 3-2: Composting Throughput

Source	Annual Throughput (TPY)	Average Daily Throughput (TPD)
Feedstock Storage	160,000	513
Composting	200,000	641
Curing	160,000	513
Storage	120,000	385

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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	32,320	51.79	2.16
Composting	44,000	141.03	5.88
Curing	3,520	11.28	0.47
Finished Compost Storage	2,400	7.69	0.32
Total	82,240	211.79	8.82
Total (TPY)	41.12	---	---

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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	---	211.79	---	---	---	---
Grind and Screen	---	---	---	---	3.69	0.55
Material Handling	---	---	---	---	1.53	0.23
Wind Erosion	---	---	---	---	0.34	0.14
Total	0.00	211.79	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	---	82,240.00	---	---	---	---
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	82,240.00	0.00	0.00	1,753.11	294.80
Total (TPY)	0.00	41.12	0.00	0.00	0.88	0.15

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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.

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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	160,000	513	2,035	0.27
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

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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
2.16	32320.00	5.88	44,000	0.47	3,520	0.32	2,400	8.82	82,240

Table 5-6: Composting Organic TAC Emissions

TAC	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
Isopropyl alcohol	0.91	13674.59	2.49	18616.40	0.20	1489.31	0.14	1015.44	3.73	34795.74
Methanol	0.28	4133.73	0.75	5627.60	0.06	450.21	0.04	306.96	1.13	10518.50
Naphthalene	0.01	161.60	0.03	220.00	0.00	17.60	0.00	12.00	0.04	411.20
Propene	0.00	71.10	0.01	96.80	0.00	7.74	0.00	5.28	0.02	180.93
Acetaldehyde	0.00	45.25	0.01	61.60	0.00	4.93	0.00	3.36	0.01	115.14

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ATTACHMENT D-1 – EMISSION CALCULATION WORKSHEETS

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Visalia Landfill
Compost Facility
Emission Calculations

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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
VOC	Feedstock Storage	0.101 lb/wet ton/day	1
VOC	Composting	0.22 lb/ton	2
VOC	Curing (=10% of compost factor)	0.022 lb/ton	3
VOC	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 VOC 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	160,000	513	0.101 lb/wet ton/day	32,320	51.79	2.16
Composting	200,000	641	0.22 lb/ton	44,000	141.03	5.88
Curing	160,000	513	0.022 lb/ton	3,520	11.28	0.47
Finished Compost Storage	120,000	385	0.02 lb/ton	2,400	7.69	0.32
			Total (lb/yr)	82,240	211.79	8.82
			Total (TPY)	41.12		

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	80%		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	---	211.79	---	---	---	---
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	211.79	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	---	82240.00	---	---	---	---
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	82240.00	0.00	0.00	1753.11	294.80
Total (TPY)	0.00	41.12	0.00	0.00	0.88	0.15

Note:

1. CO_2 emissions from composting are not included in the total because the CO_2 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)	(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	160,000	513	0.0127	2,035	0.27
Finished Compost Storage	120,000	385	0.00038	46	0.01
				4,625	0.62

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)
2.16	32320.00	5.88	44,000	0.47	3,520	0.32	2,400	8.82	82,240

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	0.91	13674.59	2.49	18616.40	0.20	1489.31	0.14	1015.44	3.73	34795.74
Methanol	12.79	0.28	4133.73	0.75	5627.60	0.06	450.21	0.04	306.96	1.13	10518.50
Naphthalene	0.50	0.01	161.60	0.03	220.00	0.00	17.60	0.00	12.00	0.04	411.20
Propene	0.22	0.00	71.10	0.01	96.80	0.00	7.74	0.00	5.28	0.02	180.93
Acetylaldehyde	0.14	0.00	45.25	0.01	61.60	0.00	4.93	0.00	3.36	0.01	115.14
			18086.27		24622.40		1969.79		1343.04		46021.50
			9.04		12.31		0.98		0.67		23.01

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 – BIOMASS CONVERSION FACILITY EMISSIONS

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Appendix E: Biomass Conversion Facility Emissions

Air Quality and GHG Technical Report

Prepared for:

Tulare County Resource Management Agency
Solid Waste Department
Visalia Landfill
8614 Avenue 328
Visalia, CA 93291

October 2023

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Attachments

ATTACHMENT E-1 – EMISSION CALCULATION WORKSHEETS

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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

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TPY	Tons per Year
TSP	Total Suspended Particulate
VOC	Volatile Organic Compound
yr	Year

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Appendix E: Biomass Conversion Facility Emissions

1.0 INTRODUCTION

1.1 Overview

Emissions estimates have been prepared for the biomass conversion 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 biomass conversion 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: Biomass conversion 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

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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.

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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 biomass 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).

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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

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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.

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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

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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

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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):

$$PM_{10}\ (lb/yr) = Circ\ rate \times (TDS/10^6) \times (DF/100) \times D \times min/hr \times Op\ Hr \qquad (Eq.\ 3\text{-}1)$$

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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

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4.0 SUMMARY OF CRITERIA POLLUTANT AND GHG EMISSIONS

The predicted emissions from the proposed biomass conversion facility are summarized in Tables 4-1, 4-2, and 4-3.

Table 4-1: Summary of Proposed Daily Biomass Conversion 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 Biomass Conversion 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	---	5,400	---	---	---	---
Engines (2) Normal Ops	7,639.26	7,380.93	51,666.48	1,044.61	1274.72	1,274.72
Flare	323.00	299.25	1,472.50	30.37	37.06	37.06
Cooling Tower	---	3,416.40	---	---	41.47	41.47
Total (lb/yr)	7,962.26	16,496.58	53,138.98	1,074.98	1,768.91	1,411.68
Total (TPY)	3.98	8.25	26.57	0.54	0.88	0.71

Table 4-3: Summary of Proposed Annual Biomass Conversion 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	---	5,400.00	---	---	---	---
Engines (2) Commission	9,665.59	8,018.46	84,421.76	1,044.61	1,274.72	1,274.72
Flare	323.00	299.25	1472.50	30.37	37.06	37.06
Cooling Tower	---	3,416.40	---	---	41.47	41.47
Total (lb/yr)	9,988.59	17,134.11	85,894.26	1,074.98	1,768.91	1,411.68
Total (TPY)	4.99	8.57	42.95	0.54	0.88	0.71

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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

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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

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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

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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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SJVAPCD 2015. San Joaquin Valley Air Pollution Control District, "PM10 based Emissions from Operations generating Dust from Co-composting", September, accessed: https://www.valleyair.org/busind/pto/emission_factors/emission_factors_idx.htm.

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ATTACHMENT E-1 – EMISSION CALCULATION WORKSHEETS

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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 VOC Emissions

Table 4a: Emission Factors

Process Operation	Value (lb/ton)	
	PM10[1]	VOC[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	VOC	PM10	VOC	PM10	VOC
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
VOC	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

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
VOC	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
VOC	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
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

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
VOC	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

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 VOC Emissions

Parameter	Value
Emission Factor (lb/hr	0.39
VOC Emissions (lbs/yr)	3416.4

Table 8c. Cooling Tower VOC Emissions

Pollutant	lb/hr	lb/day	lb/yr
PM10	4.73E-03	0.11	41.47
VOC	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)	VOC (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)	VOC (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)	VOC (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.

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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)	(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

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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. componer	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

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. componer	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

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Appendix F

Air Quality Impact Analysis and Health Risk Assessment Report

Prepared for:

Tulare County Resource Management Agency
Solid Waste Department
Visalia Landfill
8614 Avenue 328
Visalia, CA 93291

November 2023

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Attachments

ATTACHMENT 1 – MODEL INPUTS

ATTACHMENT 2 – PRIORITIZATION SCORE CALCULATIONS

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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

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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

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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 Disposal Site 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) biomass conversion facility at the Visalia Disposal Site. 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.

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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 maximum 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	36.0	43.2	33.6	0.06	6.81	4.12
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	2.46	1.83	3.48	0.01	0.38	0.17
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 biomass conversion facility will not operate concurrently, the emissions reflect the higher of either the engines or the flare. Although the engines and flare will not operate continuously, they were conservatively modeled as such.

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.

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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							
Biomass 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	---	211.79	---	---	---	---
	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	284.8	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	38.62	0.65	5.59	0.21	2.48	1.23
	Paved Road Dust – On-Road	---	---	---	---	4.43	1.11
	Equipment Exhaust – Off-Road	5.27	2.46	45.70	0.09	0.18	0.18
	Unpaved Road Dust – Off-Road	---	---	---	---	6.47	0.65
Total Non-Permitted Activities Emissions		43.89	3.11	51.29	0.29	13.56	3.16
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).

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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							
Biomass 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	---	41.12	---	---	---	---
	Grind and Screen	---	---	---	---	0.58	0.09
	Material Handling	---	---	---	---	0.24	0.04
	Wind Erosion	---	---	---	---	0.06	0.02
Total Permitted Activities Emissions		3.98	9[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	6.02	0.10	0.87	0.03	0.39	0.19
	Paved Road Dust – On-Road	---	---	---	---	0.68	0.17
	Equipment Exhaust – Off-Road	0.82	0.38	7.13	0.01	0.03	0.03
	Unpaved Road Dust – Off-Road	---	---	---	---	1.01	0.10
Total Non-Permitted Activities Emissions		6.85	0.49	8.00	0.05	2.11	0.49
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 40.5 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.

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Table 2-5: DPM Emissions – Entire Construction Period

Source	Compost Facility Phase 1 (lb)	Compost Facility Phase 2 (lb)	Compost Facility Phase 3 (lb)	Biomass Facility (lb)	Total Construction Emissions (lb)	Average Annual Construction Emissions (lb/yr)
Construction Equipment	260	80	80	120	540	180

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).

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Table 2-6: Operational TAC Emissions

Pollutant	CAS	Composting		Biomass 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	–	–	–	1.04E-01	–	–	–	–	–	**1.04E-01**
1,1,2-Trichloroethane	79005	–	–	–	8.23E-02	–	–	–	–	–	**8.23E-02**
1,1-Dichloroethane	75343	–	–	–	6.10E-02	–	–	–	–	–	**6.10E-02**
1,2,4-Trimethylbenzene	95636	–	–	–	3.70E-02	–	–	6.07E-01	–	–	**6.44E-01**
1,3-Butadiene	106990	–	–	–	6.91E-01	–	–	3.34E-01	–	–	**1.03E+00**
2,2,4-Trimethylpentane	540841	–	–	–	6.47E-01	–	–	–	–	–	**6.47E-01**
2-Methyl naphthalene	91576	–	–	–	8.59E-02	–	–	–	–	–	**8.59E-02**
Acenaphthene	83329	–	–	–	3.23E-03	–	–	–	–	–	**3.23E-03**
Acenaphthylene	208968	–	–	–	1.43E-02	–	–	–	–	–	**1.43E-02**
Acetaldehyde	75070	1.15E+02	–	–	2.17E+01	–	–	1.52E-01	–	–	**1.37E+02**
Acrolein	107028	–	–	–	1.33E+01	–	–	8.51E-02	–	–	**1.33E+01**
Ammonia	7664417	4.62E+03	–	–	–	6.48E-03	–	–	–	–	**4.62E+03**
Arsenic	7440382	–	1.09E-02	–	–	–	–	–	9.68E-03	1.25E-02	**3.31E-02**
Benzene	71432	–	–	–	1.14E+00	2.32E-03	–	1.62E+00	–	–	**2.76E+00**
Benzo[b]fluoranthene	205992	–	–	–	4.29E-04	–	–	–	–	–	**4.29E-04**
Benzo[e]pyrene	192972	–	–	–	1.07E-03	–	–	–	–	–	**1.07E-03**
Benzo[g,h,i]perylene	191242	–	–	–	1.07E-03	–	–	–	–	–	**1.07E-03**
Biphenyl	92524	–	–	–	5.49E-01	–	–	–	–	–	**5.49E-01**
Cadmium	7440439	–	3.51E-03	–	–	–	–	–	2.23E-03	4.04E-03	**9.77E-03**
Carbon tetrachloride	56235	–	–	–	9.50E-02	–	–	–	–	–	**9.50E-02**

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Pollutant	CAS	Composting		Biomass 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	–	–	–	7.87E-02	5.36E-04	–	–	–	–	**7.93E-02**
Chloroform	67663	–	–	–	7.38E-02	–	–	–	–	–	**7.38E-02**
Chromium, hexavalent	18540299	–	4.30E-03	–	–	–	–	–	6.33E-04	4.94E-03	**9.87E-03**
Chrysene	218019	–	–	–	1.79E-03	–	–	–	–	–	**1.79E-03**
Cobalt	7440484	–	1.54E-02	–	–	–	–	–	1.71E-02	1.78E-02	**5.03E-02**
Copper	7440508	–	1.21E-01	–	–	–	–	3.40E-03	1.10E-01	1.39E-01	**3.74E-01**
DPM	9901	–	–	–	–	–	5.96E+01	–	–	–	**5.96E+01**
Ethyl benzene	100414	–	–	–	1.03E-01	4.55E-02	–	6.62E-01	–	–	**8.10E-01**
Ethylene dibromide {EDB}	106934	–	–	–	1.14E-01	–	–	–	–	–	**1.14E-01**
Ethylene dichloride {EDC}	107062	–	–	–	6.10E-02	–	–	–	–	–	**6.10E-02**
Fluoranthene	206440	–	–	–	2.87E-03	–	–	–	–	–	**2.87E-03**
Fluorene	86737	–	–	–	1.47E-02	–	–	–	–	–	**1.47E-02**
Formaldehyde	50000	–	–	8.46E+02	1.37E+02	2.54E+00	–	1.04E+00	–	–	**9.87E+02**
Hexane	110543	–	–	–	2.87E+00	–	–	9.71E-01	–	–	**3.84E+00**
Hydrogen Sulfide	7783064	–	–	–	–	2.04E+00	–	–	–	–	**2.04E+00**
Lead	7439921	–	3.51E-01	–	–	–	–	–	9.23E-02	4.04E-01	**8.46E-01**
Manganese	7439965	–	7.71E-01	–	–	–	–	3.40E-03	5.95E-01	8.88E-01	**2.26E+00**
Mercury	7439976	–	1.75E-03	–	–	–	–	–	8.93E-03	1.92E-01	**2.02E-01**
Methanol	67561	1.05E+04	–	4.86E+02	6.47E+00	–	–	2.50E-01	–	–	**1.10+04**
Methyl Chloroform	71556	–	–	–	–	7.30E-03	–	–	–	–	**7.30E-03**

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Pollutant	CAS	Composting		Biomass 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	–	–	–	5.18E-02	1.51E-01	–	–	–	–	**2.03E-01**
m-Xylene	108383	–	–	–	–	–	–	2.24E+00	–	–	**2.24E+00**
Naphthalene	91203	4.11E+02	–	–	1.93E-01	–	–	3.04E-02	–	–	**4.11E+02**
Nickel	7440020	–	1.67E-01	–	–	–	–	3.40E-03	6.70E-03	2.02E-03	**1.79E-01**
o-Xylene	95476	–	–	–	–	–	–	7.77E-01	–	–	**7.77E-01**
Perchloroethylene	127184	–	–	–	–	4.23E-03	–	–	–	–	**4.23E-03**
Phenanthrene	85018	–	–	–	2.70E-02	–	–	–	–	–	**2.70E-02**
Phenol	108952	–	–	–	6.21E-02	–	–	–	–	–	**6.21E-02**
Propene	115071	1.81E+02	–	–	–	–	–	–	–	–	**1.81E+02**
Pyrene	129000	–	–	–	3.52E-03	–	–	–	–	–	**3.52E-03**
Selenium	7782492	–	1.75E-03	–	–	–	–	–	1.49E-03	2.02E-03	**5.26E-03**
Styrene	100425	–	–	–	6.10E-02	–	–	7.29E-02	–	–	**1.34E-01**
Toluene	108883	–	–	–	1.06E+00	1.67E-02	–	3.61E+00	–	–	**4.68E+00**
Vanadium (fume or dust)	7440622	–	–	–	–	–	–	–	5.28E-02	–	**5.28E-02**
Vinyl Chloride	75014	–	–	–	3.86E-02	2.30E-03	–	–	–	–	**4.09E-02**
Vinylidene Chloride	75354	–	–	–	–	5.36E-04	–	–	–	–	**5.36E-04**
Xylenes	1330207	–	–	–	4.77E-01	9.70E-02	–	–	–	–	**5.74E-01**
Total TACs (lb/yr)											**1.41E+04**

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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.

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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.

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Table 3-1: Background Concentrations

Pollut-ant	Averag-ing Time	Standard	Monitoring Station	Ambient Background Data (µg/m³)				AAQS	Exceeds Standard?	Background Concentration Notes
				2019	2020	2021	Highest Value			
NO_2	1-Hour	Federal	Visalia-N Church Street	105.2	92.0	75.4	90.9	188	No	The design value (=3 year average of 98th percentile of 1-hr daily max).
		California	Visalia-N Church Street	133.9	101.4	95.7	133.9	339	No	Highest of most recent 3 years.
	Annual	Federal	Visalia-N Church Street	19.1	17.2	15.3	19.1	100	No	Highest of most recent 3 years.
		California	Visalia-N Church Street	19.1	19.1	17.2	19.1	57	No	Highest of most recent 3 years.
CO	1-Hour	Federal	Fresno - Garland	11,693.8	5,856.2	3,039.9	11,693.8	40,000	No	Highest of most recent 3 years.
		California	Fresno - Garland	11,693.8	5,856.2	3,039.9	11,693.8	23,000	No	Highest of most recent 3 years.
	8-Hour	Federal	Fresno - Garland	2,329.5	3,028.3	2,562.4	3,028.3	10,000	No	Highest of most recent 3 years.
		California	Fresno - Garland	2,329.5	3,028.3	2,562.4	3,028.3	10,000	No	Highest of most recent 3 years.
SO_2	1-Hour	Federal	Fresno - Garland	14.6	13.8	15.2	14.6	196	No	The design value (=3 year average of 99th percentile of 1-hr daily max).
		California	Fresno - Garland	23.7	43.1	20.0	43.1	655	No	Highest of most recent 3 years.
	3-Hour	Federal secondary	Fresno - Garland	12.8	13.6	12.0	13.6	1,300	No	Highest of most recent 3 years.
		California	Fresno - Garland	--	--	--	--	No Standard	NA	No standard exists.

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Pollut-ant	Averag-ing Time	Standard	Monitoring Station	Ambient Background Data (µg/m³)				AAQS	Exceeds Standard?	Background Concentration Notes
				2019	2020	2021	Highest Value			
	24-Hour	Federal	Fresno - Garland	--	--	--	--	No Standard	NA	Rescinded.
		California	Fresno - Garland	12.8	13.6	12.0	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	411.1	317.4	299.9	411.1	150	Yes	Highest of most recent 3 years.
		California	Visalia-N Church Street	418.5	305.7	302.1	418.5	50	Yes	Highest of most recent 3 years.
	Annual	Federal	Visalia-N Church Street	46.3	60.5	--	60.5	20	Yes	Highest of most recent 3 years.
		California	Visalia-N Church Street	47.2	127.1	129.2	129.2	35	Yes	Highest of most recent 3 years.
$PM_{2.5}$	24-Hour	Federal	Visalia-N Church Street	12.9	19.6	20.7	20.7	12	Yes	Highest of most recent 3 years.
		California	Visalia-N Church Street	12.3	--	--	12.3	12	Yes	Highest of most recent 3 years.
	Annual	Federal	Visalia-N Church Street	105.2	92.0	75.4	90.9	188	No	The design value (=3 year average of 98th percentile of 1-hr daily max).
		California	Visalia-N Church Street	133.9	101.4	95.7	133.9	339	No	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).

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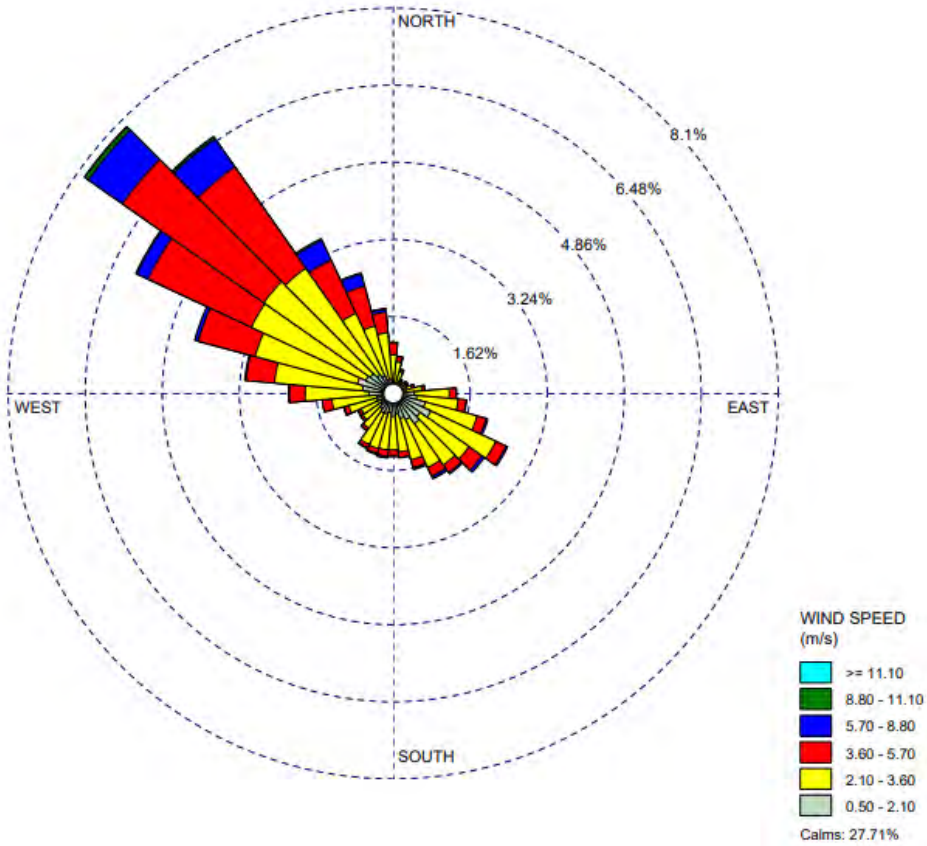
Figure 3-1: Visalia Municipal Airport Wind Rose 2007-2010



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 biomass 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:

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- 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.

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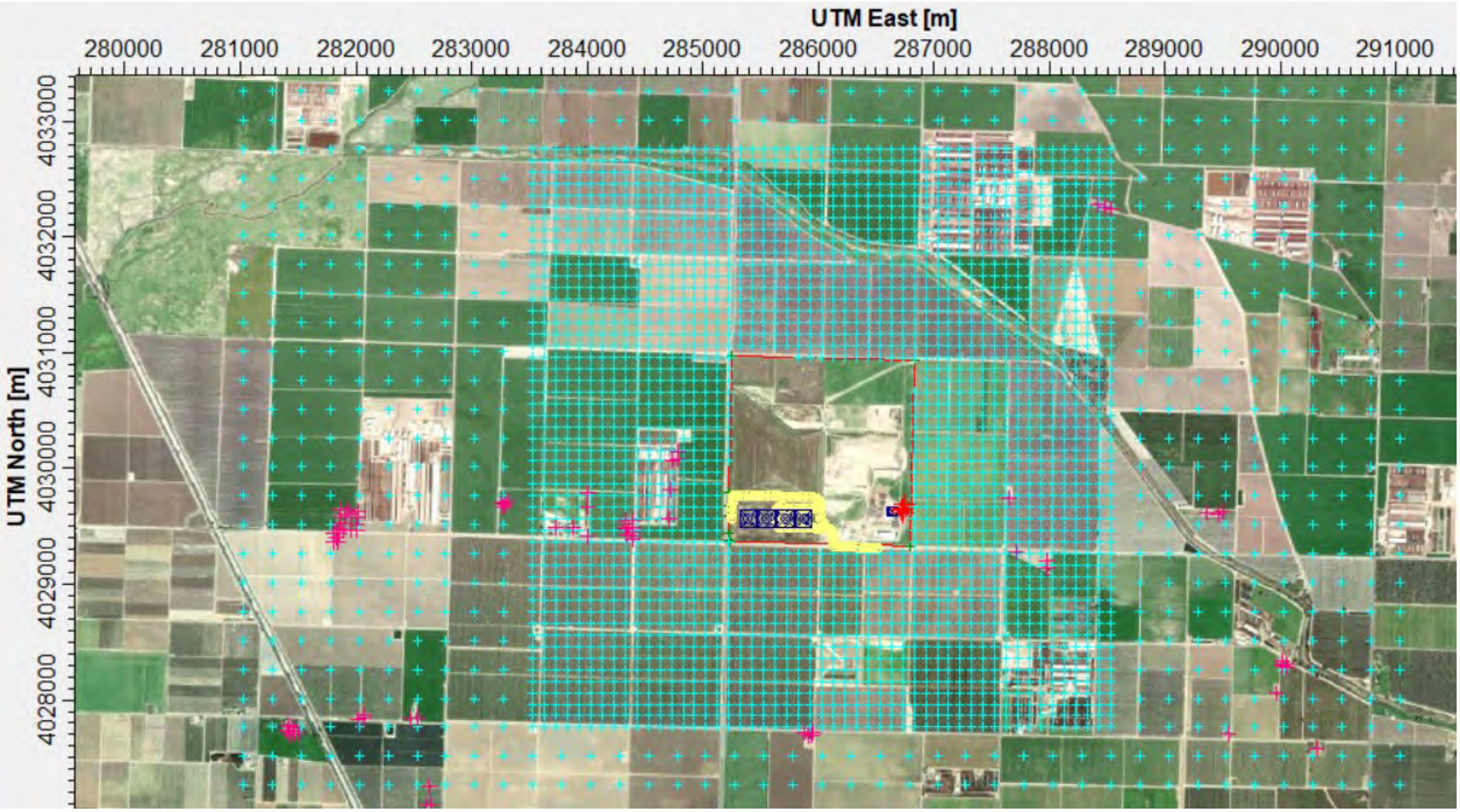
Figure 3-2: Fenceline and Receptor Locations



Green Cross: Fenceline Receptor

Blue Cross: Uniform Receptor Grid

Pink Cross: Discrete Receptor (Residence, Sensitive, Worker)

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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 biomass conversion 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.

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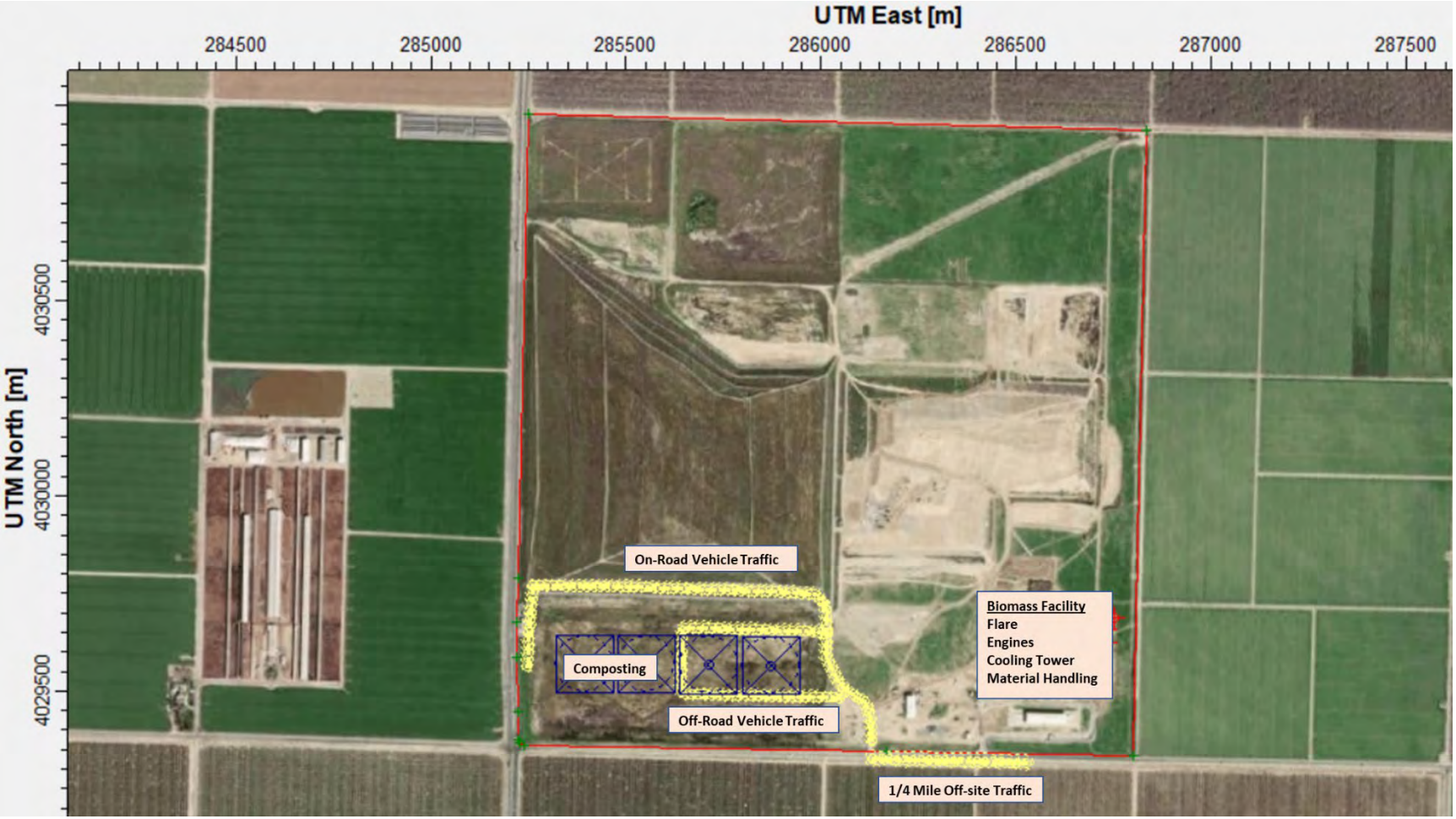
Figure 3-3: Operational Source and Fenceline Locations



Red Line: Facility Boundary

Red Cross: Emission Point Source

Blue Circle Inside Square: Emission Volume Source

Yellow: Emission Line Volume Source

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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	90.9	123.3	188	No
		California	34.4	133.9	168.4	339	No
	Annual	Federal	0.9	19.1	20.0	100	No
		California	0.9	19.1	20.0	57	No
CO	1-Hour	Federal	521.3	11,693.8	12,215	40,000	No
		California	521.3	11,693.8	12,215	23,000	No
	8-Hour	Federal	395.3	3,028.3	3,424	10,000	No
		California	395.3	3,028.3	3,424	10,000	No
SO_2	1-Hour	Federal	0.9	14.6	15.4	196	No
		California	0.9	43.1	44.0	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	60.5	-	20	
$PM_{2.5}$	24-Hour	Federal	See SIL Analysis	129.2	-	35	
	Annual	Federal	See SIL Analysis	20.7	-	12	
		California	See SIL Analysis	12.3	-	12	

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Table 3-3: 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	0.50	5.0	No
	Annual	0.13	1.0	No
$PM_{2.5}$	24-Hour	0.50	1.2	No
	Annual	0.13	0.2	No
Fugitive PM_{10}	24-Hour	7.74	10.4	No
	Annual	1.26	2.1	No
Fugitive $PM_{2.5}$	24-Hour	1.25	2.5	No
	Annual	0.23	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.

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. Pertinent factors include:

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- 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.

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Table 3-4: Prioritization Scores at the Nearest Receptors for Construction

Receptor	Distance to Receptor= R (meters)	Acute	Chronic	Cancer
Resident/Business	500<=R<1,000	--	0.0068	4.57

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	0.065	3.54

Note: Resident and Business within the same receptor proximity.

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ATTACHMENT 1 – MODEL INPUTS

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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

1. Separate volume sources (separated 2W surface based)	feet	AERMOD View input (m)	
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

1. Separate volume sources (separated 2W surface based)	feet	AERMOD View input (m)	
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

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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.

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Background Ambient Air Quality Data

Pollutant	Averaging Time	Standard	Monitoring Station Location	Ambient Background Data (µg/m^3)				Ambient Air Quality Standard	Exceeds Standard?	Background Concentration Notes
				2019	2020	2021	Summary			
NO_2	1-Hour	Federal	Visalia-N Church Street	105.2	92.0	75.4	90.9	188	No	The design value (=3 year average of 98th percentile of 1-hr daily max).
		California	Visalia-N Church Street	133.9	101.4	95.7	133.9	339	No	Highest of most recent 3 years.
	Annual	Federal	Visalia-N Church Street	19.1	17.2	15.3	19.1	100	No	Highest of most recent 3 years.
		California	Visalia-N Church Street	19.1	19.1	17.2	19.1	57	No	Highest of most recent 3 years.
CO	1-Hour	Federal	Fresno - Garland	11,693.8	5,856.2	3,039.9	11,693.8	40,000	No	Highest of most recent 3 years.
		California	Fresno - Garland	11,693.8	5,856.2	3,039.9	11,693.8	23,000	No	Highest of most recent 3 years.
	8-Hour	Federal	Fresno - Garland	2,329.5	3,028.3	2,562.4	3,028.3	10,000	No	Highest of most recent 3 years.
		California	Fresno - Garland	2,329.5	3,028.3	2,562.4	3,028.3	10,000	No	Highest of most recent 3 years.
SO_2	1-Hour	Federal	Fresno - Garland	14.6	13.8	15.2	14.6	196	No	The design value (=3 year average of 99th percentile of 1-hr daily max).
		California	Fresno - Garland	23.7	43.1	20.0	43.1	655	No	Highest of most recent 3 years.
	3-Hour	Federal secondary	Fresno - Garland	12.8	13.6	12.0	13.6	1,300	No	Highest of most recent 3 years.
		California	Fresno - Garland	--	--	--	--	No Standard	NA	No standard exists.
	24-Hour	Federal	Fresno - Garland	--	--	--	--	No Standard	NA	Rescinded.
		California	Fresno - Garland	12.8	13.6	12.0	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	411.1	317.4	299.9	411.1	150	Yes	Highest of most recent 3 years.
		California	Visalia-N Church Street	418.5	305.7	302.1	418.5	50	Yes	Highest of most recent 3 years.
	Annual	California	Visalia-N Church Street	46.3	60.5	--	60.5	20	Yes	Highest of most recent 3 years.
$PM_{2.5}$	24-Hour	Federal	Visalia-N Church Street	47.2	127.1	129.2	129.2	35	Yes	Highest of most recent 3 years.
	Annual	Federal	Visalia-N Church Street	12.9	19.6	20.7	20.7	12	Yes	Highest of most recent 3 years.
		California	Visalia-N Church Street	12.3	--	--	12.3	12	Yes	Highest of most recent 3 years.

Data Sources:

Data from CARB iADAM: Air Quality Data Statistics (https://arb.ca.gov/adam). CO and SO_2 data from EPA AirData.

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Visalia Compost Project
Ambient Air Quality Analysis Modeling Results

Pollutant	Averaging Time	Standard	Modeled Concentration ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Modeled + Background Concentration ($\mu g/m^3$)	Ambient Air Quality Standard ($\mu g/m^3$)	Exceed Standard?
NO_2	1-Hour	Federal[1]	32.4	90.9	123.3	188	No
		California[2]	34.4	133.9	168.4	339	No
	Annual	Federal	0.9	19.1	20.0	100	No
		California	0.9	19.1	20.0	57	No
CO	1-Hour	Federal	521.3	11,693.8	12,215	40,000	No
		California	521.3	11,693.8	12,215	23,000	No
	8-Hour	Federal	395.3	3,028.3	3,424	10,000	No
		California	395.3	3,028.3	3,424	10,000	No
SO_2	1-Hour	Federal	0.9	14.6	15.4	196	No
		California	0.9	43.1	44.0	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	60.5	-	20	
$PM_{2.5}$	24-Hour	Federal	See SIL Analysis	129.2	-	35	
	Annual	Federal	See SIL Analysis	20.7	-	12	
		California	See SIL Analysis	12.3	-	12	

Notes: 1. The modeled concentration presented is the design value (the model predicted 8th highest value).
2. The modeled concentration presented is the model predicted maximum hourly value assuming full conversion.
3. Modeled engines and flare concurrently for all pollutants and averaging periods.

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Visalia Compost Project
SIL Analysis

Scenario	Pollutant	Averaging Time	Modeled Concentration ($\mu g/m^3$)	Significant Impact Level (SIL) ($\mu g/m^3$)	Exceed Standard?
Operational	$PM_{2.5}$	24 - Hour	0.50	1.2	No
		Annual	0.13	0.2	No
Operational	Fugitive $PM_{2.5}$	24 - Hour	1.25	2.5	No
		Annual	0.23	0.6	No
Operational	PM_{10}	24 - Hour	0.50	5.0	No
		Annual	0.13	1.0	No
Operational	Fugitive PM_{10}	24 - Hour	7.74	10.4	No
		Annual	1.26	2.1	No

Notes: 1. Modeled engines and flare concurrently for all pollutants and averaging periods.

ATTACHMENT 2 – PRIORITIZATION SCORE CALCULATIONS

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Name: Construction

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	4.16E+02	6.16E-01	0.00E+00	4.16E+02	
100≤R<250 0.250	1.04E+02	1.54E-01	0.00E+00	1.04E+02	
250≤R<500 0.040	1.66E+01	2.47E-02	0.00E+00	1.66E+01	
500≤R<1000 0.011	4.57E+00	6.78E-03	0.00E+00	4.57E+00	
1000≤R<1500 0.003	1.25E+00	1.85E-03	0.00E+00	1.25E+00	
1500≤R<2000 0.002	8.32E-01	1.23E-03	0.00E+00	8.32E-01	
2000<R 0.001	4.16E-01	6.16E-04	0.00E+00	4.16E-01	

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**	180	0.00E+00	2.05E-02	4.16E+02	6.16E-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
				Totals	**4.16E+02**	**6.16E-01**	**0.00E+00**

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Total Prioritization Score

Receptor Proximity and Proximity Factors		Biomass Conversion				Compost			Mobile			TOTAL
		Max Score	Max Score	Max Score	Max Score	Max Score	Max Score	Max Score	Max Score	Max Score	Max Score	Total Max Score
0< R<100	1.000	1.57E+00	6.29E+01	1.67E+01	5.69E-01	3.96E-01	1.10E+02	6.63E+00	1.39E+02	2.09E+00	7.25E+00	3.47E+02
100≤R<250	0.250	3.93E-01	1.57E+01	4.17E+00	1.42E-01	9.90E-02	2.75E+01	1.66E+00	3.47E+01	5.21E-01	1.81E+00	8.67E+01
250≤R<500	0.040	6.29E-02	2.52E+00	6.68E-01	2.28E-02	1.58E-02	4.40E+00	2.65E-01	5.54E+00	8.34E-02	2.90E-01	1.39E+01
500≤R<1000	0.011	1.73E-02	6.92E-01	1.84E-01	6.26E-03	4.36E-03	1.21E+00	7.29E-02	1.52E+00	2.29E-02	7.98E-02	3.81E+00
1000≤R<1500	0.003	4.72E-03	1.89E-01	5.01E-02	1.71E-03	1.19E-03	3.30E-01	1.99E-02	4.16E-01	6.26E-03	2.18E-02	1.04E+00
1500≤R<2000	0.002	3.14E-03	1.26E-01	3.34E-02	1.14E-03	7.92E-04	2.20E-01	1.33E-02	2.77E-01	4.17E-03	1.45E-02	6.93E-01
2000<R	0.001	1.57E-03	6.29E-02	1.67E-02	5.69E-04	3.96E-04	1.10E-01	6.63E-03	1.39E-01	2.09E-03	7.25E-03	3.47E-01

Note, total risks incorporate both ICEs and flare. Conservative as both ICEs and flare are not run simultaneously.

Distance from nearest source to canopy of the nearby dairy farm is slightly > 500 m

	Cancer	Chronic	Acute
MH	1.73E-02	9.58E-04	1.03E-03
Dryer	4.30E-01	1.77E-02	6.92E-01
ICEs	1.84E-01	2.04E-02	2.97E-02
Flare	1.34E-03	9.19E-05	6.26E-03
NH3	0.00E+00	4.36E-03	3.18E-03
Organics	1.21E+00	1.02E-02	2.04E-02
Dust	7.29E-02	4.04E-03	4.98E-03
Diesel and Exhaust	1.52E+00	2.94E-03	7.87E-04
Paved Road Dust	2.29E-02	1.54E-03	5.98E-04
Unpaved Road Dust	7.98E-02	3.29E-03	2.31E-03
	3.54E+00	**6.55E-02**	**7.61E-01**

Name: Biomass Conversion - 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
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

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**
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: Biomass Conversion - 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.

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**
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
				Totals	**3.91E+01**	**1.61E+00**	**6.29E+01**

Name: Biomass Conversion - 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**	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	1.67E+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	

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: Biomass Conversion - 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**
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

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**
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	3.96E-01	2.90E-01	3.96E-01
100≤R<250 0.250	0.00E+00	9.90E-02	7.24E-02	9.90E-02
250≤R<500 0.040	0.00E+00	1.58E-02	1.16E-02	1.58E-02
500≤R<1000 0.011	0.00E+00	4.36E-03	3.18E-03	4.36E-03
1000≤R<1500 0.003	0.00E+00	1.19E-03	8.69E-04	1.19E-03
1500≤R<2000 0.002	0.00E+00	7.92E-04	5.79E-04	7.92E-04
2000<R 0.001	0.00E+00	3.96E-04	2.90E-04	3.96E-04

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**
Ammonia	**7664417**	4,624.80	0.62	5.28E-01	0.00E+00	3.96E-01	2.90E-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
				Totals	**0.00E+00**	**3.96E-01**	**2.90E-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**
0< R<100 1.000	1.10E+02	9.28E-01	1.85E+00	1.10E+02
100≤R<250 0.250	2.75E+01	2.32E-01	4.63E-01	2.75E+01
250≤R<500 0.040	4.40E+00	3.71E-02	7.40E-02	4.40E+00
500≤R<1000 0.011	1.21E+00	1.02E-02	2.04E-02	1.21E+00
1000≤R<1500 0.003	3.30E-01	2.78E-03	5.55E-03	3.30E-01
1500≤R<2000 0.002	2.20E-01	1.86E-03	3.70E-03	2.20E-01
2000<R 0.001	1.10E-01	9.28E-04	1.85E-03	1.10E-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
Isopropyl alcohol	**67630**	34,795.74	3.73	3.97E+00	0.00E+00	8.51E-02	1.75E+00
Methanol	**67561**	10,518.50	1.13	1.20E+00	0.00E+00	4.50E-02	6.05E-02
Naphthalene	**91203**	411.20	0.04	4.69E-02	1.08E+02	7.82E-01	0.00E+00
Propylene	**115071**	180.93	0.02	2.07E-02	0.00E+00	1.03E-03	0.00E+00
Acetaldehyde	**75070**	115.14	0.01	1.31E-02	2.39E+00	1.41E-02	3.94E-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
				Totals	**1.10E+02**	**9.28E-01**	**1.85E+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**
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

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
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**	1.39E+02	2.68E-01	7.15E-02	1.39E+02
100≤R<250	**0.250**	3.47E+01	6.69E-02	1.79E-02	3.47E+01
250≤R<500	**0.040**	5.54E+00	1.07E-02	2.86E-03	5.54E+00
500≤R<1000	**0.011**	1.52E+00	2.94E-03	7.87E-04	1.52E+00
1000≤R<1500	**0.003**	4.16E-01	8.03E-04	2.15E-04	4.16E-01
1500≤R<2000	**0.002**	2.77E-01	5.35E-04	1.43E-04	2.77E-01
2000<R	**0.001**	1.39E-01	2.68E-04	7.15E-05	1.39E-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**	59.620	9.71E-02	6.81E-03	1.38E+02	2.04E-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	**1.39E+02**	**2.68E-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
0< R<100	**1.000**	2.09E+00	1.40E-01	5.43E-02	2.09E+00
100≤R<250	**0.250**	5.21E-01	3.49E-02	1.36E-02	5.21E-01
250≤R<500	**0.040**	8.34E-02	5.58E-03	2.17E-03	8.34E-02
500≤R<1000	**0.011**	2.29E-02	1.54E-03	5.98E-04	2.29E-02
1000≤R<1500	**0.003**	6.26E-03	4.19E-04	1.63E-04	6.26E-03
1500≤R<2000	**0.002**	4.17E-03	2.79E-04	1.09E-04	4.17E-03
2000<R	**0.001**	2.09E-03	1.40E-04	5.43E-05	2.09E-03

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
Arsenic	**7440382**	9.68E-03	3.52E-06	1.10E-06	2.46E-01	1.10E-02	2.64E-02
Cadmium	**7440439**	2.23E-03	8.12E-07	2.55E-07	7.22E-02	1.91E-03	0.00E+00
Chromium, hexavalent	**18540299**	6.33E-04	2.30E-07	7.22E-08	7.31E-01	5.42E-05	0.00E+00
Cobalt	**7440484**	1.71E-02	6.22E-06	1.95E-06	1.02E+00	0.00E+00	0.00E+00
Copper	**7440508**	1.10E-01	4.00E-05	1.26E-05	0.00E+00	0.00E+00	6.01E-04
Lead	**7439921**	9.23E-02	3.35E-05	1.05E-05	8.53E-03	0.00E+00	0.00E+00
Manganese	**7439965**	5.95E-01	2.16E-04	6.80E-05	0.00E+00	1.13E-01	0.00E+00
Mercury	**7439976**	8.93E-03	3.25E-06	1.02E-06	0.00E+00	5.10E-03	8.12E-03
Nickel	**7440020**	6.70E-03	2.44E-06	7.65E-07	1.34E-02	8.19E-03	1.83E-02
Selenium	**7782492**	1.49E-03	5.41E-07	1.70E-07	0.00E+00	1.27E-06	0.00E+00
Vanadium (fume or dust)	**7440622**	5.28E-02	1.92E-05	6.03E-06	0.00E+00	0.00E+00	9.60E-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	**2.09E+00**	**1.40E-01**	**5.43E-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**	7.25E+00	2.99E-01	2.10E-01	7.25E+00
100≤R<250	**0.250**	1.81E+00	7.47E-02	5.25E-02	1.81E+00
250≤R<500	**0.040**	2.90E-01	1.20E-02	8.41E-03	2.90E-01
500≤R<1000	**0.011**	7.98E-02	3.29E-03	2.31E-03	7.98E-02
1000≤R<1500	**0.003**	2.18E-02	8.97E-04	6.31E-04	2.18E-02
1500≤R<2000	**0.002**	1.45E-02	5.98E-04	4.20E-04	1.45E-02
2000<R	**0.001**	7.25E-03	2.99E-04	2.10E-04	7.25E-03

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
Arsenic	**7440382**	1.25E-02	4.45E-06	1.43E-06	3.18E-01	1.43E-02	3.34E-02
Cadmium	**7440439**	4.04E-03	1.44E-06	4.61E-07	1.30E-01	3.45E-03	0.00E+00
Chromium, hexavalent	**18540299**	4.94E-03	1.76E-06	5.64E-07	5.71E+00	4.23E-04	0.00E+00
Cobalt	**7440484**	1.78E-02	6.32E-06	2.03E-06	1.05E+00	0.00E+00	0.00E+00
Copper	**7440508**	1.39E-01	4.96E-05	1.59E-05	0.00E+00	0.00E+00	7.44E-04
Lead	**7439921**	4.04E-01	1.44E-04	4.61E-05	3.73E-02	0.00E+00	0.00E+00
Manganese	**7439965**	8.88E-01	3.16E-04	1.01E-04	0.00E+00	1.69E-01	0.00E+00
Mercury	**7439976**	1.92E-01	6.83E-05	2.19E-05	0.00E+00	1.09E-01	1.71E-01
Nickel	**7440020**	2.02E-03	7.19E-07	2.30E-07	4.04E-03	2.47E-03	5.39E-03
Selenium	**7782492**	2.02E-03	7.19E-07	2.30E-07	0.00E+00	1.73E-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	**7.25E+00**	**2.99E-01**	**2.10E-01**

APPENDIX “B”

BIOLOGICAL SPECIES EVALUATION

Biological Resources Evaluation Technical Memorandum December 2023

RESOURCE MANAGEMENT AGENCY

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Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

BIOLOGICAL RESOURCES EVALUATION TECHNICAL MEMORANDUM

DATE: December 11, 2023

TO: Hector Guerra, Chief Environmental Planner

FROM: Jessica Willis, Planner IV

SUBJECT: Biological Resources Evaluation for the Visalia Disposal (Landfill) Site and Biogas and Compost Facility – Landfilling Operations Project

PROJECT DESCRIPTION AND LOCATION

The Focused Environmental Impact Report (Original EIR) for the Visalia Landfill – Compost and Biomass Conversion Facility Project (State Clearinghouse # 2021020054) was adopted/certified by the Tulare County Board of Supervisors on September 27, 2022 via Resolution No. 2022-084.[1] The County is preparing a Focused Subsequent Environmental Impact Report (SEIR) to evaluate potential environmental impacts of development of a new, standalone permit for the biomass conversion/ composting facility to exclusively receive 1,000 tons per day (TPD) of organic material as feedstock and 300 haul truck trips per day to transport the organic material to the Landfill site's biomass conversion/composting facility. It is anticipated that the landfilling operations at the Landfill will not change, that is, it will still be permitted to receive a maximum of 2,000 TPD of landfilling material and 900 vehicle trips per day. When combined with the biomass conversion/composting facility's tonnage and vehicle trips, the Landfill will cumulatively receive a maximum of 3,000 TPD of material and 1,200 vehicle trips.

The proposed Project is located within the property boundaries of the existing Visalia Disposal (Landfill) site 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. The Project site is located at Latitude 36° 23' 10.64" N, Longitude 119° 22' 13" W. The Project site is located within Section 4, Township 19 South, Range 24 East, Mount Diablo Base and Meridian and within the Traver USGS 7.5-minute Quadrangle. See Figure 1 for a map of the Project vicinity

BIOLOGICAL RESOURCES DATABASE SEARCH

The Original EIR included a Biological Species Evaluation (BSE) Technical Memorandum which identified special status species and habitats/natural communities potentially located within the 9-quadrangle Project area, the 5-mile Project vicinity, and the immediate Project vicinity (that is, within

[1] Focused Environmental Impact Report for the Visalia Landfill – Compost and Biomass Conversion Facility Project (Original EIR) is available on the County website at: https://tularecounty.ca.gov/rma/planning-building/environmental-planning/environmental-impact-reports/visalia-landfill-compost-and-biomass-conversion-facility/.

0.5 mile of the Landfill property boundaries).[2] The BSE recommended mitigation measures to reduce any potentially significant impacts to these species. The Mitigation Monitoring and Reporting Program (MMRP) adopted for the Original EIR includes 12 mitigation measures for biological resources including: three (3) measures for Swainson's hawk; three (3) measures for burrowing owl; five (5) measures for San Joaquin kit fox; and one (1) measure for tricolored blackbird.[3]

Biological Species and Natural Communities

As the Project is located within the property boundaries of the existing Landfill, if biological resources are found within or in close proximity to the Project site, the Project would be subject to the applicable mitigation measures included in the Original EIR. The most recent California Department of Fish and Wildlife's California Natural Diversity Database (CNDDB), RareFind 5 and Biogeographic Information and Observation System (BIOS 6) mapping applications, were accessed on December 8, 2023, to determine whether any new information regarding special status species in the Project vicinity has become available.

Based on the BIOS 6 map (Figure 1), there remains only one species, the San Joaquin kit fox, recorded within the immediate Project vicinity (0.5-mile radius of the Landfill property boundaries). Therefore, the analysis provided in the Original EIR remains valid and unchanged, and the mitigation measures as adopted in the MMRP of the Original EIR are to be implemented as applicable. The full description of each mitigation measure can be found in Chapter 8 of the Final Original EIR.

Mitigation Measures for Swainson's Hawk

3.2-1 Temporal Avoidance
3.2-2 Pre-construction Surveys
3.2-3 Avoidance of Active Nests

Mitigation Measures for Burrowing Owl

3.2-4 Pre-construction Surveys
3.2-5 Avoidance of Active Nests
3.2-6 Passive Relocation of Resident Owls

Mitigation Measures for San Joaquin Kit Fox

3.2-7 Pre-construction Surveys
3.2-8 Avoidance
3.2-9 Minimization
3.2-10 Employee Education Program
3.2-11 Mortality Reporting

Mitigation Measures for Tricolored Blackbird

3.2-12 Pre-construction Surveys

It is important to note that not all the measures identified above will be applicable to the Project. If pre-construction surveys do not identify presence of special status species, subsequent mitigation will not be required. Implementation of the applicable mitigation measures will reduce potential impacts to biological resources to less than significant.

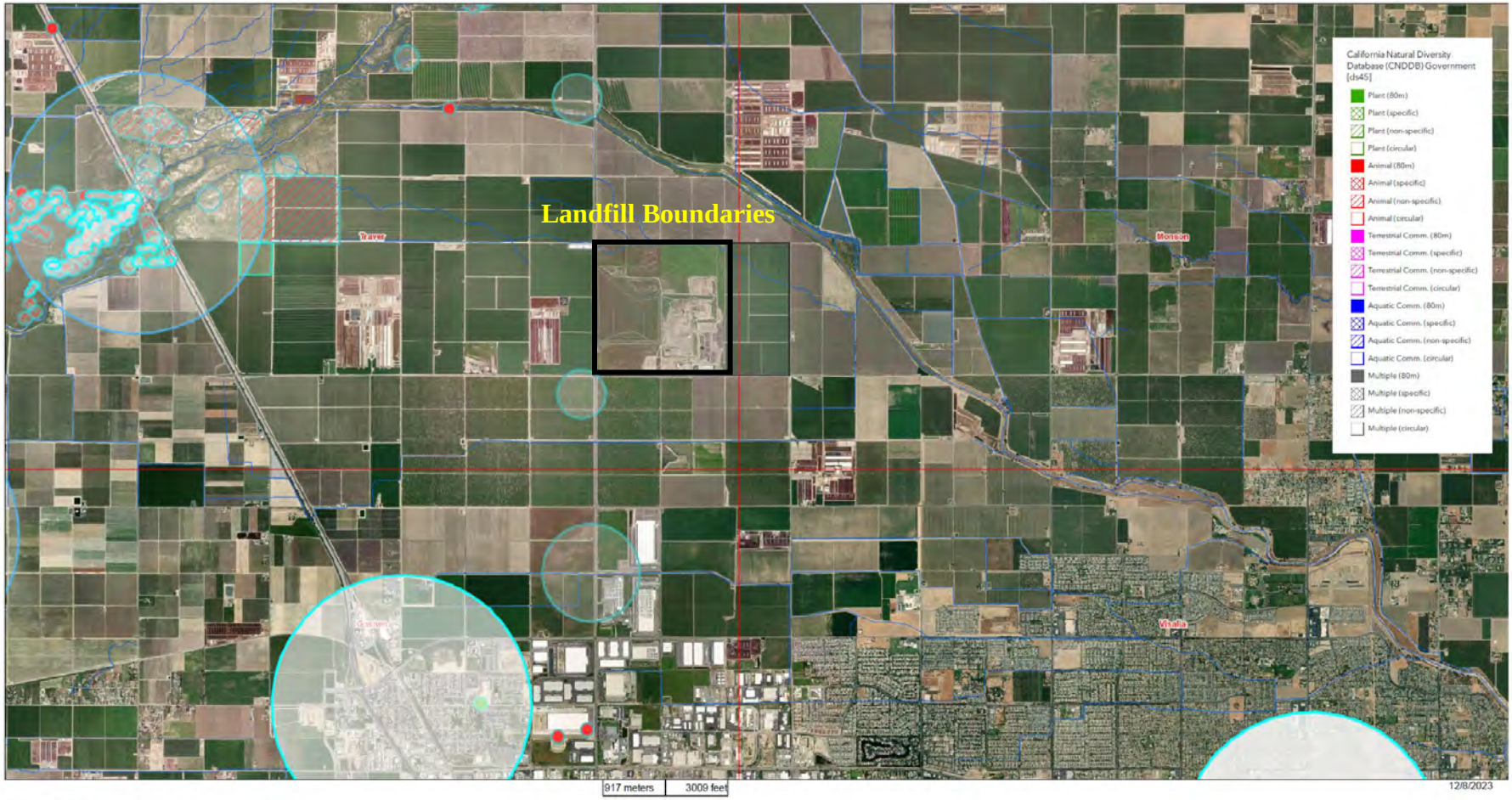
[2] Ibid. Appendix B
[3] Op. Cit. Chapter 8

SUMMARY

The Project is located within the property boundaries of the existing Visalia Disposal (Landfill) Site. There has been no change to the species identified within the 9-quadrange, 5-mile radius, and 0.5-mile radius Project vicinity since the adoption of the Original EIR. As the Project must comply with the mitigation measures adopted with the Original EIR, the Project must comply with all applicable mitigation measures to reduce potential impacts to biological species. Therefore, the Project will not result in significant impact to special status species.

Figure 1. BIOS 6 Project Vicinity

BIOS Map (Visalia Disposal Site Project Vicinity)



(Species in proximity to the proposed Biogas and Compost Facility)

North

Biological Resources Evaluation
Technical Memorandum
November 2021

RESOURCE MANAGEMENT AGENCY

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Aaron R. Bock — Economic Development and Planning
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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]

[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.

<u>CEQA Guidelines Checklist Items</u>

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

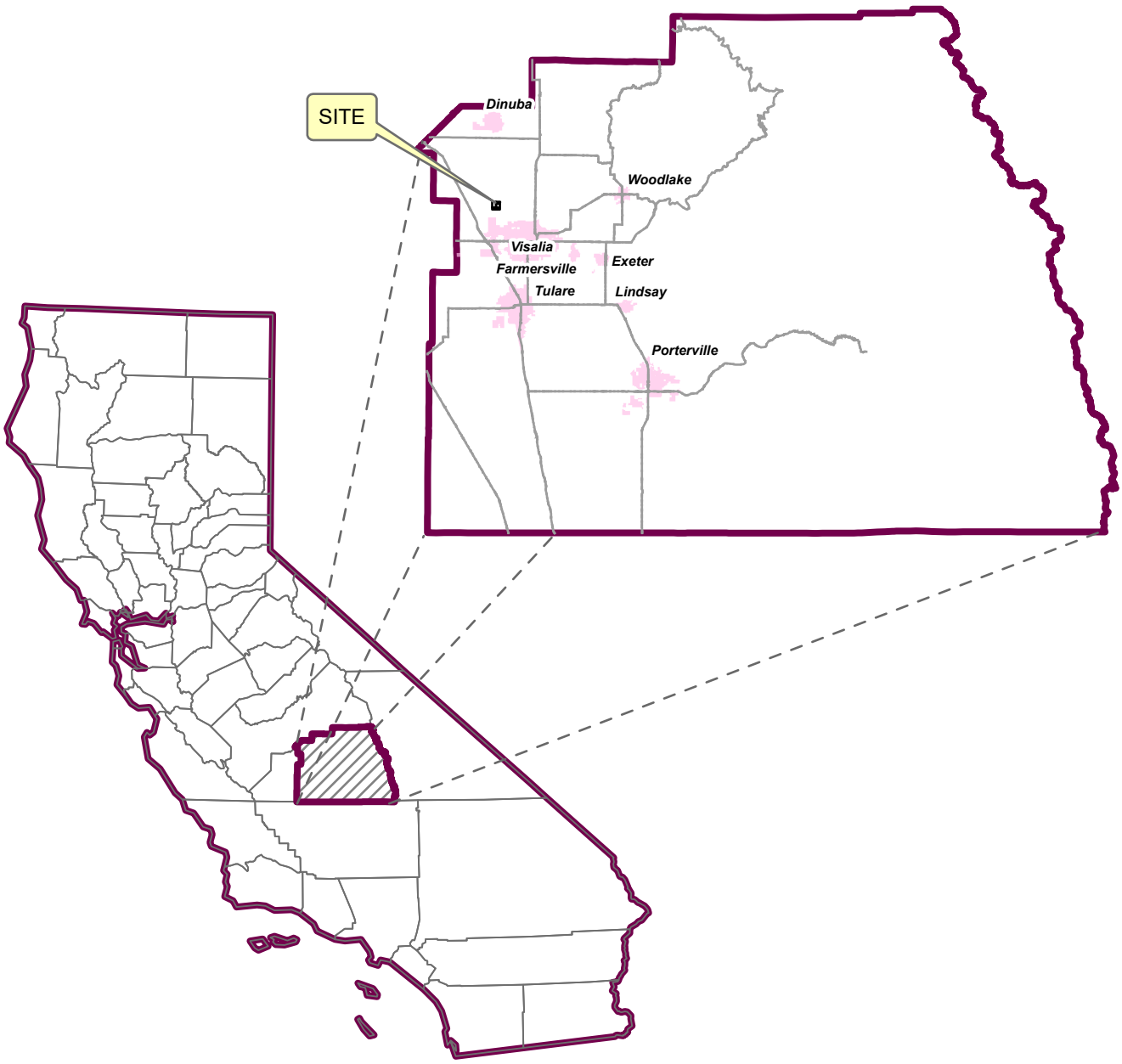
The Project is located within the boundaries of the existing Visalia Landfill. There are no special status species, natural communities, or protected riparian habitats or wetlands located within the Project site. Mitigation Measures 3.2-1 through 3.2-11are consistent with mitigation measures included 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



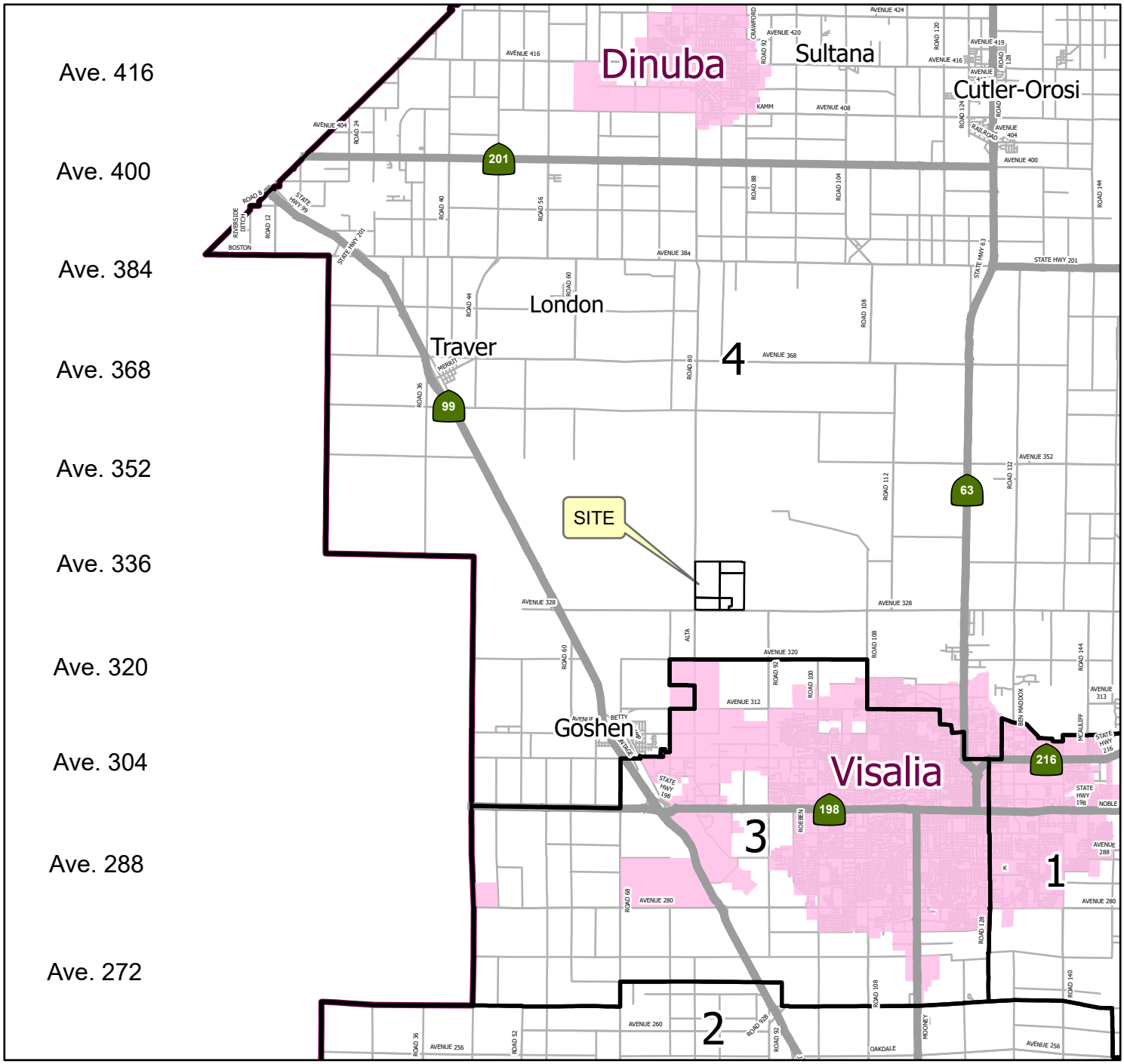
Supervisorial District: #4

Assesors Parcel # 077-020-018, 077-020-021, 077-020-024, 077-020-026, 077-020-030

N

A2. Vicinity Map

Location Map
for
Visalia Landfill Compost and Biomass Conversion Facility



Supervisorial District: #4

Miles
0 1 2 4 6

N

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

0 1,250 2,500 5,000 Feet

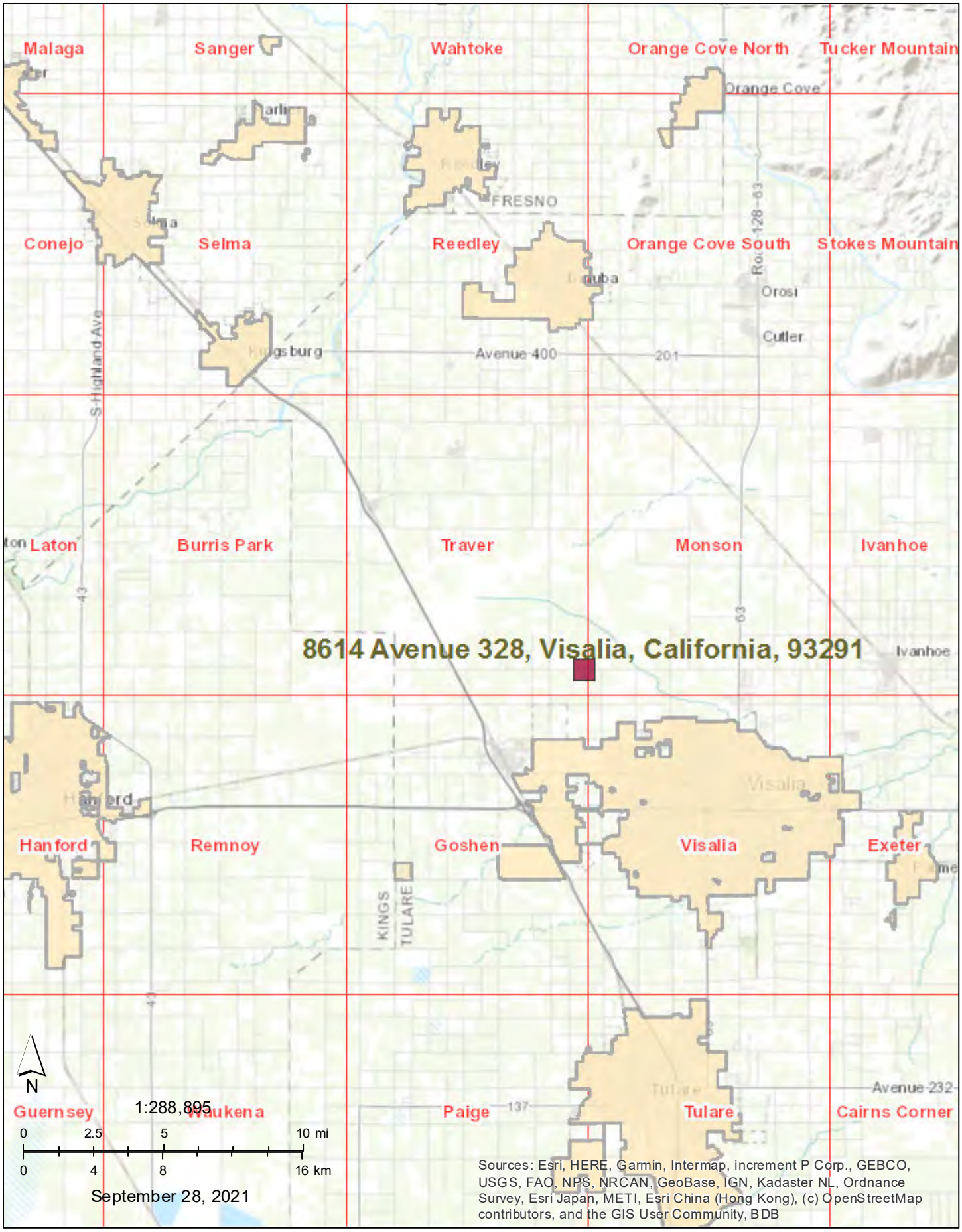
N

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



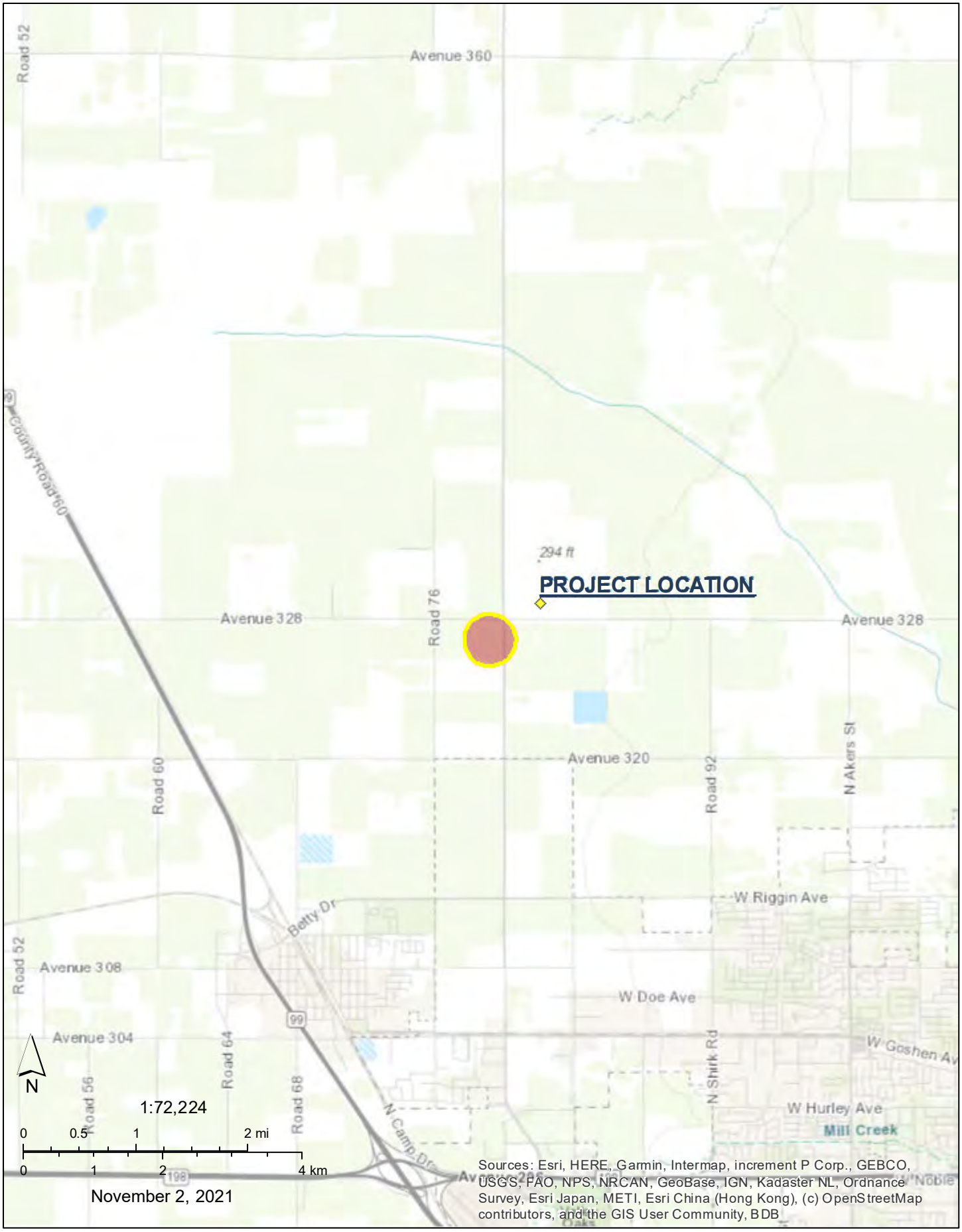
Author: jwillis@tularecounty.ca.gov
Printed from http://bios.dfg.ca.gov

Attachment B

Species Recorded within 0.5 mile of Project Site

B1. Project Site Species Map

Species Within 0.5 Miles of Project Area



B2. Project Site CNDDB Species List

California Natural Diversity Database (CNDDB) Government [ds45]

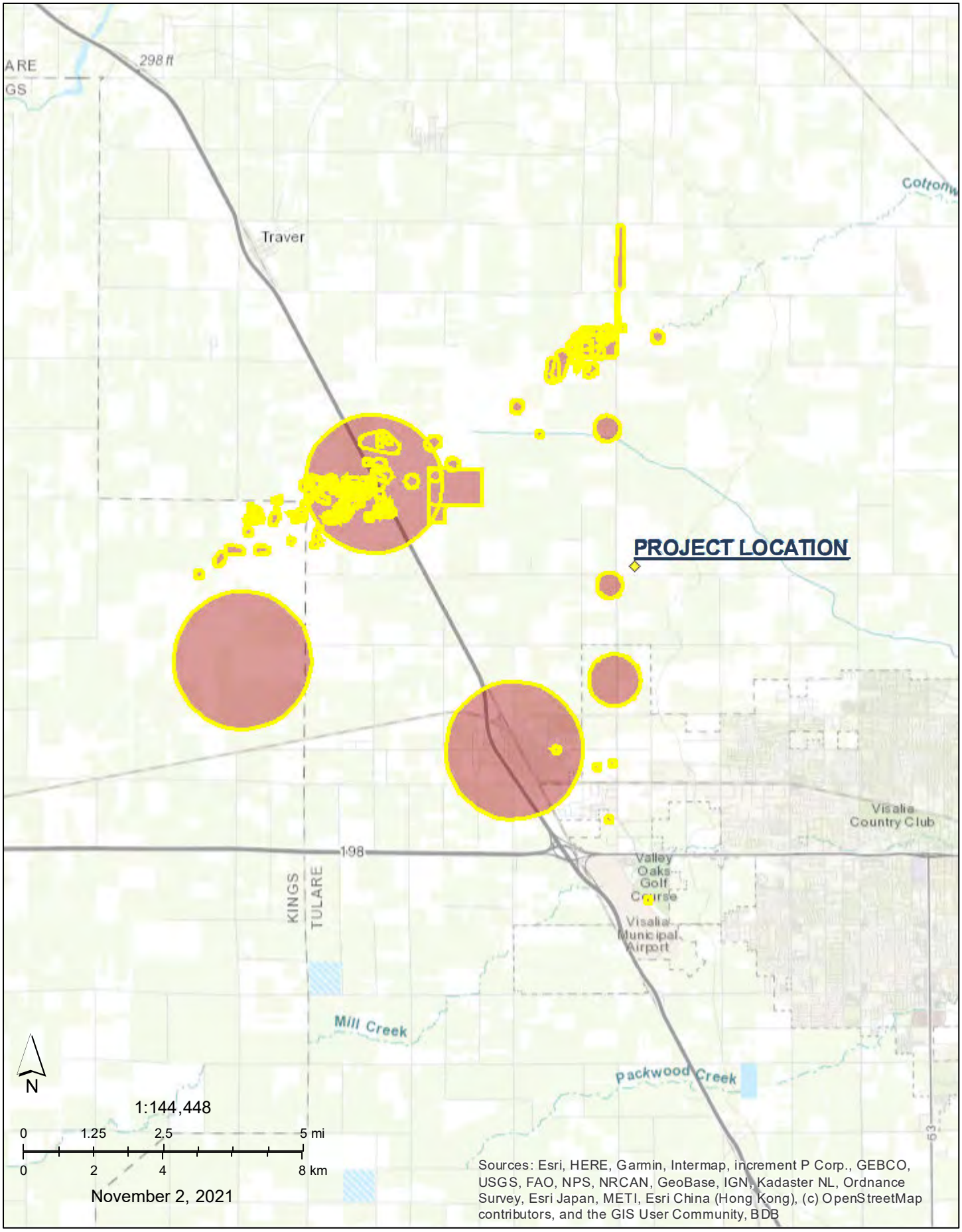
Scientific Name	Common Name	Element Code	Occ Number	MAPNDX	EONDX	Key Quad Code	Key Quad Name	Key County Code	Accuracy	Presence	Occ Type	Occ Rank	Sensitive	Site Date	Elm Date	Owner Management	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank	CDFW Status	Other Status	Symbology	Taxon Group
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



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	Unknown	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	Unknown	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	Unknown	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	Unknown	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	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
Spea hammondii	western 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	Unknown	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	Unknown	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 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
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
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
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
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

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

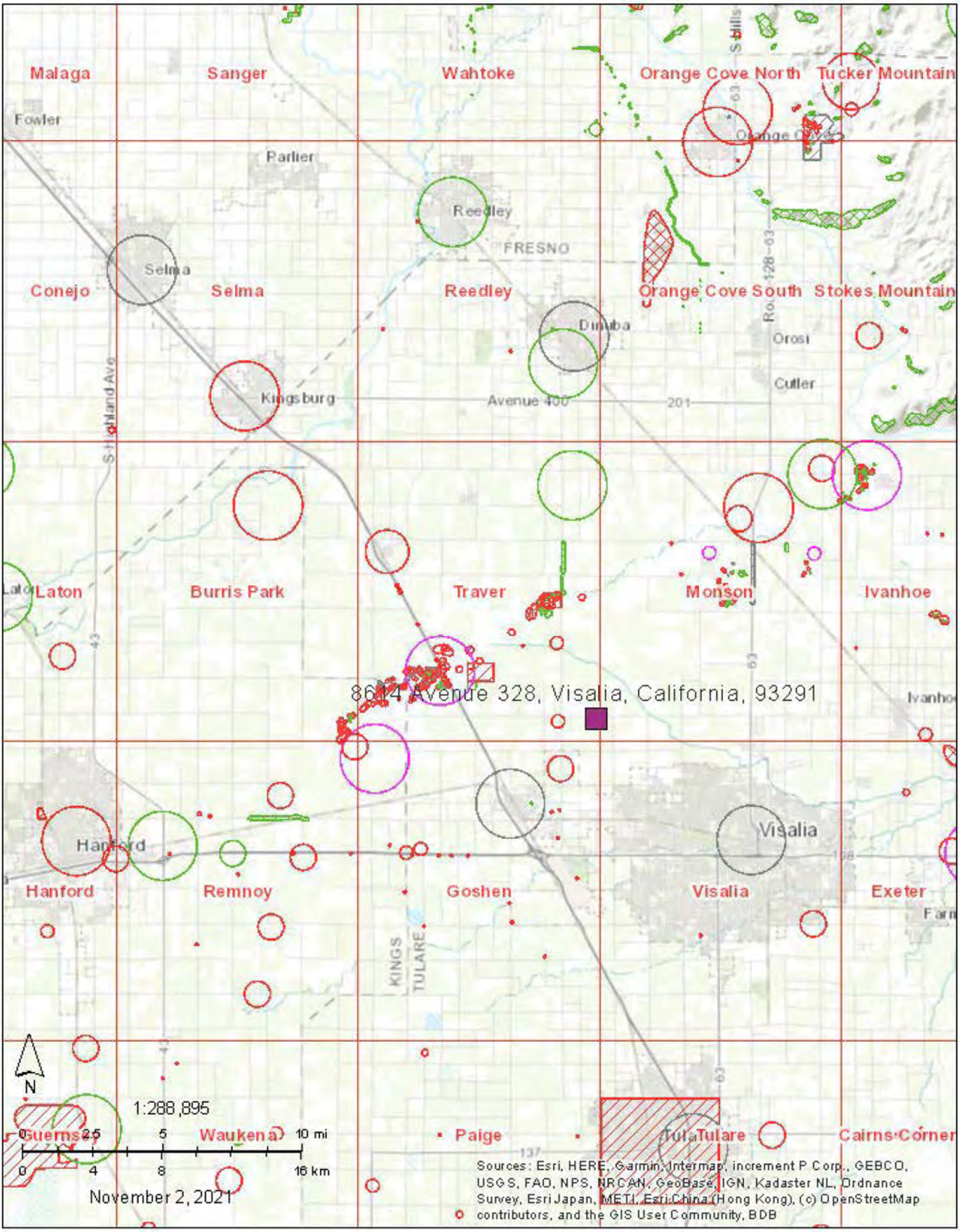
Buteo swainsoni	Swainson's hawk	ABNKC19070	1784	86226	87268	3611944	Traver	TUL	non-specific area	Presumed Extant	Natural/Native occurrence	Fair	N	20170601	20170601	CALTRANS ROW	None	Threatened	G5	S3			BLM_S; IUCN_LC; USFWS_BCC	203	Birds
Linderiella occidentalis	California linderiella	ICBRA06010	492	B5572	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



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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

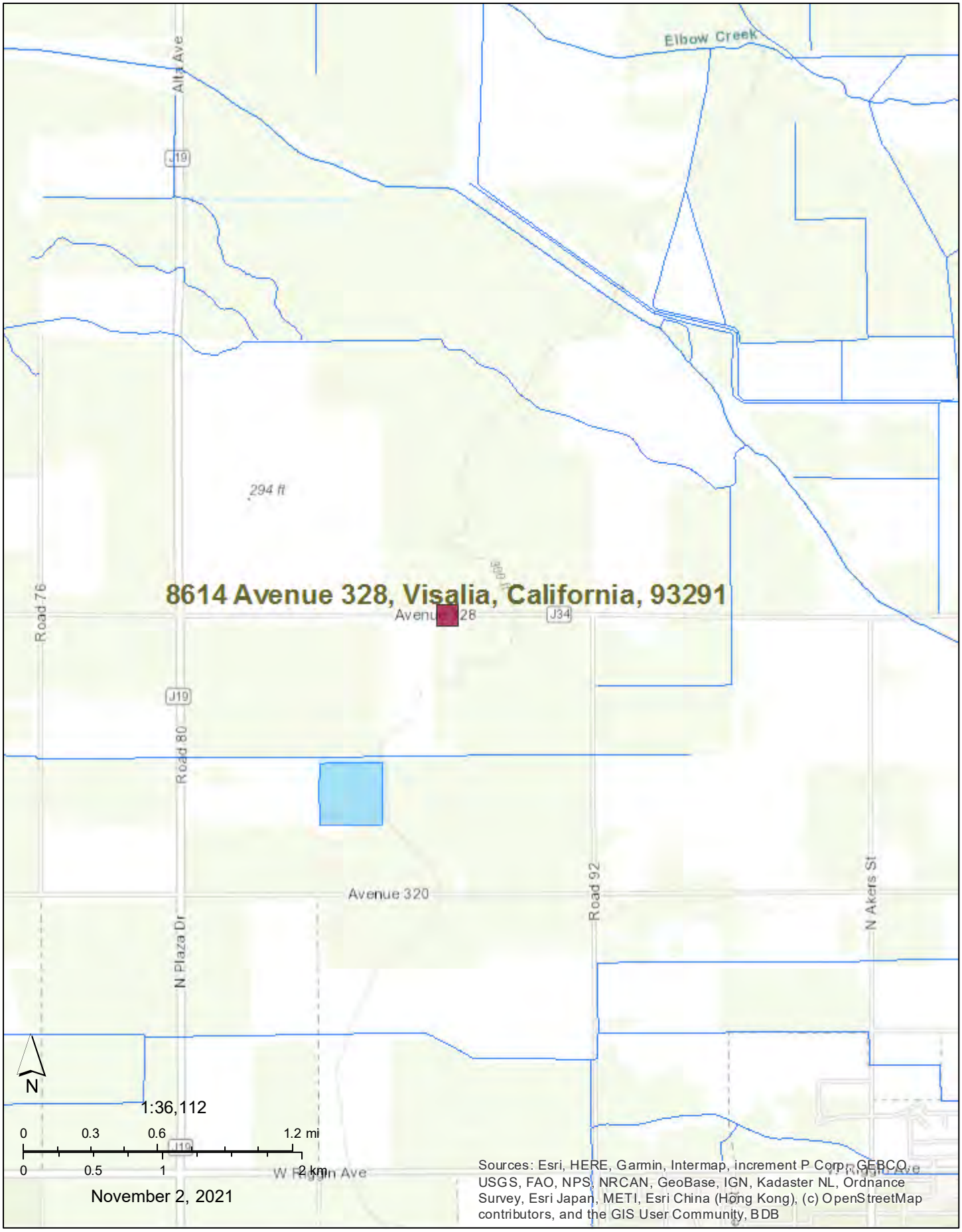
Animals - Mammals	Mustela frenata xanthogenys	San Joaquin long-tailed weasel	None	None	-	-		REEDLEY
Animals - Mammals	Mustela frenata xanthogenys	San Joaquin long-tailed weasel	None	None	-	-		REMNOY
Animals - Mammals	Mustela frenata xanthogenys	San Joaquin long-tailed weasel	None	None	-	-		SELMA
Animals - 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



November 2, 2021

E2. USGS National Water Information System (NWIS) Map

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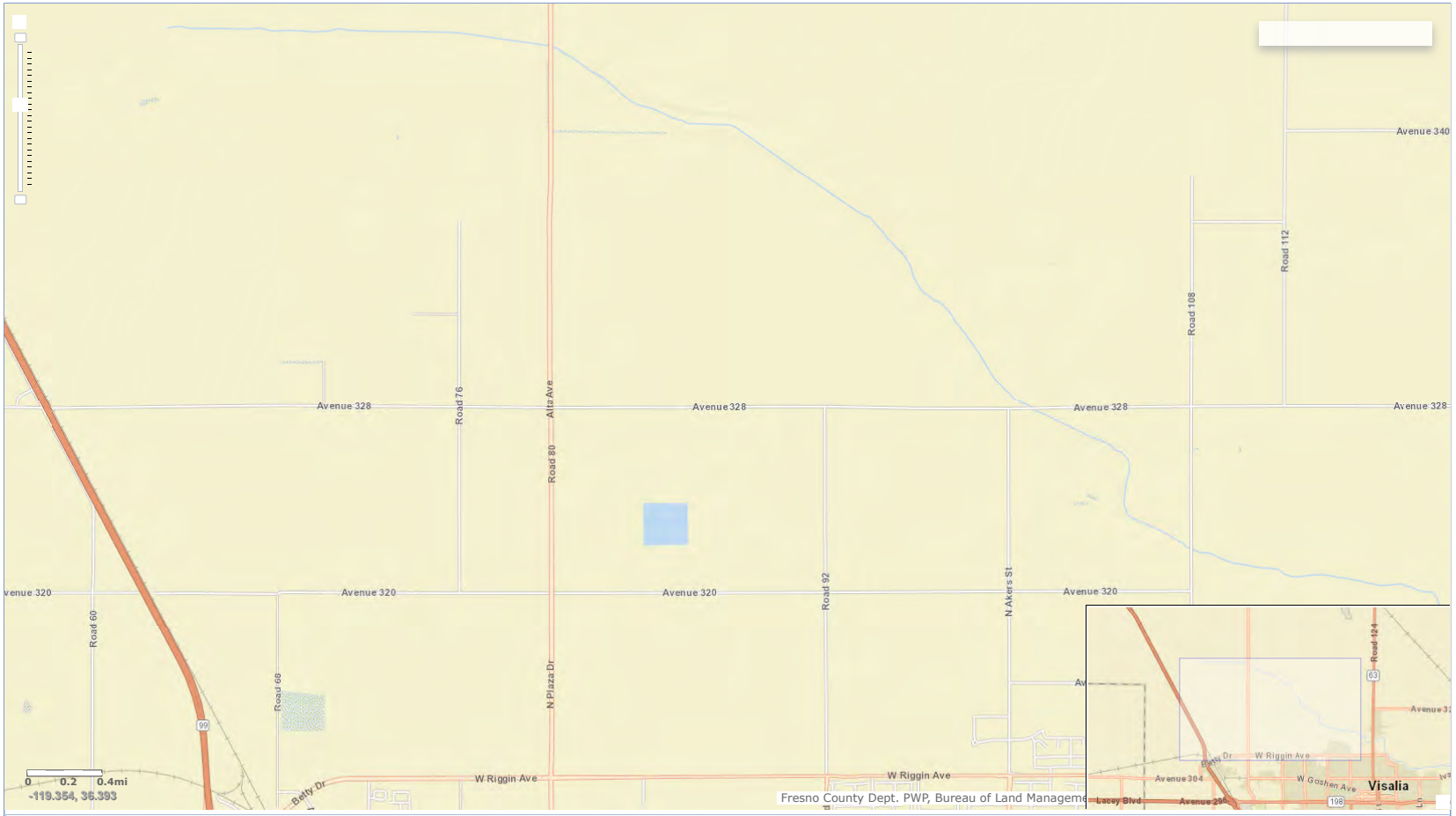
Search by Watershed Region:
Select a Region

Surface-Water Sites
Groundwater Sites
Springs
Atmospheric Sites
Other Sites

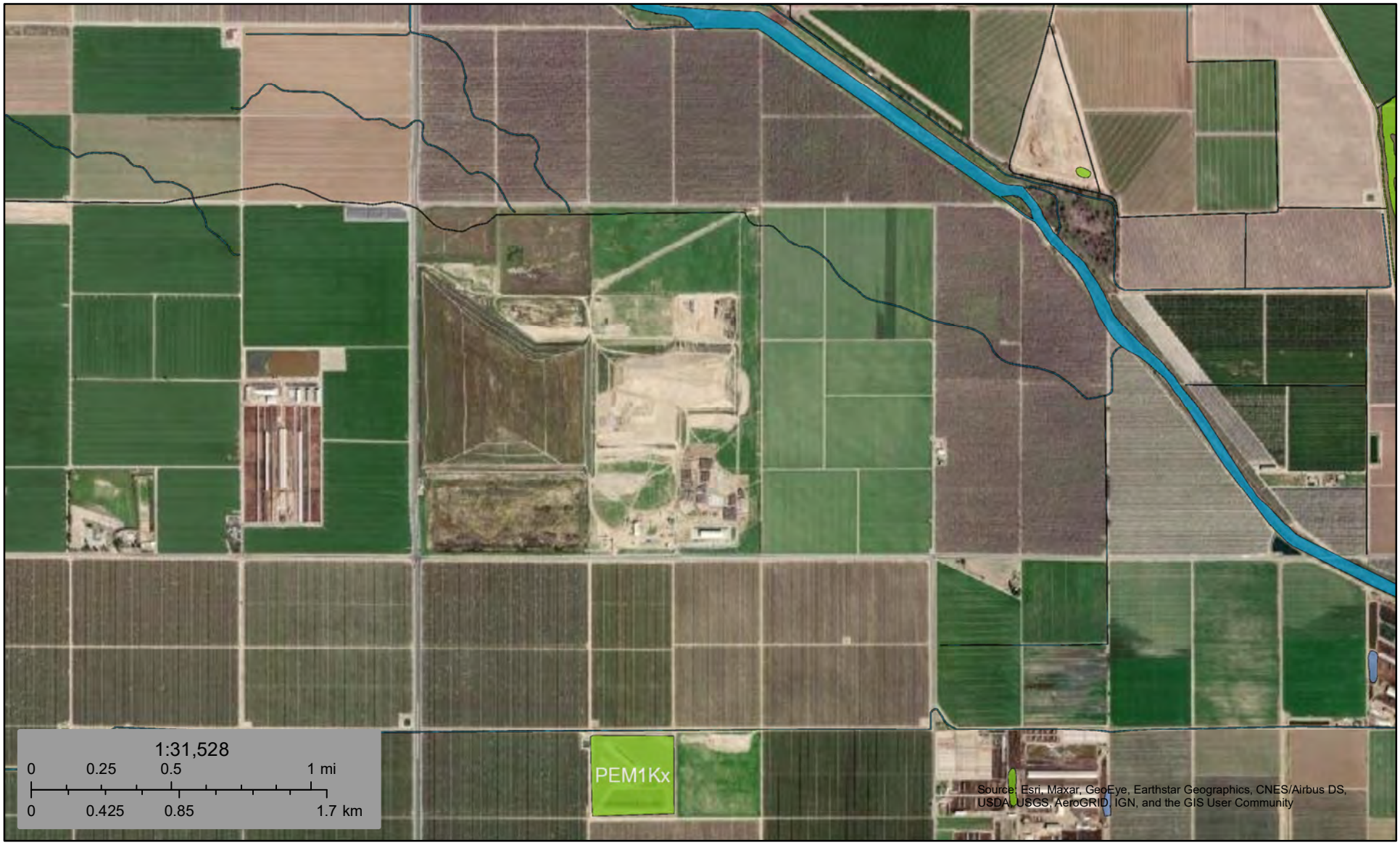


Site Information

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.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

APPENDIX “C”

TRIBAL CULTURAL RESOURCES

Tribal Consultation Tracking Table

TRIBAL CONSULTATION NOTICE AND TRACKING TABLE Visalia Landfill – Compost and Biomass Conversion Facility													
TRIBE CONTACTED	REQUEST TYPE			ITEMS & DOCUMENTS SUBMITTED					DELIVERY METHOD		CONSULTATION PERIOD		CONSULTATION / ACTIONS
	AB 52	SB 18	Sec 106	Project Notification Form/Letter	Maps	SLF Search Results	CHRIS Results	Other	E-mail	Certified US Mail	Return Receipt	Period Ends	Summary
SACRED LAND FILE (SLF) REQUEST													
Native American Heritage Commission NAHC@nahc.ca.gov	X			X	X			Search Request Form	6/7/23	---	---	---	7/13/23, SLF results letter and tribal listing received with Negative results
CONSULTATION REQUEST LETTERS													
Big Sandy Rancheria of Western Mono Indians Elizabeth D. Kipp, Chairperson PO. Box 337 Auberry, CA 93602 lkipp@bsrnnation.com	X			X	X				6/7/23	6/7/23 7020 2450 0000 3027 5018	6/9/23	7/9/23	
Big Sandy Rancheria of Western Mono Indians Joel Marvin, Vice Chairperson PO. Box 337 Auberry, CA 93602 jmarvin@bsrnation.com	X			X	X				11/27/23				Consultation letter emailed after the initial outreach in response to NAHC List
Big Sandy Rancheria of Western Mono Indians Tom Zizzo, Tribal Administrator PO. Box 337 Auberry, CA 93602 tzizzo@bsrnation.com	X			X	X				11/27/23				Consultation letter emailed after the initial outreach in response to NAHC List
Dunlap Band of Mono Indians Benjamin Charley Jr., Tribal Chair P.O. Box 14 Dunlap, CA 93621 ben.charley@yahoo.com	X			X	X				6/7/23	6/7/23 7020 2450 0000 3027 8101	7/06/23	8/4/23	
Dunlap Band of Mono Indians Dirk Charley, Tribal Secretary 5509 E. McKenzie Avenue Fresno, CA 93727 dcharley2016@gmail.com	X			X	X				6/7/23	6/7/23 7020 2450 0000 3027 8095	6/16/23	7/16/23	

TRIBAL CONSULTATION NOTICE AND TRACKING TABLE Visalia Landfill – Compost and Biomass Conversion Facility													
TRIBE CONTACTED	REQUEST TYPE			ITEMS & DOCUMENTS SUBMITTED					DELIVERY METHOD		CONSULTATION PERIOD		CONSULTATION / ACTIONS
	AB 52	SB 18	Sec 106	Project Notification Form/Letter	Maps	SLF Search Results	CHRIS Results	Other	E-mail	Certified US Mail	Return Receipt	Period Ends	Summary
Kern Valley Indian Community Robert Robinson, Co-Chairperson P.O. Box 1010 Lake Isabella, CA 93240 bbutterbredt@gmail.com	X			X	X				6/7/23	6/7/23 7020 2450 0000 3027 8088	6/9/23	7/9/23	
Kern Valley Indian Community Julie Turner, Secretary P. Box 1010 Lake Isabella, CA 93240 meindiangirl@sbcglobal.net	X			X	X				6/7/23	6/7/23 7020 2450 0000 3027 8071	6/9/23	7/9/23	
Kern Valley Indian Community Brandi Kendricks 30741 Foxridge Court Tehachapi, CA 93561 krazykendricks@hotmail.com	X			X	X				6/7/23				
North Fork Mono Tribe Ron Goode, Chairperson 13396 Tollhouse Road Clovis, CA 93619 rwgoode911@hotmail.com	X			X	X				6/7/23	6/7/23 7020 2450 0000 3027 8064	7/20/23	8/19/23	6/14/23- Email received by R.Goode- No Comment
North Fork Mono Tribe Jesse Valdez, Council Member-Archaeological Dir. 120 Monte Vista St. Lindsay, CA 93247 ariesgoathead@gmail.com	X			X	X				11/27/23				Consultation letter emailed after the initial outreach in response to NAHC List
North Fork Mono Tribe Anna Phipps, Tribal Secretary 6051 Bear Creek Rd. Garden Valley, CA 95633 Aphipps01@att.net	X			X	X				11/27/23				Consultation letter emailed after the initial outreach in response to NAHC List
Santa Rosa Rancheria Tachi Yokut Tribe Leo Sisco, Chairperson 16835 Alkali Drive Lemoore, CA 93245 LSisco@tachi-yokut-nsn.gov	X			X	X				6/7/23	6/7/23 7020 2450 0000 3027 8057	6/9/23	7/9/23	

TRIBAL CONSULTATION NOTICE AND TRACKING TABLE Visalia Landfill – Compost and Biomass Conversion Facility													
TRIBE CONTACTED	REQUEST TYPE			ITEMS & DOCUMENTS SUBMITTED					DELIVERY METHOD		CONSULTATION PERIOD		CONSULTATION / ACTIONS
	AB 52	SB 18	Sec 106	Project Notification Form/Letter	Maps	SLF Search Results	CHRIS Results	Other	E-mail	Certified US Mail	Return Receipt	Period Ends	Summary
Santa Rosa Rancheria Cultural Department Shana Powers, Director 16835 Alkali Drive Lemoore, CA 93245 SPowers@tachi-yokut-nsn.gov	X			X	X				6/7/23	6/7/23 7020 2450 0000 3027 8040	6/9/23	7/9/23	
Santa Rosa Rancheria Cultural Department Staff Samantha McCarty SMcCarty@tachi-yokut-nsn.gov Paige Berggren PBerggren@tachi-yokut-nsn.gov	X			X	X				6/7/23	---	---	---	
Tubatulabals of Kern Valley Robert L. Gomez, Jr., Chairperson P.O. Box 833 Weldon, CA 93283-0833 rgomez@tubatulabal.org	X			X	X				6/7/23	6/7/23 7020 2450 0000 3027 8033	6/9/23	7/9/23	
Tule River Indian Tribe Neil Peyron, Chairperson P. O. Box 589 Porterville, CA 93258 neil.peyron@tulerivertribe-nsn.gov	X			X	X				6/7/23	6/7/23 7020 2450 0000 3027 8026	6/10/23	7/10/23	
Tule River Indian Tribe Dept. of Environmental Protection Kerri Vera, Director P. O. Box 589 Porterville, CA 93258 tuleriverenv@yahoo.com keri.vera@tulerivertribe-nsn.gov	X			X	X				6/7/23	6/7/23 7020 2450 0000 3027 8019	6/12/23	7/12/23	
Tule River Indian Tribe Felix Christman, Council Member P. O. Box 589 Porterville, CA 93258 tuleriverarchmon1@gmail.com felix.christman@tulerivertribe-nsn.gov	X			X	X				6/7/23	---	---	---	

TRIBAL CONSULTATION NOTICE AND TRACKING TABLE Visalia Landfill – Compost and Biomass Conversion Facility													
TRIBE CONTACTED	REQUEST TYPE			ITEMS & DOCUMENTS SUBMITTED					DELIVERY METHOD		CONSULTATION PERIOD		CONSULTATION / ACTIONS
	AB 52	SB 18	Sec 106	Project Notification Form/Letter	Maps	SLF Search Results	CHRIS Results	Other	E-mail	Certified US Mail	Return Receipt	Period Ends	Summary
Wuksache Indian Tribe/ Eshom Valley Band Kenneth Woodrow, Chairperson 1179 Rock Haven Ct. Salinas, CA 93906 kwood8934@aol.com	X			X	X				6/7/23	6/7/23 7020 2450 0000 3027 8002	6/9/23	7/9/23	

Native American Heritage Commission
Sacred Land File Search Results

NATIVE AMERICAN HERITAGE COMMISSION

ACTING CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Sara Dutschke
Miwok

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

COMMISSIONER
Wayne Nelson
Luiseño

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
Vacant

COMMISSIONER
Vacant

COMMISSIONER
Vacant

EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok, Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

July 13, 2023

Jessica Willis
County of Tulare

Via Email to: jwillis@tularecounty.ca.gov

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 Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations Project, Tulare County

Dear Ms. Willis:

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: Cameron.vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Tulare County
7/13/2023

County	Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
Tulare	Big Sandy Rancheria of Western Mono Indians	F	Elizabeth Kipp, Chairperson	P.O. Box 337 37387 Auberry Mission Road Auberry, CA, 93602	(559) 374-0066	(559) 374-0055	Lkipp@bsrnation.com	Western Mono	Fresno,Madera,Tulare	5/25/2023
	Big Sandy Rancheria of Western Mono Indians	F	Joel Marvin, Vice Chairperson	P.O. Box 337 37387 Auberry Mission Road Auberry, CA, 93602	(559) 374-0066		Jmarvin@bsrnation.com	Western Mono	Fresno,Madera,Tulare	5/25/2023
	Big Sandy Rancheria of Western Mono Indians	F	Tom Zizzo, Tribal Administrator	P.O. Box 337 37387 Auberry Mission Road Auberry, CA, 93602	(559) 374-0066		Tzizzo@bsrnation.com	Western Mono	Fresno,Madera,Tulare	5/25/2023
	North Fork Mono Tribe	N	Jesse Valdez, Council Member - Archaeological Dir.	120 Monte Vista St. Lindsey, CA, 93247	(559) 350-9113		ariesgoathead@gmail.com	Mono	Fresno,Madera,Tulare	5/25/2023
	North Fork Mono Tribe	N	Ron Goode, Chairperson	13396 Tollhouse Road Clovis, CA, 93619	(559) 355-1774		rwgoode911@hotmail.com	Mono	Fresno,Madera,Tulare	5/25/2023
	North Fork Mono Tribe	N	Anna Phipps, Tribal Secretary	6051 Bear Creek Rd. Garden Valley, CA, 95633	(916) 765-4784		aphipps01@att.net	Mono	Fresno,Madera,Tulare	5/25/2023
	Santa Rosa Rancheria Tachi Yokut Tribe	F	Leo Sisco, Chairperson	P.O. Box 8 Lemoore, CA, 93245	(559) 924-1278	(559) 924-3583		Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	
	Tule River Indian Tribe	F	Neil Peyron, Chairperson	P.O. Box 589 Porterville, CA, 93258	(559) 781-4271	(559) 781-4610	neil.peyron@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	
	Wuksachi Indian Tribe/Eshom Valley Band	N	Kenneth Woodrow, Chairperson	1179 Rock Haven Ct. Salinas, CA, 93906	(831) 443-9702		kwood8934@aol.com	Foothill Yokut Mono	Alameda,Calaveras,Contra Costa,Fresno,Inyo,Kings,Madera,Marin,Mariposa,Merced,Mono,Monterey,San Benito,San	6/19/2023

This list is current only as of the date of this document. 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 is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations Project, Tulare County.

Record: PROJ-2023-003493
Report Type: AB52 GIS
Counties: Tulare
NAHC Group: All

Project Notification Form

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR

MICHAEL WASHAM, ASSOCIATE DIRECTOR

PROJECT NOTIFICATION AND TRIBAL CONSULTATION REQUEST PURSUANT TO AB 52

Project Title: Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations

Project Location: The existing Visalia Disposal (Landfill) Site is located at 8614 Avenue 328, Visalia, CA 93291. The entire Landfill boundary currently encompasses 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).

USGS 7.5 Minute Quadrangle(s): Traver

APN(s): 077-020-030, 077-020-024, 077-020-026, 077-020-018, 077-020-021

PLSS: Sections 4 & 5, Township 18 South, Range 24 East, MDB&M.

Land Use Designation / Zoning: AE-40 (Exclusive Agriculture-40 Acre minimum)

Project Description: Currently, the Visalia Landfill is permitted for receiving up to 2,000 tons of municipal waste per day and are just below that threshold. If the proposed compost facility generates additional new tonnage, the County risks being in violation of that permit. Therefore, the proposed project would increase permitted tonnage to 3,000 tons per day (tpd) to be split between the compost facility and the landfilling operations. The original permitted 2,000 tons will be used for solid waste disposal, and the maximum additional 1,000 tons would be used for the composting operation. It is anticipated that, over time, a maximum of 1,200 haul truck trips will be used to deliver landfill and compost material; 900 haul truck trips would deliver landfill material to the existing landfill and 300 haul truck trips would deliver compost material to the composting operation located within the Landfill's existing footprint.

Request for Consultation: Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA, Public Resources Code § 21000 et seq.), the County of Tulare hereby extends an invitation to consult on the CEQA review of the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility Project – Landfilling Operations in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places and tribal cultural resources.

If your Tribe desires to consult with the County on the review of this project, please respond in writing within thirty (30) days of receipt of this notification. Written correspondence can be mailed to the following addresses:

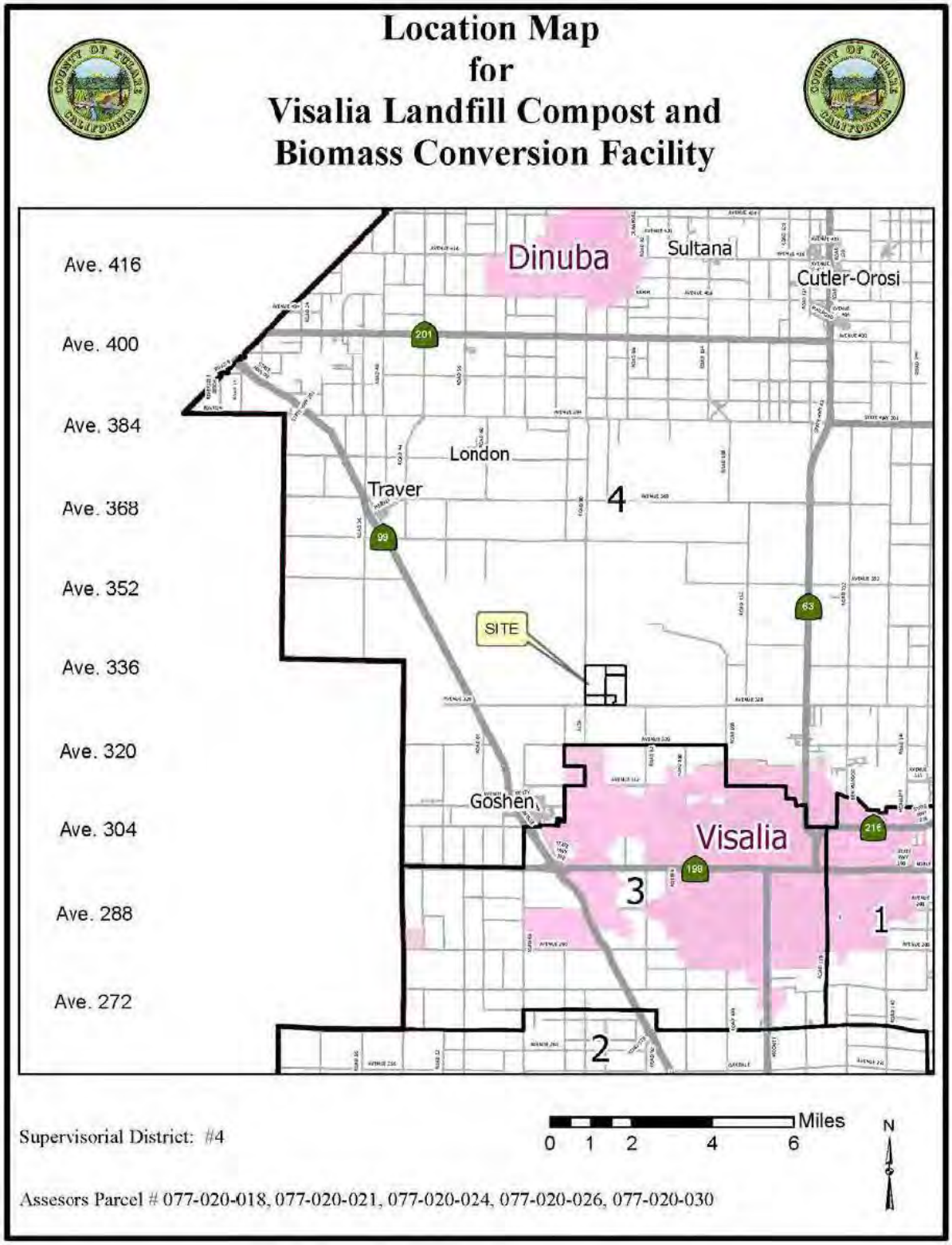
US Post: Tulare County Resource Management Agency
Environmental Planning Division
Attn: Jessica Willis / Hector Guerra
5961 S. Mooney Blvd.
Visalia, CA 93277-9394

E-mail: JWillis@tularecounty.ca.gov and HGuerra@tularecounty.ca.gov

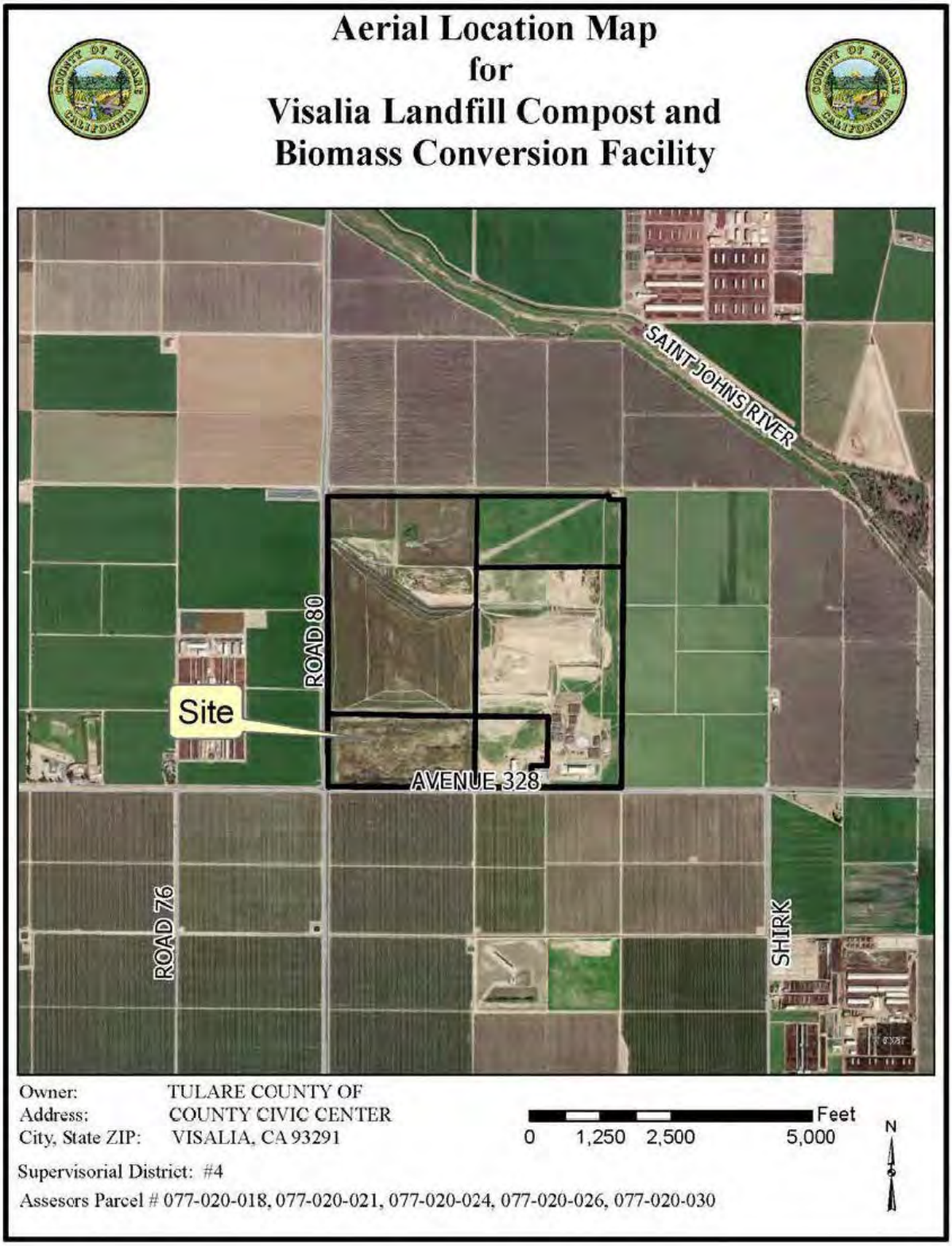
If you need further assistance or have any questions, please feel free to contact Jessica Willis, Planner IV, by phone at (559) 624-7122, or Hector Guerra, Chief Environmental Planner, at (559) 624-7121.

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.

Vicinity Map



Project Location Map



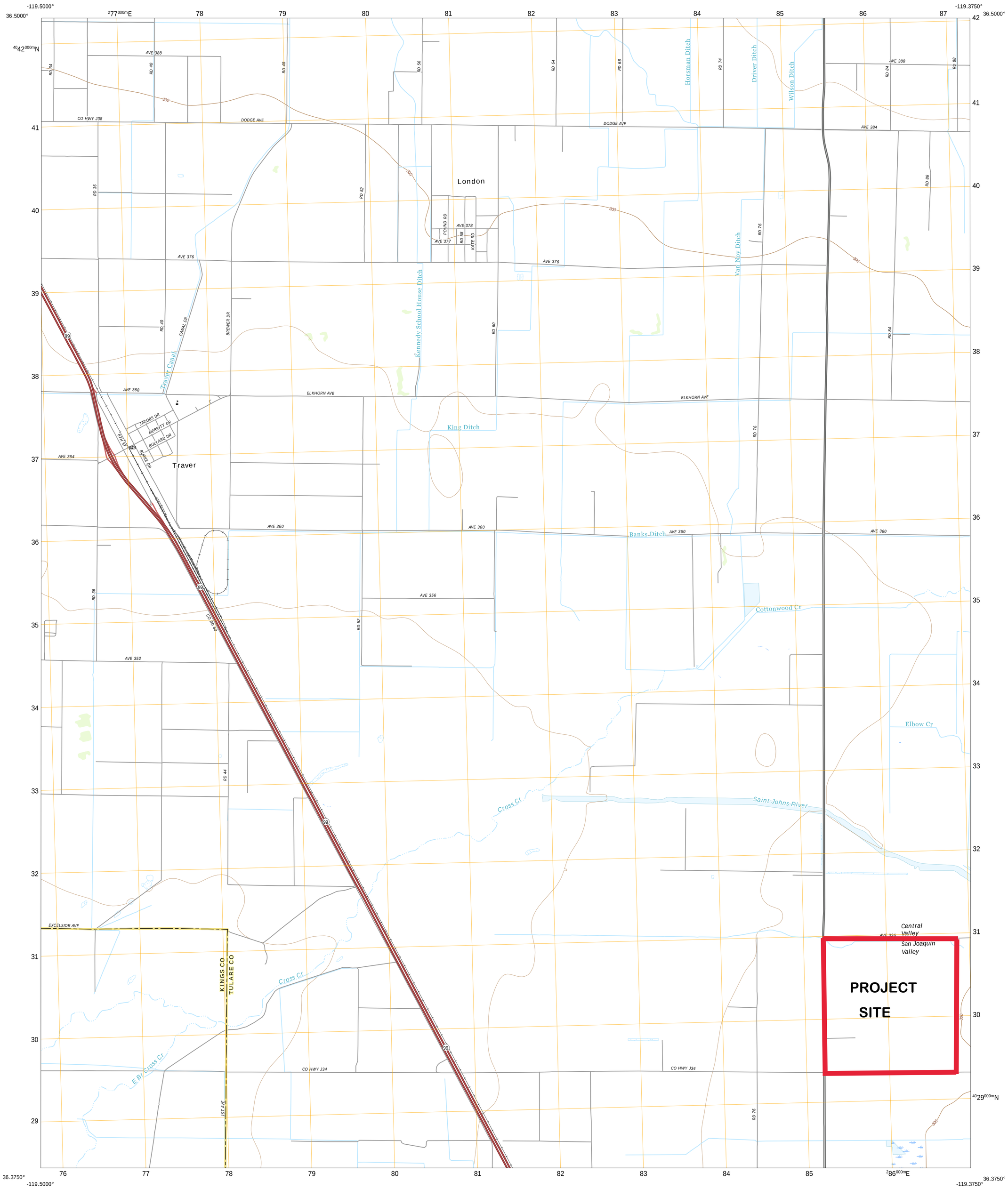
Visalia Landfill Site Plan

= Area of Landfilling Operations

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map
US Topo

TRAVER QUADRANGLE
CALIFORNIA
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid:Universal Transverse Mercator, Zone 11S

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, June 2016 - October 2016
Roads..... U.S. Census Bureau, 2016
Names.....GNIS, 1999 - 2018
Hydrography.....National Hydrography Dataset, 2006 - 2018
Contours.....National Elevation Dataset, 2008
Boundaries.....Multiple sources; see metadata file 2016 - 2017
Public Land Survey System.....BLM, 2018
Wetlands.....FWS National Wetlands Inventory 1984 - 1987

MN
GN
12°45′
227 MILS
1°27′
26 MILS
UTM GRID AND 2017 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
KA
Grid Zone Designation
11S

SCALE 1:24 000

KILOMETERS
METERS
MILES
FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18

CALIFORNIA
QUADRANGLE LOCATION

1 Selma
2 Reedley
3 Orange Cove South
4 Burris Park
5 Monson
6 Remnoy
7 Goshen
8 Visalia
ADJOINING QUADRANGLES

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

TRAVER, CA
2018

NSN. 7643016358017
NGA REF NO. USGSX24K45576

AB 52 Consultation Letters

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR
MICHAEL WASHAM, ASSOCIATE DIRECTOR

June 7, 2023

Big Sandy Rancheria of Western Mono Indians
Elizabeth D. Kipp, Chairperson
PO. Box 337
Auberry, CA 93602

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for a Focused Subsequent Environmental Impact Report for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations

Dear Chairperson Kipp,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA) (Public Resources Code § 21000 et seq.), the County of Tulare hereby extends an invitation to consult on the CEQA review of the Visalia Landfill Site Compost and Biomass Conversion Facility – Landfilling Operations 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.

The Tulare County Board of Supervisors adopted and certified the Environmental Impact Report (EIR) prepared for the Visalia Landfill – Compost and Biomass Conversion Facility Project (SCH #2021020054) on September 27, 2022 (Resolution 2022-0840).[1] However, new information regarding the Project has become available and, in accordance with CEQA Guidelines § 15162, the County of Tulare Resource Management Agency (RMA) will be preparing a Subsequent Focused Environmental Impact Report (SEIR) to evaluate the environmental effects associated with the Project.

<u>Sacred Lands File Search</u>

As indicated in Appendix C of the previous EIR, the County's request for a Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC) in February 2021 returned with

[1] The EIR and related documents can be found on the County website at https://tularecounty.ca.gov/rma/planning-building/environmental-planning/environmental-impact-reports/visalia-landfill-compost-and-biomass-conversion-facility/ or on the Office of Planning and Research CEQAnet website at https://ceqanet.opr.ca.gov/2021020054/4.

"negative" results. As the County is preparing an SEIR, a new SLF search request has been made though the 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

As indicated in Appendix C of the previous EIR, A California Historical Resources Information System (CHRIS) search for the Project area was requested through the Southern San Joaquin Valley Information Center (SSJVIC). The CHRIS search dated March 2, 2021, indicated that there are two (2) recorded resources within ½ mile radius of the Project site. These resources consist of two (2) unamed ditches. The CHRIS search also indicated that there are no recorded cultural resources within the Project area. The Project boundaries, area of potential impact, and mitigation measures have not changed and will remain as previously evaluated. However, the County is providing an opportunity for consultation with your Tribe to determine whether a Tribal Cultural Resources Study will be required. If the County does not receive a response to this request within thirty (30) days of receipt of this letter for CEQA purposes pursuant to AB 52, it will be presumed that a Cultural Resources study will not be required.

Consultation Request

If your Tribe desires to consult with the County on the review of this project, please respond in writing within thirty (30) days regarding AB 52. 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 should 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 Willis
Planner IV
(559) 624-7121
jwillis@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR
MICHAEL WASHAM, ASSOCIATE DIRECTOR

November 27, 2023

Big Sandy Rancheria of Western Mono Indians
Joel Marvin, Vice Chairperson
PO. Box 337
Auberry, CA 93602

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for a Focused Subsequent Environmental Impact Report for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations

Dear Vice Chair Marvin,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA) (Public Resources Code § 21000 et seq.), the County of Tulare hereby extends an invitation to consult on the CEQA review of the Visalia Landfill Site Compost and Biomass Conversion Facility – Landfilling Operations 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.

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<u>Sacred Lands File Search</u>

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Consultation Request

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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 should 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 Willis
Planner IV
(559) 624-7121
jwillis@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR
MICHAEL WASHAM, ASSOCIATE DIRECTOR

November 27, 2023

Big Sandy Rancheria of Western Mono Indians
Tom Zizzo, Tribal Administrator
PO. Box 337
Auberry, CA 93602

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for a Focused Subsequent Environmental Impact Report for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations

Dear Mr. Marvin,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA) (Public Resources Code § 21000 et seq.), the County of Tulare hereby extends an invitation to consult on the CEQA review of the Visalia Landfill Site Compost and Biomass Conversion Facility – Landfilling Operations 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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Aaron R. Bock — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR
MICHAEL WASHAM, ASSOCIATE DIRECTOR

June 7, 2023

Dunlap Band of Mono Indians
Benjamin Charley Jr., Tribal Chair
P.O. Box 14
Dunlap, CA 93621

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for a Focused Subsequent Environmental Impact Report for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations

Dear Chairperson Charley,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA) (Public Resources Code § 21000 et seq.), the County of Tulare hereby extends an invitation to consult on the CEQA review of the Visalia Landfill Site Compost and Biomass Conversion Facility – Landfilling Operations 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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Jessica Willis
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(559) 624-7121
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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

June 7, 2023

Dunlap Band of Mono Indians
Dirk Charley, Tribal Secretary
5509 E. McKenzie Avenue
Fresno, CA 93727

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for a Focused Subsequent Environmental Impact Report for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations

Dear Mr. Charley,

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REED SCHENKE, DIRECTOR
MICHAEL WASHAM, ASSOCIATE DIRECTOR

June 7, 2023

Kern Valley Indian Community
Brandi Kendricks
30741 Foxridge Court
Tehachapi, CA 93561

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for a Focused Subsequent Environmental Impact Report for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations

Dear Ms. Kendricks,

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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

June 7, 2023

Kern Valley Indian Community
Robert Robinson, Co-Chairperson
P.O. Box 1010
Lake Isabella, CA 93240

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for a Focused Subsequent Environmental Impact Report for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations

Dear Chairperson Robinson,

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Aaron R. Bock — Economic Development and Planning
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Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR
MICHAEL WASHAM, ASSOCIATE DIRECTOR

June 7, 2023

Kern Valley Indian Community
Julie Turner, Secretary
P.O. Box 1010
Lake Isabella, CA 93240

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for a Focused Subsequent Environmental Impact Report for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations

Dear Ms. Turner,

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REED SCHENKE, DIRECTOR

MICHAEL WASHAM, ASSOCIATE DIRECTOR

June 7, 2023

North Fork Mono Tribe
Ron Goode, Chairperson
13396 Tollhouse Road
Clovis, CA 93619

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for a Focused Subsequent Environmental Impact Report for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations

Dear Chairperson Goode,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA) (Public Resources Code § 21000 et seq.), the County of Tulare hereby extends an invitation to consult on the CEQA review of the Visalia Landfill Site Compost and Biomass Conversion Facility – Landfilling Operations 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.

The Tulare County Board of Supervisors adopted and certified the Environmental Impact Report (EIR) prepared for the Visalia Landfill – Compost and Biomass Conversion Facility Project (SCH #2021020054) on September 27, 2022 (Resolution 2022-0840).[1] However, new information regarding the Project has become available and, in accordance with CEQA Guidelines § 15162, the County of Tulare Resource Management Agency (RMA) will be preparing a Subsequent Focused Environmental Impact Report (SEIR) to evaluate the environmental effects associated with the Project.

<u>Sacred Lands File Search</u>

As indicated in Appendix C of the previous EIR, the County's request for a Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC) in February 2021 returned with

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Consultation Request

If your Tribe desires to consult with the County on the review of this project, please respond in writing within thirty (30) days regarding AB 52. 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 should 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 Willis
Planner IV
(559) 624-7121
jwillis@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR

MICHAEL WASHAM, ASSOCIATE DIRECTOR

November 27, 2023

North Fork Mono Tribe
Anna Phipps, Tribal Secretary
6051 Bear Creek Rd.
Garden Valley, CA 95633

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for a Focused Subsequent Environmental Impact Report for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations

Dear Ms. Phipps,

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REED SCHENKE, DIRECTOR
MICHAEL WASHAM, ASSOCIATE DIRECTOR

November 27, 2023

North Fork Mono Tribe
Jesse Valdez, Council Member-Archaeological Dir.
120 Monte Vista St.
Lindsay, CA 93247

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for a Focused Subsequent Environmental Impact Report for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations

Dear Mr. Valdez,

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Aaron R. Bock — Economic Development and Planning
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Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR

MICHAEL WASHAM, ASSOCIATE DIRECTOR

June 7, 2023

Santa Rosa Rancheria, Cultural Department
Shana Powers, Director
16835 Alkali Drive
Lemoore, CA 93245

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for a Focused Subsequent Environmental Impact Report for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations

Dear Ms. Powers,

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REED SCHENKE, DIRECTOR
MICHAEL WASHAM, ASSOCIATE DIRECTOR

June 7, 2023

Santa Rosa Rancheria Tachi Yokut Tribe
Leo Sisco, Chairperson
16835 Alkali Drive
Lemoore, CA 93245

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for a Focused Subsequent Environmental Impact Report for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations

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REED SCHENKE, DIRECTOR
MICHAEL WASHAM, ASSOCIATE DIRECTOR

June 7, 2023

Tubatulabals of Kern Valley
Robert L. Gomez, Jr., Chairperson
P.O. Box 833
Weldon, CA 93283-0833

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for a Focused Subsequent Environmental Impact Report for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations

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REED SCHENKE, DIRECTOR
MICHAEL WASHAM, ASSOCIATE DIRECTOR

June 7, 2023

Tule River Indian Tribe
Neil Peyron, Chairperson
P. O. Box 589
Porterville, CA 93258

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for a Focused Subsequent Environmental Impact Report for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations

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If your Tribe desires to consult with the County on the review of this project, please respond in writing within thirty (30) days regarding AB 52. 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 should 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 Willis
Planner IV
(559) 624-7121
jwillis@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR
MICHAEL WASHAM, ASSOCIATE DIRECTOR

June 7, 2023

Tule River Indian Tribe, Dept. of Environmental Protection
Kerri Vera, Director
P. O. Box 589
Porterville, CA 93258

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for a Focused Subsequent Environmental Impact Report for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations

Dear Ms. Vera,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA) (Public Resources Code § 21000 et seq.), the County of Tulare hereby extends an invitation to consult on the CEQA review of the Visalia Landfill Site Compost and Biomass Conversion Facility – Landfilling Operations 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.

The Tulare County Board of Supervisors adopted and certified the Environmental Impact Report (EIR) prepared for the Visalia Landfill – Compost and Biomass Conversion Facility Project (SCH #2021020054) on September 27, 2022 (Resolution 2022-0840).[1] However, new information regarding the Project has become available and, in accordance with CEQA Guidelines § 15162, the County of Tulare Resource Management Agency (RMA) will be preparing a Subsequent Focused Environmental Impact Report (SEIR) to evaluate the environmental effects associated with the Project.

<u>Sacred Lands File Search</u>

As indicated in Appendix C of the previous EIR, the County's request for a Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC) in February 2021 returned with

[1] The EIR and related documents can be found on the County website at https://tularecounty.ca.gov/rma/planning-building/environmental-planning/environmental-impact-reports/visalia-landfill-compost-and-biomass-conversion-facility/ or on the Office of Planning and Research CEQAnet website at https://ceqanet.opr.ca.gov/2021020054/4.

"negative" results. As the County is preparing an SEIR, a new SLF search request has been made though the 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

As indicated in Appendix C of the previous EIR, A California Historical Resources Information System (CHRIS) search for the Project area was requested through the Southern San Joaquin Valley Information Center (SSJVIC). The CHRIS search dated March 2, 2021, indicated that there are two (2) recorded resources within ½ mile radius of the Project site. These resources consist of two (2) unamed ditches. The CHRIS search also indicated that there are no recorded cultural resources within the Project area. The Project boundaries, area of potential impact, and mitigation measures have not changed and will remain as previously evaluated. However, the County is providing an opportunity for consultation with your Tribe to determine whether a Tribal Cultural Resources Study will be required. If the County does not receive a response to this request within thirty (30) days of receipt of this letter for CEQA purposes pursuant to AB 52, it will be presumed that a Cultural Resources study will not be required.

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If your Tribe desires to consult with the County on the review of this project, please respond in writing within thirty (30) days regarding AB 52. 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 should 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 Willis
Planner IV
(559) 624-7121
jwillis@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR
MICHAEL WASHAM, ASSOCIATE DIRECTOR

June 7, 2023

Wuksache Indian Tribe/ Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA 93906

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for a Focused Subsequent Environmental Impact Report for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations

Dear Chairperson Woodrow,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA) (Public Resources Code § 21000 et seq.), the County of Tulare hereby extends an invitation to consult on the CEQA review of the Visalia Landfill Site Compost and Biomass Conversion Facility – Landfilling Operations 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 Willis
Planner IV
(559) 624-7121
jwillis@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

AB 52 Consultation Emails

From:	Danielle Folk
To:	lkipp@bsrnation.com
Cc:	Jessica R Willis
Subject:	AB 52 Project Notification- Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations
Date:	Wednesday, June 7, 2023 4:26:49 PM
Attachments:	Visalia Landfill SEIR_Tribal Consult Letter_BSRWMI_Kipp.pdf Visalia Landfill SEIR_Project Notification.pdf SEIR Visalia Landfill_Traver_Topo Map0001.pdf

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Good afternoon.

Pursuant to AB 52, please find attached the cover letter, Project Notification and Tribal Consultation Request form (including project vicinity map and project site plan maps) and Traver topography map for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations Project. The hard copies of these documents were sent to you via Certified Mail on Wednesday June 7, 2023.

Please feel free to contact me by phone or email if you would like to begin the consultation process. Also, if your tribe would like to decline the opportunity to consult or defer to another tribe, an email stating so would be greatly appreciated.

Thank you.

Danielle Folk

Planner III
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Ben Charley; Dirk Charley
Cc:	Jessica R Willis; Hector Guerra
Subject:	AB 52 Project Notification- Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations
Date:	Wednesday, June 7, 2023 4:31:02 PM
Attachments:	Visalia Landfill SEIR_Tribal Consult Letter_DBMI_DCharley.pdf Visalia Landfill SEIR_Project Notification.pdf SEIR Visalia Landfill_Traver_Topo Map0001.pdf

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Good afternoon.

Pursuant to AB 52, please find attached the cover letter, Project Notification and Tribal Consultation Request form (including project vicinity map and project site plan maps) and Traver topography map for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations Project. The hard copies of these documents were sent to you via Certified Mail on Wednesday June 7, 2023.

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Thank you.

Danielle Folk

Planner III
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Robert Robinson (bbutterbredt@gmail.com); Julie Turner (meindiangirl@sbcglobal.net); Brandy Kendricks (krazykendricks@hotmail.com)
Cc:	Jessica R Willis
Subject:	AB 52 Project Notification- Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations
Date:	Wednesday, June 7, 2023 4:32:20 PM
Attachments:	Visalia Landfill SEIR_Tribal Consult Letter_KVIC_Robinson.pdf Visalia Landfill SEIR_Project Notification.pdf SEIR Visalia Landfill_Traver_Topo Map0001.pdf

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Good afternoon.

Pursuant to AB 52, please find attached the cover letter, Project Notification and Tribal Consultation Request form (including project vicinity map and project site plan maps) and Traver topography map for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations Project. The hard copies of these documents were sent to you via Certified Mail on Wednesday June 7, 2023.

Please feel free to contact me by phone or email if you would like to begin the consultation process. Also, if your tribe would like to decline the opportunity to consult or defer to another tribe, an email stating so would be greatly appreciated.

Thank you.

Danielle Folk

Planner III
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Ron W. Goode
Cc:	Jessica R Willis
Subject:	AB 52 Project Notification- Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations
Date:	Wednesday, June 7, 2023 4:33:51 PM
Attachments:	Visalia Landfill SEIR_Tribal Consult Letter_NFMT_Goode.pdf Visalia Landfill SEIR_Project Notification.pdf SEIR Visalia Landfill_Traver_Topo Map0001.pdf

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Good afternoon.

Pursuant to AB 52, please find attached the cover letter, Project Notification and Tribal Consultation Request form (including project vicinity map and project site plan maps) and Traver topography map for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations Project. The hard copies of these documents were sent to you via Certified Mail on Wednesday June 7, 2023.

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Thank you.

Danielle Folk

Planner III
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Neil Peyron (neil.peyron@tulerivertribe-nsn.gov); Kerri Vera (tuleriverenv@yahoo.com); Felix Christman (tuleriverarchmon1@gmail.com)
Cc:	Jessica R Willis
Subject:	AB 52 Project Notification- Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations
Date:	Wednesday, June 7, 2023 4:42:28 PM
Attachments:	Visalia Landfill SEIR_Tribal Consult Letter_TRIT_Peyron.pdf Visalia Landfill SEIR_Project Notification.pdf SEIR Visalia Landfill_Traver_Topo Map0001.pdf

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Good afternoon.

Pursuant to AB 52, please find attached the cover letter, Project Notification and Tribal Consultation Request form (including project vicinity map and project site plan maps) and Traver topography map for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations Project. The hard copies of these documents were sent to you via Certified Mail on Wednesday June 7, 2023.

Please feel free to contact me by phone or email if you would like to begin the consultation process. Also, if your tribe would like to decline the opportunity to consult or defer to another tribe, an email stating so would be greatly appreciated.

Thank you.

Danielle Folk

Planner III
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Robert L. Gomez (rgomez@tubatulabal.org)
Cc:	Jessica R Willis
Subject:	AB 52 Project Notification- Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations
Date:	Wednesday, June 7, 2023 4:40:50 PM
Attachments:	Visalia Landfill SEIR_Tribal Consult Letter_TKV_Gomez.pdf Visalia Landfill SEIR_Project Notification.pdf SEIR Visalia Landfill_Traver_Topo Map0001.pdf

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Good afternoon.

Pursuant to AB 52, please find attached the cover letter, Project Notification and Tribal Consultation Request form (including project vicinity map and project site plan maps) and Traver topography map for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations Project. The hard copies of these documents were sent to you via Certified Mail on Wednesday June 7, 2023.

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Thank you.

Danielle Folk

Planner III
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Leo Sisco (LSisco@tachi-yokut-nsn.gov); Shana Powers (SPowers@tachi-yokut-nsn.gov); Samantha McCarty; Paige Berggren
Cc:	Jessica R Willis
Subject:	AB 52 Project Notification- Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations
Date:	Wednesday, June 7, 2023 4:35:10 PM
Attachments:	Visalia Landfill SEIR_Tribal Consult Letter_SRRTYT_Powers.pdf Visalia Landfill SEIR_Project Notification.pdf SEIR Visalia Landfill_Traver_Topo Map0001.pdf

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Good afternoon.

Pursuant to AB 52, please find attached the cover letter, Project Notification and Tribal Consultation Request form (including project vicinity map and project site plan maps) and Traver topography map for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations Project. The hard copies of these documents were sent to you via Certified Mail on Wednesday June 7, 2023.

Please feel free to contact me by phone or email if you would like to begin the consultation process. Also, if your tribe would like to decline the opportunity to consult or defer to another tribe, an email stating so would be greatly appreciated.

Thank you.

Danielle Folk

Planner III
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Ken Woodrow (Kwood8934@aol.com)
Cc:	Jessica R Willis
Subject:	AB 52 Project Notification- Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations
Date:	Wednesday, June 7, 2023 4:44:03 PM
Attachments:	Visalia Landfill SEIR_Tribal Consult Letter_WIT_Woodrow.pdf Visalia Landfill SEIR_Project Notification.pdf SEIR Visalia Landfill_Traver_Topo Map0001.pdf

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Good afternoon.

Pursuant to AB 52, please find attached the cover letter, Project Notification and Tribal Consultation Request form (including project vicinity map and project site plan maps) and Traver topography map for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations Project. The hard copies of these documents were sent to you via Certified Mail on Wednesday June 7, 2023.

Please feel free to contact me by phone or email if you would like to begin the consultation process. Also, if your tribe would like to decline the opportunity to consult or defer to another tribe, an email stating so would be greatly appreciated.

Thank you.

Danielle Folk

Planner III
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Aphipps01@att.net
Cc:	Jessica R Willis
Subject:	Visalia Disposal (Landfill) Site Compost and Biogas Compost Facility – Landfilling Operations Project Notification and Tribal request
Date:	Monday, November 27, 2023 3:43:39 PM
Attachments:	Visalia Landfill SEIR_Tribal Consult Letter_NFMT_Phipps.pdf Visalia Landfill SEIR_Project Notification.pdf SEIR Visalia Landfill_CA_Traver_20180829_TM_geo (1).pdf

Good afternoon.

The County of Tulare requested a Sacred Lands File (SLF) record search on June 8, 2023. The NAHC response, dated July 14, 2023, returned with "negative" results and included you as a tribal contact. Pursuant to AB 52, please find attached the cover letter, Project Notification and Tribal Consultation Request form, and Topo map for the Visalia Disposal (Landfill) Site Compost and Biogas Compost Facility – Landfilling Operations. Please note that the County's initial original project notification and Tribal Consultation Request form for the Visalia Disposal Landfill project was submitted to sent to Ron Goode, Tribal Chair, of your tribe via certified mail and email on June 7, 2023. Please note that Ron Goode emailed the County back June 14, 2023 that North Fork Mono Tribe had "no comment" on this Project.

Please feel free to contact me by phone or email if you would like to begin the consultation process. Also, if your tribe would like to decline the opportunity to consult or defer to another tribe, an email stating so would be greatly appreciated.

Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	ariesgoathead@gmail.com
Cc:	Jessica R Willis
Subject:	Visalia Disposal (Landfill) Site Compost and Biogas Compost Facility – Landfilling Operations Project Notification and Tribal request
Date:	Monday, November 27, 2023 3:45:17 PM
Attachments:	Visalia Landfill SEIR_Tribal Consult Letter_NFMT_Valdez.pdf Visalia Landfill SEIR_Project Notification.pdf SEIR Visalia Landfill_CA_Traver_20180829_TM_geo (1).pdf

Good afternoon.

The County of Tulare requested a Sacred Lands File (SLF) record search on June 8, 2023. The NAHC response, dated July 14, 2023, returned with "negative" results and included you as a tribal contact. Pursuant to AB 52, please find attached the cover letter, Project Notification and Tribal Consultation Request form, and Topo map for the Visalia Disposal (Landfill) Site Compost and Biogas Compost Facility – Landfilling Operations. Please note that the County's initial original project notification and Tribal Consultation Request form for the Visalia Disposal Landfill project was submitted to sent to Ron Goode, Tribal Chair, of your tribe via certified mail and email on June 7, 2023. Please note that Ron Goode emailed the County back June 14, 2023 that North Fork Mono Tribe had "no comment" on this Project.

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	jmarvin@bsrnation.com
Cc:	Jessica R Willis
Subject:	Visalia Disposal (Landfill) Site Compost and Biogas Compost Facility – Landfilling Operations Project Notification and Tribal request
Date:	Monday, November 27, 2023 3:46:08 PM
Attachments:	Visalia Landfill SEIR_Tribal Consult Letter_BSRWMI_Marvin.pdf Visalia Landfill SEIR_Project Notification.pdf SEIR Visalia Landfill_CA_Traver_20180829_TM_geo (1).pdf

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Please feel free to contact me by phone or email if you would like to begin the consultation process. Also, if your tribe would like to decline the opportunity to consult or defer to another tribe, an email stating so would be greatly appreciated.

Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	tzizzo@bsrnation.com
Cc:	Jessica R Willis
Subject:	Visalia Disposal (Landfill) Site Compost and Biogas Compost Facility – Landfilling Operations Project Notification and Tribal request
Date:	Monday, November 27, 2023 3:47:07 PM
Attachments:	Visalia Landfill SEIR_Tribal Consult Letter_BSRWMI_Zizzo.pdf Visalia Landfill SEIR_Project Notification.pdf SEIR Visalia Landfill_CA_Traver_20180829_TM_geo (1).pdf

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

APPENDIX “D”

CEQA PROCESS

Notice of Preparation Tracking Table

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT
VISALIA DISPOSAL (LANDFILL) SITE COMPOST AND BIOMASS CONVERSION FACILITY - LANDFILLING OPERATIONS

COUNTY OF TULARE POSTINGS

Location of Document	Notice of Preparation		
	E-mail	Hard Copy	Flash Drive (with NOI & MND)
RMA Website: https://tularecounty.ca.gov/rma/planning-building/environmental-planning/environmental-impact-reports/visalia-landfill-compost-and-biomass-conversion-facility/			
Tulare County Resource Management Agency Permits Counter 5961 S. Mooney Blvd. Visalia, CA 93277-9394		6/14/23	
Tulare County Clerk/Recorder County Civic Center Courthouse, Room 105 221 S. Mooney Blvd. Visalia, CA 93291		6/14/23	
Visalia Main Branch Library 200 W. Oak Ave. Visalia, CA 93291 DWegener@tularecounty.ca.gov Ruth.Tolmachoff@tularecountylibrary.org questions@tularecountylibrary.org	6/14/23 Notice sent 7/11/23	6/14/23	

STATE CLEARINGHOUSE POSTING

Date & Documents Submitted to CEQAnet: 6/14/23

☒ **NOC** ☒ **NOP** ☒ **Electronic Submittal Form**
☒ **Other:** 7/10/23 Clarification Memo

Date Documents Published on CEQAnet: 6/14/23

STATE CLEARINGHOUSE NUMBER: 2021020054

Agencies below were marked with "X" on the NOC	Comment Date	Contact Name and Position
• California Air Resources Board		
• California Energy Commission		
• California Highway Patrol		
• Department of Conservation		
• Department of Fish and Wildlife Region #4	See Below	
• Department of Food and Agriculture		
• Department of Resources and Recycling and Recovery		
• Department of Transportation – District #6		
• Department of Toxic Substances Control		
• Native American Heritage Commission	See Below	
• Natural Resources Agency		
• Office of Historic Preservation		
• Public Utilities Commission		
• Regional Water Quality Control Board District #5F		
• State Water Resources Control Board – Water Quality		

PUBLIC NOTIFICATION

Agency / Party	NOTICE OF PREPARATION			COMMENTS RECEIVED
	US Mail	Interoffice	E-mail	Comment Date / Contact Name and Position / Notes
FEDERAL AGENCIES				
Mr. David S. Hulse Naval Facilities Engineering Command Community Plans Liaison Officer (CPLO) 1220 Pacific Highway AM-3 San Diego, CA 92132	6/13/23 7020 2450 0001 9281 0881	---	---	Tendered to Military: 6/15/23

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT
VISALIA DISPOSAL (LANDFILL) SITE COMPOST AND BIOMASS CONVERSION FACILITY - LANDFILLING OPERATIONS

PUBLIC NOTIFICATION				
	NOTICE OF PREPARATION			**COMMENTS RECEIVED**
Agency / Party	**US Mail**	**Interoffice**	**E-mail**	**Comment Date / Contact Name and Position / Notes**
US Army Corps of Engineers Sacramento District 1325 J Street, Room 1350 Sacramento, CA 95814-2922	6/13/23 7020 2450 0001 9281 0867	---	---	Date of Delivery: 6/16/23
US Department of Agriculture Natural Resources Conservation Service Visalia Service Center Attn: Lurana Strong, District Conservationist 3530 W. Orchard Ct. Visalia, CA 93277-7055 lurana.strong@usda.gov	6/13/23 7020 2450 0000 3027 7975	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/15/23
United States Fish and Wildlife Service Sacramento Fish & Wildlife Office 2800 Cottage Way, Room W-2605 Sacramento, CA 95825-1846	6/13/23 7020 2450 0001 9281 0928	---	---	Date of Delivery: 6/16/23
STATE & REGIONAL AGENCIES				
CA Environmental Protection Agency P.O. Box 2815 Sacramento, CA 95812-2815	6/13/23 7020 2450 0001 9281 0935	---	---	Date of Delivery: 6/16/23
California Department of Conservation California Geological Survey 715 P Street, MS 1901 Sacramento, CA 95814 cgshq@conservation.ca.gov	6/13/23 7020 2450 0001 9281 0942	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/20/23
California Department of Conservation Division of Land Resource Protection 715 P Street, Mail Stop #1904 Sacramento, CA 95814 dlrp@conservation.ca.gov	6/13/23 7020 2450 0001 9281 0959	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/15/23
California Department of Fish and Wildlife Region 4 – Central Region 1234 E. Shaw Avenue Fresno, CA 93710 R4CEQA@wildlife.ca.gov	6/13/23 7020 2450 0001 9281 0966	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/15/23 7/20/23, Letter received from Gerald Hatler, for Julie Vance, Regional Manager
California Department of Toxic Substances Control P.O. Box 806 Sacramento, CA 95812-0806	6/13/23 7020 2450 0001 9281 0973	---	---	Date of Delivery: 6/16/23
California Department 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	---	---	6/14/23 Notice sent 7/11/23	
California Department of Water Resources 715 P Street Sacramento, CA 95814-6400	6/13/23 7020 2450 0001 9281 0980	---	---	Date of Delivery: 6/20/23

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT
VISALIA DISPOSAL (LANDFILL) SITE COMPOST AND BIOMASS CONVERSION FACILITY - LANDFILLING OPERATIONS

PUBLIC NOTIFICATION				
	NOTICE OF PREPARATION			**COMMENTS RECEIVED**
Agency / Party	**US Mail**	**Interoffice**	**E-mail**	**Comment Date / Contact Name and Position / Notes**
California Highway Patrol Central Division (480) Visalia Office Attn: David Gilmore, Area Captain 5025 W. Noble Ave. Visalia, CA 93277 dagilmore@chp.ca.gov	6/13/23 7020 2450 0001 9281 0799	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/15/23
California Natural Resources Agency 715 P Street, 20th Floor Sacramento, CA 95814-6400	6/13/23 7020 2450 0001 9281 0782	---	---	Date of Delivery: 6/20/23
California Public Utilities Commission Energy Division 3rd Floor Attn: Mary Jo Borak 505 Van Ness Ave. San Francisco, CA 94102 bor@cpuc.ca.gov	6/13/23 7020 2450 0001 9281 0775	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/15/23
Native American Heritage Commission 1550 Harbor Blvd, Suite 100 West Sacramento, CA 95691 NAHC@nahc.ca.gov	6/13/23 7020 2450 0001 9281 0768	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/21/23 6/16/23: Letter received from Cameron Vela, Cultural Resources Analyst
State Water Resources Control Board Attn: Lori Schmitz P.O. Box 100 Sacramento, CA 95812 Lori.Schmitz@waterboards.ca.gov	6/13/23 7020 2450 0001 9281 0751	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/16/23 7/24/23: Email received from L. Schmitz, No comment currently
Regional Water Quality Control Board Region 5 – Central Valley 1685 E Street Fresno, CA 93706 CentralValleyFresno@waterboards.ca.gov	6/13/23 7020 2450 0001 9281 0744	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/20/23
San Joaquin Valley APCD Permit Services – CEQA Division 1990 E. Gettysburg Ave. Fresno, CA 93726 CEQA@valleyair.org	6/13/23 7020 2450 0000 3027 0782	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/15/23 7/13/23: Email received from Brian Clements, Director of Permit Services
LOCAL AGENCIES				
Tulare County Agricultural Commissioner Attn: Tom Tucker 4437 S. Laspina Street Tulare CA 93274 TTucker@tularecounty.ca.gov	---	6/13/23	6/14/23 Notice sent 7/11/23	
Tulare County Association of Governments Attn: Ted Smalley 210 N. Church Street, Suite B Visalia, CA 93291 TSmalley@tularecog.org	---	6/13/23	6/14/23 Notice sent 7/11/23	
Tulare County Fire Warden 835 S. Akers Street Visalia, CA 93277	---	6/13/23	---	

PUBLIC NOTIFICATION

Agency / Party	NOTICE OF PREPARATION			COMMENTS RECEIVED
	US Mail	Interoffice	E-mail	Comment Date / Contact Name and Position / Notes
Tulare County Health & Human Services Agency Environmental Health Department Attn: Jessica Gocke 5957 S. Mooney Blvd Visalia, CA 93277 jgocke@tularehhsa.org Allison Shuklian -AShuklia@tularehhsa.org	---	6/13/23	6/14/23 Notice sent 7/11/23	
Tulare County Local Agency Formation Commission 210 N. Church Street, Suite B Visalia, CA 93291	---	6/13/23	---	
Tulare County Office of Emergency Services Attn: Sabrina Bustamante / Megan Fish 5957 S. Mooney Blvd Visalia, CA 93277 slbustamante@tularecounty.ca.gov mfish@tularecounty.ca.gov	---	6/13/23	6/14/23 Notice sent 7/11/23	
Tulare County Sheriff's Office – Headquarters 833 S. Akers St. Visalia, CA 93291 sheriffpio@tularecounty.ca.gov	---	6/13/23	---	
Tulare County Resource Management Agency 5961 S. Mooney Blvd. Visalia, CA 93277 Economic Development - dengland@tularecounty.ca.gov Fire – gportillo@tularecounty.ca.gov Flood Control – rschenke@tularecounty.ca.gov; rmiller@tularecounty.ca.gov Public Works – hbeltran@tularecounty.ca.gov ; jwong@tularecounty.ca.gov	---	---	6/14/23 Notice sent 7/11/23	
Tulare County Farm Bureau Tricia Stever Blattler, Exec. Director 737 N. Ben Maddox Way Visalia, CA 93292 pstever@tulcofb.org	6/13/23 7020 2450 0001 9281 0904	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/15/23
Tulare County Resource Conservation District 3530 W. Orchard Ct Visalia, CA 93277	6/13/23 7020 2450 0001 9281 0911	---	---	Date of Delivery: 6/15/23
Tulare County U.C. Cooperative Extension UC Cooperative Extension 4437 S. Laspina Street Tulare, CA 93274	6/13/23 7020 2450 0001 9281 0898	---	---	Date of Delivery: 6/15/23
City of Visalia Attn: Leslie Caviglia, City Manager 220 N. Santa Fe Street Visalia, CA 93292 leslie.caviglia@visalia.city	6/13/23 7020 2450 0000 3027 5254	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/15/23

PUBLIC NOTIFICATION

Agency / Party	NOTICE OF PREPARATION			COMMENTS RECEIVED
	US Mail	Interoffice	E-mail	Comment Date / Contact Name and Position / Notes
City of Visalia Community Development Attn: Paul Bernal, Director 315 E. Acequia Avenue Visalia, CA 93291 paul.bernal@visalia.city	6/13/23 7020 2450 0000 3027 5247	---	6/14/23 Notice sent 7/11/23	6/18/23: Moving Through Network – in transit to next facility
City of Visalia Solid Waste Attn: Jason Serpa, Manager Jason.Serpa@visalia.city	---	---	6/14/23 Notice sent 7/11/23	
Southern California Edison Attn: Calvin Rossi, Region Manager Local Public Affairs 2425 S. Blackstone St. Tulare, CA 93274 calvin.rossi@sce.com	6/13/23 7020 2450 0000 3027 5230	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/16/23
NATIVE AMERICAN TRIBES				
Big Sandy Rancheria of Western Mono Indians Elizabeth D. Kipp, Chairperson PO. Box 337 Auberry, CA 93602 lkipp@bsrnnation.com	6/13/23 7020 2450 0000 3027 5186	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/15/23
Dunlap Band of Mono Indians Benjamin Charley Jr., Tribal Chair P.O. Box 14 Dunlap, CA 93621 ben.charley@yahoo.com	6/13/23 7020 2450 0000 3027 5162	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 7/5/23
Dunlap Band of Mono Indians Dirk Charley, Tribal Secretary 5509 E. McKenzie Avenue Fresno, CA 93727 dcharley2016@gmail.com	6/13/23 7020 2450 0000 3027 5032	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/15/23
Kern Valley Indian Tribe Robert Robinson, Co-Chairperson P.O. Box 1010 Lake Isabella, CA 93240 bbutterbredt@gmail.com	6/13/23 7020 2450 0000 3027 5025	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/26/23
Kern Valley Indian Tribe Julie Turner, Secretary P. Box 1010 Lake Isabella, CA 93240 meindiangirl@sbcglobal.net	6/13/23 7020 2450 0001 9281 0843	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/26/23
Kern Valley Indian Tribe Brandi Kendricks 30741 Foxridge Court Tehachapi, CA 93561 krazykendricks@hotmail.com	6/13/23 7020 2450 0000 3027 5193	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/15/23
North Fork Mono Tribe Ron Goode, Chairperson 13396 Tollhouse Road Clovis, CA 93619 rwgoode911@hotmail.com	6/13/23 7020 2450 0001 9281 0850	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/15/23

PUBLIC NOTIFICATION				
	NOTICE OF PREPARATION			COMMENTS RECEIVED
Agency / Party	US Mail	Interoffice	E-mail	Comment Date / Contact Name and Position / Notes
Santa Rosa Rancheria Tachi Yokut Tribe Leo Sisco, Chairperson 16835 Alkali Drive Lemoore, CA 93245 LSisco@tachi-yokut-nsn.gov	6/13/23 7020 2450 0001 9281 0836	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/15/23
Santa Rosa Rancheria Tachi Yokut Tribe Cultural Department Shana Powers, Director 16835 Alkali Drive Lemoore, CA 93245 SPowers@tachi-yokut-nsn.gov	6/13/23 7020 2450 0001 9281 0829	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/15/23
Santa Rosa Rancheria Cultural Department Staff Samantha McCarty SMcCarty@tachi-yokut-nsn.gov Paige Berggren PBerggren@tachi-yokut-nsn.gov	---	---	6/14/23 Notice sent 7/11/23	
Tubatulabals of Kern Valley Robert L. Gomez, Jr., Chairperson P.O. Box 833 Weldon, CA 93283-0833 rgomez@tubatulabal.org	6/13/23 7020 2450 0001 9281 0805	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/15/23
Tule River Indian Tribe Neil Peyron, Chairperson P. O. Box 589 Porterville, CA 93258 neil.peyron@tulerivertribe-nsn.gov	6/13/23 7020 2450 0001 9281 0812	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/20/23
Tule River Indian Tribe Dept. of Environmental Protection Kerri Vera, Director P. O. Box 589 Porterville, CA 93258 tuleriverenv@yahoo.com	6/13/23 7020 2450 0000 3027 5216	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/20/23
Tule River Indian Tribe Felix Christman, Council Member P. O. Box 589 Porterville, CA 93258 tuleriverarchmon1@gmail.com felix.christman@tulerivertribe-nsn.gov	---	---	6/14/23 Notice sent 7/11/23	
Wuksache Indian Tribe/ Eshom Valley Band Kenneth Woodrow, Chairperson 1179 Rock Haven Ct. Salinas, CA 93906 Kwood8934@aol.com	6/13/23 7020 2450 0000 3027 5209	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/15/23
INTERESTED PARTIES				
Tulare County Solid Waste 5955 S Mooney Blvd Visalia, CA 93277 jtrevino@tularecounty.ca.gov lbfeldstein@tularecounty.ca.gov	---	---	6/14/23 Notice sent 7/10/23	

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT
VISALIA DISPOSAL (LANDFILL) SITE COMPOST AND BIOMASS CONVERSION FACILITY - LANDFILLING OPERATIONS

PUBLIC NOTIFICATION				
	NOTICE OF PREPARATION			**COMMENTS RECEIVED**
Agency / Party	**US Mail**	**Interoffice**	**E-mail**	**Comment Date / Contact Name and Position / Notes**
Edgar Engineering Inc. 1822 21st Street Sacramento, CA 95811 evan@edgarinc.org neil@edgarinc.org	---	---	6/14/23 Notice sent 7/11/23	
Lozeau Drury LLP 1939 Harrison St, Ste 150 Oakland, CA 94612 Michael Lozeau - michael@lozeaudrury.com Hannah Hughes - hannah@lozeaudrury.com Sophie Roberts – sophie@lozeaudrury.com	6/13/23 7020 2450 0000 3027 5223	---	6/14/23 Notice sent 7/11/23	Date of Delivery: 6/15/23

Notice of Preparation, June 13, 2023
and
Clarification Memo, July 10, 2023

NOTICE OF PREPARATION

To:	State Clearinghouse PO Box 3044/ 1400 Tenth St Sacramento, CA 95814	From:	County of Tulare – RMA 5961 S Mooney Blvd Visalia CA 93277

Date: June 13, 2023

Subject: Notice of Preparation (NOP) of a Draft Focused Subsequent Environmental Impact Report (EIR) and Scoping Meeting

Project Title: Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility - Landfilling Operations

Project Applicant: County of Tulare

Project Location: Physical Address: 8614 Avenue 328, Visalia, CA 93291;
Assessor Parcel Number (APN): 077-020-018, -021, 024-, -026, and -030
Section/Township/Range: Sec. 4, 5, T. 18 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 Subsequent Environmental Impact Report (Subsequent EIR, SEIR or EIR) 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/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, June 29, 2023, at 1:30 P.M.** in the Main Conference Room of the Tulare County Resource Management Agency at the address shown above. **Please sign in at the Security Desk in the Government Plaza main lobby.** The meeting is also available via call-in by phone at **(559) 624-7116**.

Please direct your response to **Hector Guerra, Chief Environmental Planner** at the address shown above. He may be contacted by e-mail at hguerra@tularecounty.ca.gov or by telephone at 559-624-7121.

Signature: _____ Date: 6/13/23
Name/Title: Hector Guerra, Chief Environmental Planner

Signature: _____ Date: 6/13/23
Name/Title: Reed Schenke, P.E., RMA Director / Environmental Assessment Officer

PROJECT DESCRIPTION

This Draft Focused Subsequent Environmental Impact Report (Subsequent EIR, SEIR, or EIR) is tiering off of the adopted/certified EIR (SCH No. 2021020054) for the Visalia Disposal (Landfill) Site – Compost and Biomass Conversion Facility ("Original EIR") project. The SEIR will address two proposed updates to the County's current landfill permit from the California Department of Resources Recycling and Recovery (CalRecycle) to avoid the County's risk of violating its current permit by exceeding its daily tonnage limit. In summary, the County is proposing to: 1) retain its maximum daily tonnage of refuse of 2,000 tons per day (TPD); and 2) increase the maximum daily vehicle limit from 900 to 1,200 vehicles (an increase of 300 vehicles per day).

As noted in the Original EIR (SCH No. 2000051098), "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."[1] To accommodate the transport of organic material for the compost and biogas component at the Landfill, it is anticipated that a maximum of 300 vehicles (haul trucks) would be required. Increases in haul trucks would be incremental over an approximately 13-year period when the compost and biogas component reaches maximum operations.

To reiterate and summarize, the proposed SEIR is intended to maintain the current maximum permitted volume of solid waste (2,000 TPD) and increase total daily vehicles by 300 vehicles (to haul in organic material) for the compost/biogas component of the Landfill.

It is noted that the Original adopted/certified EIR (Original EIR, SCH No. 2000051098), including applicable technical studies (e.g., air quality and greenhouse gases) and the mitigation monitoring and reporting program (MMRP), are incorporated by reference in their entirety for this SEIR. Also, the findings/conclusions/determinations regarding biological resources contained in the adopted/certified EIR (SCH No. 2000051098) for the Visalia Landfill Master Development Plan will be incorporated by reference in their entirety as applicable to the SEIR.

The site is currently zoned as AE-40 (Exclusive Agriculture 40-Acre Minimum).

See Figures 1 and 2 illustrating the facility's location and areas (cells) dedicated to landfilling.

Figures included in this Notice

Figure 1 - Regional Location Map
Figure 2 – Vicinity Map
Figure 3 - Site Map

[1] County of Tulare. Draft Focused Environmental Impact Report (SCH# 2021020054) Visalia Disposal Site and Compost Facility. Pages 2-2 and 2-3. Adopted and Certified by the Tulare County Board of Supervisors on September 27, 2022, via Resolution No. 2022-0840.

Potential Approvals Required

The following agencies may have jurisdiction/interests concerning the proposed Project:

California Department of Resources and Recycling and Recovery (Cal Recycle)
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@tularecounty.ca.gov; or
Phone: (559) 624-7121

Figure 1 - Regional and Vicinity Location Map

Figure 2 - Vicinity Map

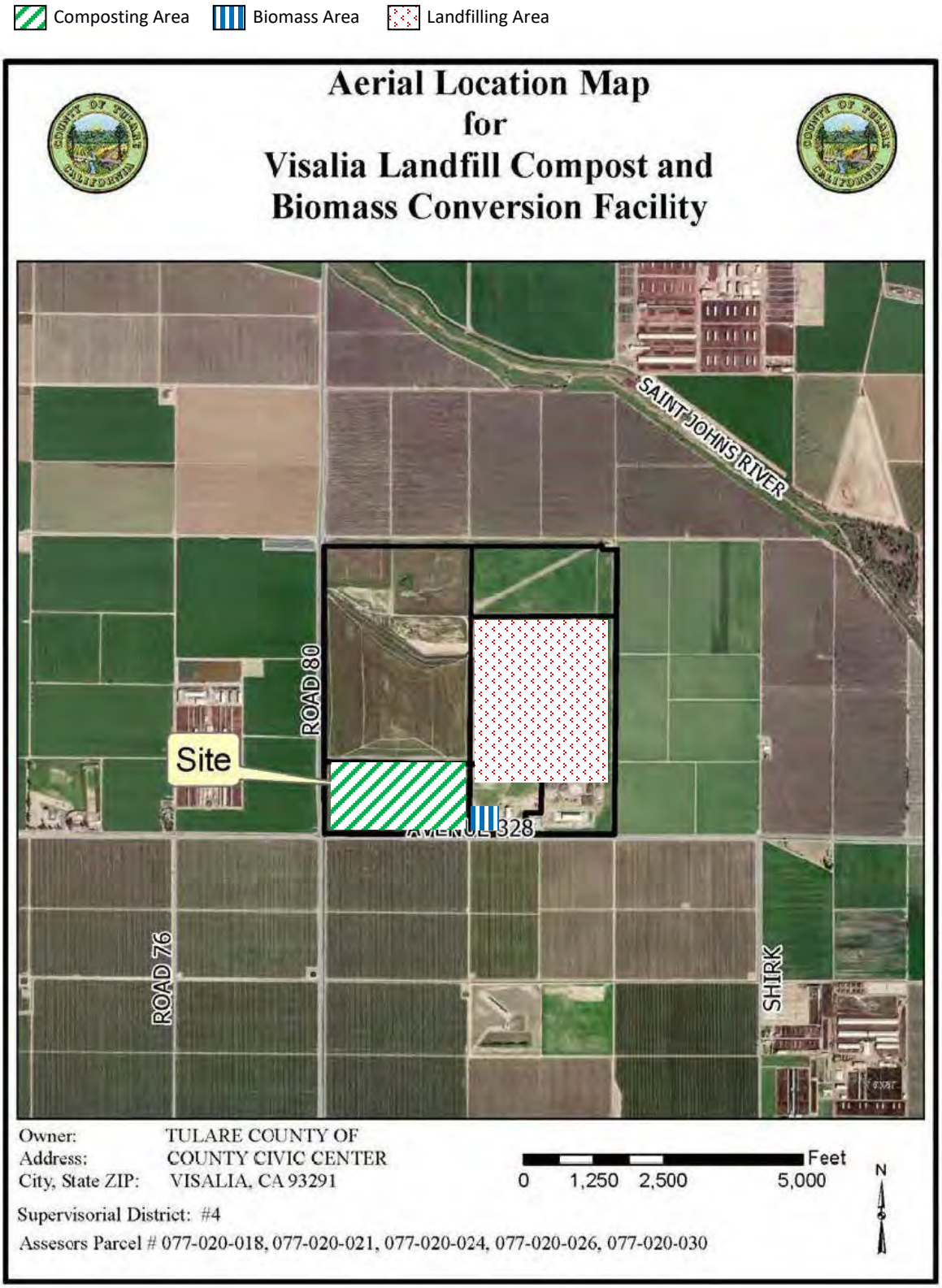
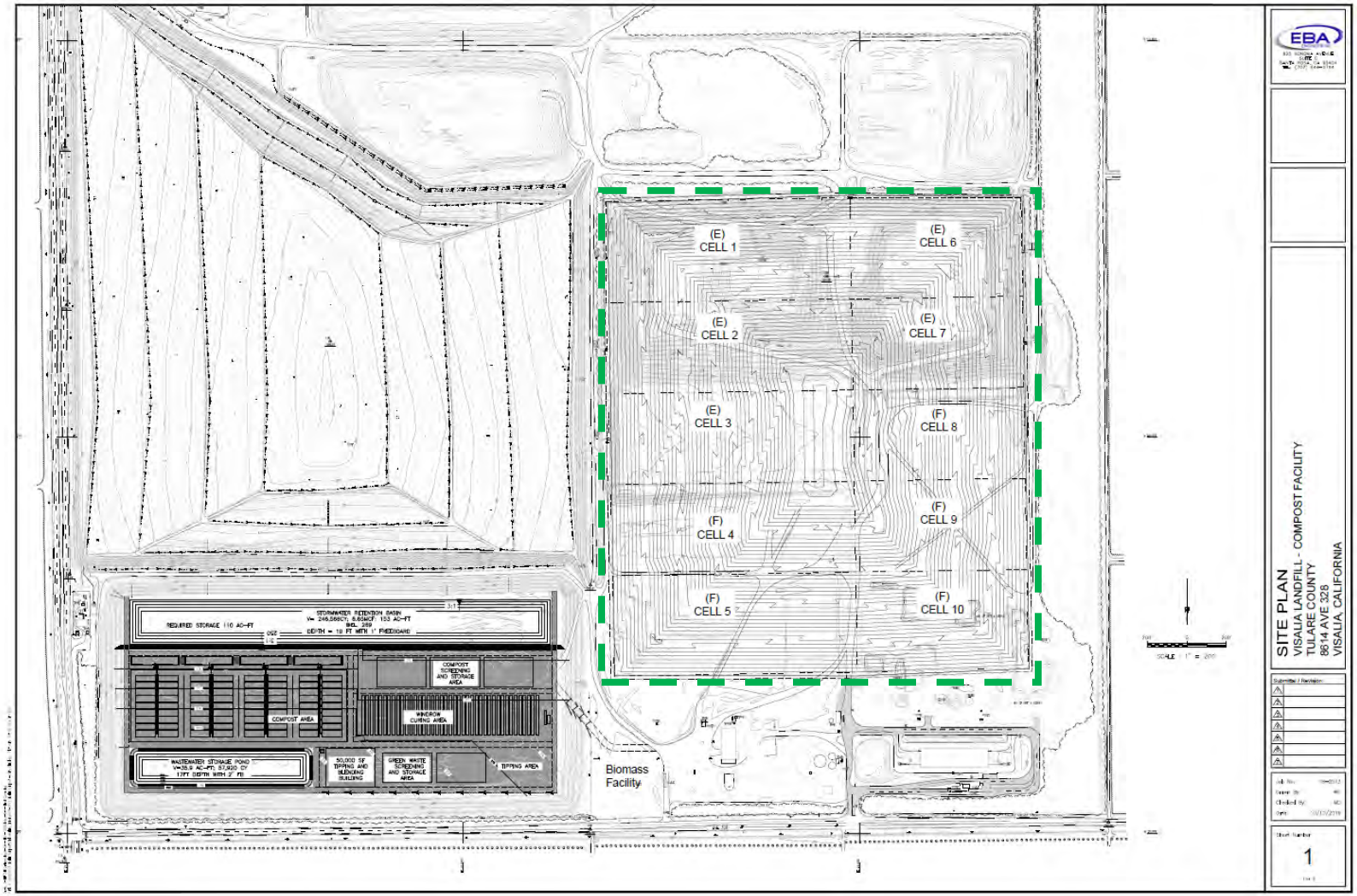


Figure 3 – Entire Visalia Landfill Site Plan
= Area of Landfilling Operations



PROJECT LOCATION AND SETTING

As noted earlier, the proposed Project will be located on the existing Visalia Landfill site on an approximately 202-acre portion of the site located at the northeast corner of Avenue 328 and Road 80, approximately one mile north of the City of Visalia. The Visalia Disposal (Landfill) Site (634 acres) is located entirely within an unincorporated area of Tulare County. The area of landfilling activities is located on APN: 077-020-026 with a physical address of 8614 Avenue 328, Visalia, California.

The proposed Project is located within the Visalia Urban Area Boundary. Both State Routes 99 and 198 are proximate to the site thereby providing regional access to the proposed Project site. Access to Route 198 is located approximately two linear miles south of the site; while access to SR 99 is located approximately four linear miles west of the site.

The site is relatively 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 will remain as such. No expansion of the existing footprint or of the existing cells where solid waste will be landfilled will occur. The site is surrounded by intensive agricultural operations. A walnut orchard located north of the landfill property was recently (May 2023) removed, while row crops are immediately to the east and south. A dairy is located immediately to the west.

POTENTIAL ENVIRONMENTAL EFFECTS

The Subsequent EIR will evaluate the probable direct and cumulative environmental impacts associated with continuation of the maximum permitted limit of 2,000 TPD of material landfilled within the 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 Subsequent EIR: Aesthetics, Agriculture and Forestry Resources, Geology & Soils, Hydrology/Water Quality, 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 SEIR:

Air Quality

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 continuation of the 2,000 TPD dedicated to landfilling and the additional 300 vehicle (haul truck) trips for the transport of organic waste to the compost and biogas facilities operations. It is anticipated that an air quality analysis 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. It is noted that the Air Quality and Greenhouse Gases Technical Report contained in Appendix "A" of the original Focused EIR (SCH No. 2021020054) will remain applicable in regards to the air quality and greenhouses gases emissions as a result of the Compost and Biogas facilities/component.

Biological Resources

Although unlikely, continued use of landfilling areas 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. It is noted that the Biological Technical Memorandum in Appendix "B" of the original Focused EIR (SCH No. 2021020054) will remain applicable in regard to biological resources for the Compost and Biogas facilities/component. Further, the conclusion contained in Chapter 3.2 Biological Resources discussion in the Original EIR (SCH No. 2021020054) in regard to the Compost and Biogas facilities/component and will be incorporated by reference in their entirety as applicable to the SEIR. Also, the findings/conclusions/determinations regarding biological resources contained in the adopted/certified EIR (SCH No. 2000051098) for the Visalia Landfill Master Development Plan will be incorporated by reference in their entirety as applicable to the SEIR.

Cultural and Tribal Cultural Resources

There are no visibly identifiable or recognizable cultural or tribal 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). As any activities relative to landfilling or the increase in vehicle trips will occur within the Visalia Landfill "footprint", a cultural resources records search will not be requested of the California Historical Resources Information System/Southern San Joaquin Valley Information Center (SSJVIC). The information contained in Appendix "C" of the original Focused EIR (SCH No. 2021020054) will remain applicable in regard to cultural and tribal cultural resources as a result of the Compost and Biogas facilities/component and will be incorporated by reference in their entirety as applicable to the SEIR. Also, the findings/conclusions/determinations regarding cultural resources contained in the adopted/certified EIR (SCH No. 2000051098) for the Visalia Landfill Master Development Plan will be incorporated by reference in their entirety as applicable to the SEIR. The SEIR will include an analysis of the proposed Project's potential to affect cultural and tribal cultural resources.

Energy

It is not anticipated that energy usage (e.g., gas, gasoline/diesel fuels) will substantially increase. The SEIR will evaluate impacts to the energy resource associated with continuation of the 2,000

TPD dedicated to landfilling activities and the additional 300 vehicle (haul truck) trips for the transport of organic waste to the compost and biogas facilities operations. The information contained in the original Focused EIR (SCH No. 2021020054) will remain applicable in regard to the energy resource as a result of the Compost and Biogas facilities/component and will be incorporated by reference in their entirety as applicable to the SEIR. The SEIR will include an analysis of the energy resource.

Greenhouse Gas Emissions

The SEIR 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. It is noted that the Air Quality and Greenhouse Gases Technical Report contained in Appendix "A" of the original Focused EIR (SCH No. 2021020054) will remain applicable in regard to greenhouse gases as a result of the Compost and Biogas facilities/component and will be incorporated by reference in their entirety as applicable to the SEIR. To reiterate, the Project is the continuation of the 2,000 TPD dedicated to landfilling activities and the additional 300 vehicle (haul truck) trips for the transport of organic waste to the compost and biogas facilities operations.

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

The SEIR will evaluate the Project's impact on regional and local transportation facilities based on a transportation analysis that will assess operational impacts such as employee trips, incoming and outgoing materials heavy-duty truck transport, access, and parking. Construction-related activities will not occur; as such, they will not be evaluated in the SEIR. Site access will be provided via one main driveway connecting to the north side of Avenue 328. It is proposed that 300 additional vehicle (haul trucks) be included to the traffic permit limits stated in the Solid Waste Facility Permit for the entire site (that is, the Visalia Landfill). As noted earlier, the Project proposes continuation of the 2,000 TPD dedicated to landfilling and the additional 300 vehicle (haul truck) trips for the transport of organic waste to the compost and biogas facilities operations will be evaluated, The information contained in the original Focused EIR (SCH No. 2021020054) will remain applicable in regard to the transportation resource as a result of the Compost and Biogas facilities/component and will be incorporated by reference in their entirety as applicable to the SEIR. Also, the findings/conclusions/determinations regarding cultural resources contained in the adopted/certified EIR (SCH No. 2000051098) for the Visalia Landfill

Master Development Plan will be incorporated by reference in their entirety as applicable to the SEIR. The SEIR will analyze outgoing vehicle trips delivering finished compost and other potential traffic impacts.

GROWTH INDUCEMENT

The SEIR 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 SEIR 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 SEIR

In accordance with the CEQA Guidelines Section 15126.6, the SEIR 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 SEIR will also identify any alternatives that were considered but rejected by the Lead Agency as infeasible and briefly explain the reasons why. The SEIR 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. July 14, 2023***. 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
Environmental Planning Division
Economic Development and Planning Branch
Tulare County Resource Management Agency
5961 South Mooney Boulevard
Visalia, CA 93277-9394
E-mail at: hguerra@tularecounty.ca.gov
Phone: (559) 624-7121

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR

MICHAEL WASHAM, ASSOCIATE DIRECTOR

MEMORANDUM

DATE: July 10, 2023

TO: Office of Planning and Research, State Clearinghouse

FROM: Hector Guerra, Chief Environmental Planner

SUBJECT: Clarification of Project Description for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility - Landfilling Operations, SCH No. 2021020054

Attention Interested Parties,

It has been brought to our intention that the Project Description provided in the Notice of Preparation (NOP) submitted to the State Clearing for the Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility - Landfilling Operations Project is not consistent with the public notice published in the Sun-Gazette on Wednesday, June 14, 2023. This inconsistency has caused some confusion to various interested parties.

The NOP includes a link to where the NOP, the newspaper notice published on June 14, 2023, and previous Project-related documents can be found on the County's website: https://tularecounty.ca.gov/rma/planning-building/environmental-planning/environmental-impact-reports/visalia-landfill-compost-and-biomass-conversion-facility/.

For clarification, as stated in the newspaper notice (which was also made available on the County website on June 13, 2023) the purpose of the Project is to increase the maximum total daily tonnage at the Project site (i.e., all area within the Landfill boundaries) from 2,000 to 3,000 tons per day and to increase maximum haul trucks received from 900 to 1,200 trucks per day. Although the NOP submitted to the State Clearinghouse did not explicitly identify the daily 1,000-ton increase, the newspaper notice, clearly included the increase as follows:

> *The Visalia Disposal (Landfill) Site is currently permitted for receiving up to 2,000 tons of municipal waste per day and are just below that threshold. If the proposed compost facility generates additional new tonnage, the County risks being in violation of that permit.* ***Therefore, the proposed project would increase permitted tonnage to 3,000 tons per day (tpd) to be split between the compost facility and the landfilling operations. The original permitted 2,000 tons will be used for solid waste disposal, and the maximum additional 1,000 tons would be used for the composting operation*** *[emphasis added]. It is anticipated that, over time, a*

maximum of 1,200 haul truck trips will be used to deliver landfill and compost material; 900 haul truck trips would deliver landfill material to the existing landfill and 300 haul truck trips would deliver compost material to the composting operation located within the Landfill's existing footprint.

Also, the Summary Form for Electronic Document Submittal Form submitted to the State Clearinghouse also clearly identifies the purpose of the project.

> *This Draft Focused Subsequent Environmental Impact Report (Subsequent EIR, SEIR, or EIR) is tiering off of the adopted/certified EIR (SCH No. 2021020054) for the Visalia Disposal (Landfill) Site – Compost and Biomass Conversion Facility ("Original EIR") project. The SEIR will address* ***two proposed updates*** *[emphasis added] to the County's current landfill permit. Currently, the Visalia Landfill is permitted for receiving up to 2,000 tons of municipal waste per day and are just below that threshold. If the proposed compost facility generates additional new tonnage, the County risks being in violation of that permit. Therefore,* ***the proposed project would increase permitted tonnage to 3,000 tons per day (tpd) to be split between the compost facility and the landfilling operations. The original permitted 2,000 tons will be used for solid waste disposal, and the maximum additional 1,000 tons would be used for the composting operation*** *[emphasis added]. It is anticipated that, over time, a maximum of 1,200 haul truck trips will be used to deliver landfill and compost material****; 900 haul truck trips would deliver landfill material to the existing landfill and 300 haul truck trips would deliver compost material to the composting operation*** *[emphasis added] located within the Landfill's existing footprint.*

To summarize, the Project consists of two updates to the existing Landfill operational permits.

- Increase the Landfill's total permitted tonnage to 3,000 tpd, by directing 2,000 tpd to the landfilling operation and the remaining 1,000 tpd to the composting operation.
- Increase the Landfill's total permitted haul trucks from 900 to 1,200 trucks per day to accommodate the additional 1,000 tpd.

For questions, comments, or additional assistance please contact:

Hector Guerra, Chief Environmental Planner
Phone: (559) 624-7121
Email: hguerra@tularecounty.ca.gov

Jessica Willis, Planner IV
Phone: (559) 624-7122
Email: jwillis@tularecounty.ca.gov

Scoping Meeting
June 29, 2023

Visalia Landfill Compost & Biomass Conversion Facility
Subsequent Focused EIR Scoping Meeting
Thursday, June 29, 2023, 1:30 p.m. RMA Main Conference Room
SCH No. 2021020054

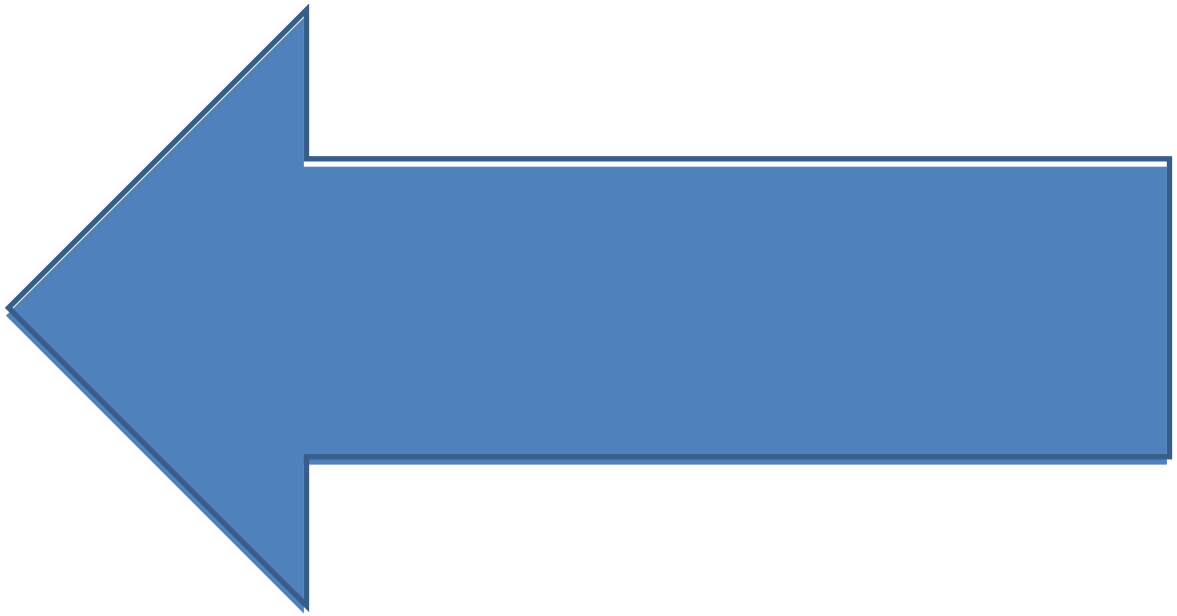
Name	Agency/Organization	Mailing Address	Phone Number	E-mail
Jessica Willis	RMA-Env. Pln.		624-7122	
Danielle Folk	RMA-Env. Pln.		624-7029	
Jonah Trevino	Solid Waste		624-7206	
Aaron Bock	RMA			
Meeting Started at 1:30. No interested parties came or called in. Ended by 1:40 pm.				

Visalia Landfill

Compost & Biomass Conversion Facility Subsequent EIR Scoping Meeting

June 29, 2023, 1:30 p.m.

RMA Main Conference Room



NOP Comments Received

NATIVE AMERICAN HERITAGE COMMISSION

ACTING CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Sara Dutschke
Miwok

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

COMMISSIONER
Wayne Nelson
Luiseño

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
Vacant

COMMISSIONER
Vacant

COMMISSIONER
Vacant

EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok, Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

June 16, 2023

Tulare County
Resource Management Agency
JUN 23 2023

Hector Guerra
Tulare County Resource Management Agency
5961 S Mooney Blvd.
Visalia, CA 93277

Re: 2021020054, Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility – Landfilling Operations, 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 (https://ohp.parks.ca.gov/?page_id=30331) 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: Cameron.Vela@nahc.ca.gov

Sincerely,

Cameron Vela

Cameron Vela
Cultural Resources Analyst

cc: State Clearinghouse

July 13, 2023

Hector Guerra
County of Tulare
Resource Management Agency
5961 S. Mooney Blvd.
Visalia, CA, 93277

Project: Notice of Preparation of a Draft Focused Subsequent Environmental Impact Report and Scoping Meeting for the Visalia Disposal Site Compost and Biomass Conversion Facility – Landfill Operations

District CEQA Reference No: 20230543

Dear Mr. Guerra:

The San Joaquin Valley Air Pollution Control District (District) has reviewed the Notice of Preparation (NOP) of a Draft Focused Subsequent Environmental Impact Report (SEIR) and the July 10th Memorandum (Memo) on the "Clarification of Project Description" from the County of Tulare (County) for the Visalia Disposal Site Compost and Biomass Conversion Facility. Per the SEIR and the Memo, the project consists of the following 1) increasing the landfill's total permitted tonnage to 3,000 Tons Per Day (TPD), with 2,000 TPD allocated to the landfilling operation and the increase 1,000 TPD to the composting operation; 2) increasing the landfill's total permitted haul trucks from 900 to 1,200 trucks per day to accommodate the additional 1,000 TPD. The Project is located 8614 Avenue 328, in Visalia, CA 93291.

The District offers the following comments regarding the Project:

1) <u>Project Related Emissions</u>

At the federal level under the National Ambient Air Quality Standards (NAAQS), the District is designated as extreme nonattainment for the 8-hour ozone standards and serious nonattainment for the particulate matter less than 2.5 microns in size (PM2.5) standards. At the state level under California Ambient Air Quality Standards (CAAQS), the District is designated as nonattainment for the 8-hour ozone, PM10, PM2.5 standards.

The documents submitted to the District does not provide sufficient information to allow the District to assess the Project's potential impact on air quality. The District recommends that a more detailed review of the Project be conducted for the Project's construction and operational emissions. The District recommends the emissions be compared to the District significance thresholds as identified in the District's Guidance for Assessing and Mitigating Air Quality Impacts: https://www.valleyair.org/transportation/GAMAQI.pdf.

1a) Construction Emissions

The District recommends, to reduce impacts from construction-related diesel exhaust emissions, the Project should utilize the cleanest available off-road construction equipment, including the latest tier equipment.

1b) Operational Emissions

Operational (ongoing) air emissions from mobile sources and stationary sources should be analyzed separately. For reference, the District's significance thresholds are identified in the District's Guidance for Assessing and Mitigating Air Quality Impacts: https://www.valleyair.org/transportation/GAMAQI.pdf.

Recommended Mitigation Measure: At a minimum, project related impacts on air quality should be reduced to levels of significance through incorporation of design elements such as the use of cleaner Heavy Heavy-Duty (HHD) trucks and vehicles, measures that reduce Vehicle Miles Traveled (VMTs), and measures that increase energy efficiency. More information on transportation mitigation measures can be found at: https://ww2.valleyair.org/media/ob0pweru/clean-air-measures.pdf

1c) Project Trip Length for HHD Truck Travel

The County's environmental review should adequately characterize and justify an appropriate trip length distance for off-site HHD truck travel to and from the Project site. Based on the following factors: 1) the Project consists of a landfill and compost operation that is expected to generate a high volume of HHD truck trips, and 2) HHD trucks generally travel further distances for distribution. The District recommends the environmental review include a discussion characterizing an appropriate trip length distance for HHD truck travel, and reflect such appropriate distance supported by project-specific factors.

1d) Recommended Model for Quantifying Air Emissions

Project-related criteria pollutant emissions from construction and operational sources should be identified and quantified. Emissions analysis should be performed using the California Emission Estimator Model (CalEEMod), which uses the most recent CARB-approved version of relevant emissions models and emission factors. CalEEMod is available to the public and can be downloaded from the CalEEMod website at: www.caleemod.com.

2) Health Risk Screening/Assessment

The County should evaluate the risk associated with the Project for sensitive receptors (residences, businesses, hospitals, day-care facilities, health care facilities, etc.) in the area and mitigate any potentially significant risk to help limit exposure of sensitive receptors to emissions.

To determine potential health impacts on surrounding receptors (residences, businesses, hospitals, day-care facilities, health care facilities, etc.) a Prioritization and/or a Health Risk Assessment (HRA) should be performed for the Project. These health risk determinations should quantify and characterize potential Toxic Air Contaminants (TACs) 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.

Health risk analyses should include all potential air emissions from the project, which include emissions from construction of the project, including multi-year construction, as well as ongoing operational activities of the project. Note, two common sources of TACs can be attributed to diesel exhaust emitted from heavy-duty off-road earth moving equipment during construction, and from ongoing operation of heavy-duty on-road trucks.

Prioritization (Screening Health Risk Assessment):
A “Prioritization” is the recommended method for a conservative screening-level health risk assessment. The Prioritization should be performed using the California Air Pollution Control Officers Association’s (CAPCOA) methodology.

The District recommends that a more refined analysis, in the form of an HRA, be performed for any project resulting in a Prioritization score of 10 or greater. This is because the prioritization results are a conservative health risk representation, while the detailed HRA provides a more accurate health risk evaluation.

To assist land use agencies and project proponents with Prioritization analyses, the District has created a prioritization calculator based on the aforementioned CAPCOA guidelines, which can be found here: http://www.valleyair.org/busind/pto/emission_factors/Criteria/Toxics/Utilities/PRIORITIZATION-CALCULATOR.xls

Health Risk Assessment:
Prior to performing an HRA, it is strongly recommended that land use agencies/ project proponents develop and submit for District review a health risk modeling protocol that outlines the sources and methodologies that will be used to perform the HRA. This step will ensure all components are addressed when performing the HRA.

A development project would be considered to have a potentially significant health risk if the HRA demonstrates that the health impacts would exceed the District's established risk thresholds, which can be found here: http://www.valleyair.org/transportation/ceqa_idx.htm.

A project with a significant health risk would trigger all feasible mitigation measures. The District strongly recommends that development projects that result in a significant health risk not be approved by the land use agency.

The District is available to review HRA protocols and analyses. For HRA submittals please provide the following information electronically to the District for review:

- HRA (AERMOD) modeling files
- HARP2 files
- Summary of emissions source locations, emissions rates, and emission factor calculations and methodologies.

For assistance, please contact the District's Technical Services Department by:

- E-Mailing inquiries to: hramodeler@valleyair.org
- Calling (559) 230-5900

Recommended Measure: Development projects resulting in TAC emissions should be located an adequate distance from residential areas and other sensitive receptors in accordance to CARB's Air Quality and Land Use Handbook: A Community Health Perspective located at https://ww2.arb.ca.gov/our-work/programs/resource-center/strategy-development/land-use-resources.

3) 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 State or National Ambient Air Quality Standards. The District recommends an AAQA be performed for the Project if emissions exceed 100 pounds per day of any pollutant.

An acceptable analysis would 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.

4) Voluntary Emission Reduction Agreement

If the project is expected to have a significant impact, the District recommends the SEIR 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-related impacts on air quality can be 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 agricultural equipment with the latest generation technologies.

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-related emissions have been mitigated. To assist the Lead Agency and project proponent in ensuring that the environmental document is

compliant with CEQA, the District recommends the environmental document includes an assessment of the feasibility of implementing a VERA.

5) Truck Routing

Truck routing involves the assessment of which roads Heavy Heavy-Duty (HHD) trucks take to and from their destination, and the emissions impact that the HHD trucks may have on residential communities and sensitive receptors.

Since there is a potential for an increase in HHD truck trips, the District recommends the County evaluate HHD truck routing patterns for the Project, with the aim of limiting exposure of residential communities and sensitive receptors to emissions. This evaluation would consider the current truck routes, the quantity and type of each truck (e.g., Medium Heavy-Duty, HHD, etc.), the destination and origin of each trip, traffic volume correlation with the time of day or the day of the week, overall Vehicle Miles Traveled (VMT), and associated exhaust emissions. The truck routing evaluation would also identify alternative truck routes and their impacts on VMT and air quality.

6) Cleanest Available Heavy-Duty Trucks

The San Joaquin Valley will not be able to attain stringent health-based federal air quality standards without significant reductions in emissions from HHD trucks, the single largest source of NOx emissions in the San Joaquin Valley. The District's CARB-approved 2018 PM2.5 Plan includes significant new reductions from HHD trucks, including emissions reductions by 2023 through the implementation of CARB's Statewide Truck and Bus Regulation, which requires truck fleets operating in California to meet the 2010 standard of 0.2 g-NOx/bhp-hr by 2023. Additionally, to meet federal air quality attainment standards, the District's Plan relies on a significant and immediate transition of HHD fleets to zero or near-zero emissions technologies, including the near-zero truck standard of 0.02 g/bhp-hr NOx established by CARB.

There is a potential for an increase in HHD trucks traveling to-and-from the project location at longer trip length distances. The District recommends that the following measures be considered by the County to reduce Project-related operational emissions:

- *Recommended Measure*: Fleets associated with operational activities utilize the cleanest available HHD trucks, including zero and near-zero (0.02 g/bhp-hr NOx) technologies.

- *Recommended Measure*: All on-site service equipment (cargo handling, yard hostlers, forklifts, pallet jacks, etc.) utilize zero-emissions technologies.

7) Reduce Idling of Heavy-Duty Trucks

The goal of this strategy is to limit the potential for localized PM2.5 and toxic air contaminant impacts associated with the idling of Heavy-Duty trucks. The diesel exhaust from idling has the potential to impose significant adverse health and environmental impacts.

Since the Project is expected to result in HHD truck trips, the District recommends the SEIR include measures to ensure compliance of the state anti-idling regulation (13 CCR § 2485 and 13 CCR § 2480) and discuss the importance of limiting the amount of idling, especially near sensitive receptors. In addition, the District recommends the County consider the feasibility of implementing a more stringent 3-minute idling restriction and requiring appropriate signage and enforcement of idling restrictions.

8) Vegetative Barriers and Urban Greening

There are residential units located east and west of the Project. The District suggests the County consider the feasibility of incorporating vegetative barriers and urban greening as a measure to further reduce air pollution exposure on sensitive receptors (e.g., residential units).

While various emission control techniques and programs exist to reduce air quality emissions from mobile and stationary sources, vegetative barriers have been shown to be an additional measure to potentially reduce a population's exposure to air pollution through the interception of airborne particles and the update of gaseous pollutants. Examples of vegetative barriers include, but are not limited to the following: trees, bushes, shrubs, or a mix of these. Generally, a higher and thicker vegetative barrier with full coverage will result in greater reductions in downwind pollutant concentrations. In the same manner, urban greening is also a way to help improve air quality and public health in addition to enhancing the overall beautification of a community with drought tolerant, low-maintenance greenery.

9) On-Site Solar Deployment

It is the policy of the State of California that renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers by December 31, 2045. While various emission control techniques and programs exist to reduce air quality emissions from mobile and stationary sources, the production of solar energy is contributing to improving air quality and public health. The District suggests that the County consider incorporating solar power systems as an emission reduction strategy for the Project.

10) 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 the proposed business or industry type and its potential to create odors, as well as 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 receptors influences the potential significance of malodorous 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 impact is 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 or air contaminant release could not be detected, or the source of the odor could not be determined.

The District is available to assist the County with information regarding specific facilities and categories of facilities, and associated odor complaint records.

11) District Rules and Regulations

The District issues permits for many types of air pollution sources, and regulates some activities that do not require permits. A project subject to District rules and regulations would reduce its impacts on air quality through compliance with the District's regulatory framework. In general, a regulation is a collection of individual rules, each of which deals with a specific topic. As an example, Regulation II (Permits) includes District Rule 2010 (Permits Required), Rule 2201 (New and Modified Stationary Source Review), Rule 2520 (Federally Mandated Operating Permits), and several other rules pertaining to District permitting requirements and processes.

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 future projects, or to obtain information about District permit requirements, the project proponents are strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (559) 230-5888.

11a) 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 (Permits Required) requires operators of emission sources to obtain an Authority to Construct (ATC) and Permit to Operate (PTO) from the District. District Rule 2201 (New and Modified Stationary Source Review) 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 ATC. For further information or assistance, the project proponent may contact the District's SBA Office at (559) 230-5888.

11b) District Rule 9510 - Indirect Source Review (ISR)

Per District Rule 9510 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.

11c) District Rule 4002 (National Emissions Standards for Hazardous Air Pollutants)

The project proponent may be required to submit a Construction Notification Form or submit and receive approval of a Dust Control Plan prior to commencing any earthmoving activities as described in Regulation VIII, specifically Rule 8021 – *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities.*

Should the project result in at least 1-acre in size, the project proponent shall provide written notification to the District at least 48 hours prior to the project proponents intent to commence any earthmoving activities pursuant to District Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities). Also, should the project result in the disturbance of 5-acres or more, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials, the project proponent shall submit to the District a Dust Control Plan pursuant to District Rule 8021 (Construction,

Demolition, Excavation, Extraction, and Other Earthmoving Activities). For additional information regarding the written notification or Dust Control Plan requirements, please contact District Compliance staff at (559) 230-5950.

The application for both the Construction Notification and Dust Control Plan can be found online at:
https://www.valleyair.org/busind/comply/PM10/forms/DCP-Form.docx

Information about District Regulation VIII can be found online at:
http://www.valleyair.org/busind/comply/pm10/compliance_pm10.htm

11d) Other District Rules and Regulations

The Project may also be subject to the following District rules: Rule 4102 (Nuisance) and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations).

12) District Comment Letter

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

For: Mark Montelongo
Program Manager

DocuSign Envelope ID: 2A8FBCDC-E359-4DE9-88A8-D604533CED7D

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

July 20, 2023

Hector Guerra
Tulare County Resource Management Agency
5961 S. Mooney Blvd
Visalia, California 93277
hguerra@tularecounty.ca.gov

Subject: Visalia Disposal Site Compost and Biomass Conversion Facility - Landfilling Operations (Project)
Notice of Preparation (NOP)
SCH No. 2021020054

Dear Hector Guerra:

The California Department of Fish and Wildlife (CDFW) received a Notice of Preparation (NOP) from the Tulare County Resource Management Agency for the above-referenced 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, CDFW appreciates 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 Fish and Game Code.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute 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

[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.

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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 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 will be required.

PROJECT DESCRIPTION SUMMARY

Proponent: Tulare County c/o Solid Waste

Objective: 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).

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

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Timeframe: n/a

COMMENTS AND RECOMMENDATIONS

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, CDFW appreciates 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 Fish and Game Code.

After reviewing the provided CEQA document, CDFW concurs with the biological resources related analyses and measures proposed in the NOP and recommends that all such measures in the NOP be carried forward into the Environmental Impact Report (EIR). CDFW has determined that the biological resource mitigation measures as currently documented in the NOP are sufficient for mitigation of potential project-related impacts to listed species. Please note that implementation of certain mitigation measures such as the relocation of listed species would constitute take of listed species under the California Endangered Species Act (CESA), and erecting exclusion fencing could also result in take of listed species under CESA. Such take of any species listed under CESA would be unauthorized if an Incidental Take Permit (ITP) pursuant to Fish and Game Code section 2081 subdivision (b) was not acquired in advance of such actions. It is recommended to consult with CDFW before any ground disturbing activities commence and to obtain an ITP if take (including capture related to salvage and relocation) cannot be avoided.

CDFW is available to meet with you ahead of draft EIR preparation to discuss potential impacts and possible mitigation measures for some or all the resources that may be analyzed in the EIR. If you have any questions, please contact Jaime Marquez, Environmental Scientist, at the address provided on this letterhead, or by electronic mail at Jaime.Marquez@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Gerald Hatler
37BF80A1646F41C...

Gerald Hatler for Julie A. Vance
Regional Manager

ec: State Clearinghouse
Governor's Office of Planning and Research
State.Clearinghouse@opr.ca.gov

From:	Schmitz, Lori@Waterboards
To:	Danielle Folk
Cc:	Pierce, Wendy@Waterboards
Subject:	RE: Clarification of Project description for Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility - Landfilling Operations Project
Date:	Monday, July 24, 2023 2:06:34 PM

This Message Is From an External Sender
This message came from outside your organization.

Danielle,

Thanks for the opportunity to review this NOP. The project does not look like it will trigger a water supply permit for our Division of Drinking Water or drinking water funding for our Division of Financial Assistance and so we will not likely require a comment letter. However, we will wait for the initial study/SEIR documents to confirm.

Lori Schmitz

Lori Schmitz
State Water Resources Control Board
Division of Financial Assistance
Special Project Review Unit
Lori.Schmitz@waterboards.ca.gov

From: Danielle Folk <DFolk@tularecounty.ca.gov>
Sent: Tuesday, July 11, 2023 4:58 PM
To: CGS Headquarters@DOC <cgshq@conservation.ca.gov>; DLRP@DOC <DLRP@conservation.ca.gov>; 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>; Gilmore, Damon@CHP <DaGilmore@chp.ca.gov>; bor@cpuc.ca.gov (bor@cpuc.ca.gov) <bor@cpuc.ca.gov>; NAHC@NAHC <NAHC@nahc.ca.gov>; Schmitz, Lori@Waterboards <Lori.Schmitz@waterboards.ca.gov>; WB-RB5F-CentralValleyFresno <CentralValleyFresno@waterboards.ca.gov>; CEQA Division (CEQA@valleyair.org) <ceqa@valleyair.org>
Cc: Jessica R Willis <JWillis@tularecounty.ca.gov>
Subject: Clarification of Project description for Visalia Disposal (Landfill) Site Compost and Biomass Conversion Facility - Landfilling Operations Project

EXTERNAL:

Good afternoon.
Please see attached memo with clarification of the Project Description provided in the NOP that was submitted to OPR State Clearinghouse June 14, 2023.

Please feel free to contact us with any questions.

Danielle Folk

Planner III
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov