Draft Environmental Impact Report

Small and Medium Composting Facilities and Operations

Statewide

October 2026



STATE OF CALIFORNIA

Gavin Newsom

Governor

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

Yana Garcia

Secretary

DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY

Zoe Heller
Director

Department of Resources Recycling and Recovery Public Affairs Office
1001 I Street (MS 22-B)
P.O. Box 4025 Sacramento, CA 95812-4025
www.calrecycle.ca.gov/Publications/
1-800-RECYCLE (California only) or (916) 341-6300

Prepared as part of contract number DRR25046.

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List of Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
AB	Assembly Bill
ACC II	Advanced Clean Cars II
ACT	Advanced Clean Trucks
ADC	alternative daily cover
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model Improvement Committee modeling system
af	acre-feet
AFV	alternative fuel vehicle
afy	acre-feet per year
AIC	alternative intermediate cover
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
APE	area of potential effect
ASP	aerated static piles
ATCM	airborne toxics control measure
AQIA	Air Quality Impact Assessment
BAT	Best Available Technology Economically Achievable
Bay Area Air District	Bay Area Air Quality Management District
BCT	Best Conventional Pollutant Control Technology
BLM	U.S. Bureau of Land Management
BMP	best management practice
Board	Board of Forestry and Fire Protection
BUG	backlight/uplight/glare
CAA	Clean Air Act
CAAA	Clean Air Act Amendments of 1990
CAAQS	California ambient air quality standards
CAFE	Corporate Average Fuel Economy

CAL FIRE	California Department of Forestry and Fire Protection
Cal OES	California Governor's Office of Emergency Services
Cal/OSHA	California Occupational Safety and Health Administration
CalEEMod	California Emissions Estimator Model
CalGreen	California Green Building Code
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CalVTP	California Vegetation Treatment Program
CASP	covered aerated static pile
CAP	climate action plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CASWA	California Safe Drinking Water Act
CBC	California Building Code
CCA	California Coastal Act
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERF	Compost Emission Reduction Factor
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFC	California Fire Code
CFR	Code of Federal Regulations
CH_4	methane
CI	carbon intensity
CIWMA	California Integrated Waste Management Act
CMP	Chaparral Management Program
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level

CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_{2e}	carbon dioxide equivalent
EOP	Emergency Operations Plan
COVID-19	coronavirus SARS-CoV-2 2019
CPUC	California Public Utilities Commission
CRHP	California Register of Historic Places
CRHR	California Register of Historical Resources
CUPA	Certified Unified Program Agency
CVFPB	Central Valley Flood Protection Board
CVFPP	Central Valley Flood Protection Plan
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationship System
cy	cubic yards
dB	decibels
dBA	A-weighted decibels
DOC	California Department of Conservation
DOT	U.S. Department of Transportation
DPM	diesel particular matter
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPAct	Energy Policy Act of 1992
EPCRA	Emergency Planning and Community Right-to-Know Act of 1986
ESA	Endangered Species Act
ESA	Environmental Site Assessment
ESHA	Environmentally Sensitive Habitat Areas
EV	electric vehicle

FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FMMP	Farmland Mapping and Monitoring Program
FPA	Z'Berg-Nejedly Forest Practice Act
FTA	Federal Transit Administration
GAMAQI	District's Guidance for Assessing and Mitigating Air Quality Impacts
GHG	greenhouse gas
GSA	groundwater sustainability agency
GSP	groundwater sustainability plans
GWMP	Groundwater Management Plan
HAP	hazardous air pollutants
HCFC	hydrochlorofluorocarbon
HCP	habitat conservation plan
HFC	hydrofluorocarbon
HFHSZ	High Fire Hazard Severity Zone
HMCD	Hazardous Materials Compliance Division
HRA	health risk assessment
HSP	Healthy Soils Program
HVAC	heating, ventilation and air conditioning
Hz	hertz
km	kilometers
in/sec	inches per second
IPCC	Intergovernmental Panel on Climate Change
lbs/day	pounds per day
LBP	lead-based paint
LCFS	Low Carbon Fuel Standard
L_{dn}	day-night level
LEA	local enforcement agency

LEED	Leadership in Energy and Environmental Design
LESA	Land Evaluation and Site Assessment
L_{eq}	equivalent continuous sound level
L_{max}	maximum sound level
LOS	level of service
LRA	Local Responsibility Areas
LST	Localized Significance Threshold
LUST	leaking underground storage tanks
LX	percentile-exceeded sound level
MACT	Maximum Achievable Control Technology
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Levels
MCV	Manual of California Vegetation
MFHSZ	Moderate Fire Hazard Severity Zone
MG	million gallons
MGD	million gallons per day
MLD	most likely descendants
MMT	million metric tons
MRF	materials recovery facility
MRZ	Mineral Resource Zone
MS4	small municipal separate storm sewer systems
MSWLF	municipal solid waste landfill
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NEHRP	National Earthquake Hazards Reduction Program
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFIP	National Flood Insurance Program
NH_3	ammonia
NMFS	National Marine Fisheries Service
NO	nitric oxide

NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOC	Notice of Completion
NOP	Notice of Preparation
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRHP	National Register of Historic Properties
NSBP	National Scenic Byways Program
NSR	New Source Review
O_3	ozone
OAL	Office of Administrative Law
OEHHA	Office of Environmental Health Hazard Assessment
OIMP	Odor Impact Minimization Plan
OPR	California Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PFC	perfluorocarbon
PM	particulate matter
PM_{10}	respirable particulate matter with aerodynamic diameter of 10 micrometers or less
$PM_{2.5}$	fine particulate matter with aerodynamic diameter of 2.5 micrometers or less
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
ppb	parts per billion
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
PS	potentially significant impact
RAQS	Regional Air Quality Strategy
REA	Registered Environmental Assessor
rms	root mean square
ROG	reactive organic gases
RPI	Rare Plant Inventory

RWQCB	regional water quality control boards
SARA Title III	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SDAPCD	San Diego County Air Pollution Control District
SDWA	Safe Drinking Water Act
SF_6	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLCP	short-lived climate pollutant
SLT	Screening-Level Threshold
SMARA	Surface Mining and Reclamation Act
SO_2	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasure
SPFC	State Plan of Flood Control
SPL	sound pressure level
SRA	State Responsibility Areas
SRIA	Standardized Regulatory Impact Assessment
State	State of California
SU	Significant and Unavoidable
SWIS	Solid Waste Information System
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
SWRCB-DDW	State Water Resources Control Board Division of Drinking Water
TAC	toxic air contaminant
T-BACT	toxics best available control technology
TCP	timberland conversion permit
THP	timber harvesting plan
TMDL	total maximum daily load

TNM	Traffic Noise Model
TPZ	Timberland Production Zones
TRU	transport refrigeration unit
TTC	temporary traffic control
TWh	trillion watt hours
USC	U.S. Code
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geologic Survey
UWMP	Urban Water Management Plan
UWMPA	Urban Water Management Planning Act
VdB	vibration decibels
VHFHSZ	Very High Fire Hazard Severity Zone
VMP	Vegetation Management Program
VMT	vehicle miles traveled
VOC	volatile organic compound
WDR	waste discharge requirements
WUI	wildland urban interface
ZEV	zero emissions vehicle
ZNE	zero net energy

Executive Summary

ES.1 Introduction

This Executive Summary is provided as required by the California Environmental Quality Act Guidelines (State CEQA Guidelines) Section 15123. It gives an overview of the Small and Medium Composting Facilities and Operations Program Draft Environmental Impact Report (EIR), which the California Department of Resources Recycling and Recovery (CalRecycle) prepared as directed by Senate Bill (SB) 1046 (Laird, Chapter 452, Statutes of 2024).

Section 15123(a) requires that an EIR include a brief summary of the proposed action and its environmental impacts, written as clearly and simply as reasonably practical. Section 15123(b) also requires the summary to:

1. Identify each significant environmental effect and the mitigation measures and alternatives that could reduce or avoid that effect
2. Identify areas of controversy known to the Lead Agency, including issues raised by agencies and the public
3. Identify issues that remain to be resolved, such as the selection of alternatives and decisions about whether or how to mitigate significant effects

This Executive Summary provides the information required under CEQA. Table ES-1 at the end of this section summarizes potential environmental impacts, their level of significance without mitigation measures, the recommended mitigation measures, and their level of significance after mitigation.

ES.2 Summary Description of the Project

Project Location

The program area includes the State of California. Existing and permitted composting facilities and operations can be found in CalRecycle's Solid Waste Information System (SWIS) database. However, the exact locations of future small and medium compost facilities cannot be known yet. Each future project will depend on local land-use decisions, community preferences, and economic conditions. Because of these uncertainties, predicting where new facilities and operations will be approved, or what they will look like, would be speculative. For this reason, this EIR evaluates the potential for new small and medium composting facilities and operations to be located anywhere in California.

Background

SB 1383 (Lara, Chapter 395, Statutes of 2016) directed CalRecycle, in consultation with California Air Resources Board (CARB), to develop a series of goals (and associated regulations) to reduce statewide disposal of organic waste by 50% of 2014 levels by 2020 and 75% by 2025. The law also set a goal to recover at least 20% of edible food in the organic waste stream by 2025. CalRecycle certified an EIR in 2019 evaluating the expansion of composting facilities, and other types of waste reduction facilities in California, needed to meet these goals.

In 2024, CalRecycle evaluated how small and medium compost facilities are permitted across the state. Small facilities can have up to 5,000 cubic yards [cy] on site at one time, and medium facilities have between 5,000 and 12,500 cy onsite at one time. These facilities and operations may accept agricultural, green, and food

material (including vegetative food material). The study found that permitting practices vary widely throughout the state: some facilities and operations were treated as non-discretionary (i.e., not a project under CEQA), while others required CEQA documents such as a Notice of Exemption, Negative Declaration, or Mitigated Negative Declaration (CalRecycle 2026). This historic approach has led to challenges associated with permitting and development, following initial approval by the local jurisdiction.

Since 2021, local enforcement agencies (LEA) have permitted or authorized 10 small and 18 medium composting facilities/operations, recorded in CalRecycle's SWIS database. To meet and exceed SB 1383's statewide organics-reduction targets, additional small and medium composting facilities and operations will likely be needed, especially in more rural parts of California.

Program Objectives

The objectives of the program are to:

- Provide a consistent approach for streamlining approval of small and medium composting facilities and operations throughout the state.
- Support the development of small and medium composting facilities and operations that accept agricultural, food, and green materials.
- Help California achieve and maintain the SB 1383 goal of reducing statewide organic waste disposal by 75% below 2014 levels.

Program Summary

CalRecycle has prepared a statewide EIR to assist in the process to approve, site, and develop small and medium composting facilities and operations throughout the State of California, as required by the Organic Waste Reduction Bill (SB 1046, Laird, Chapter 452, Statutes of 2024). The EIR is also intended to provide an opportunity that will allow for a more consistent approach to siting and permitting (consistent with Section 15168 of the State CEQA Guidelines). The EIR may serve as the first-tier analysis for later, more detailed, site-specific environmental reviews as necessary. Lead agencies and responsible agencies such as local land use and planning agencies, local enforcement agencies, and CalRecycle may use the CEQA document in considering subsequent discretionary actions. The program would allow for the development of additional small and medium composting facilities and operations within the state.

ES.3 Intended Uses of the EIR

This document is a program-level EIR prepared pursuant to State CEQA Guidelines Section 15168. A program EIR evaluates a series of related actions governed by the same authority that have similar types of environmental impacts.

Preparing a program EIR allows for a more comprehensive consideration of effects than would be practical in separate EIRs on individual actions and allows for consideration of cumulative impacts that might be missed on a case-by-case basis. As described in Section 15168(c) of the State CEQA Guidelines, future projects that are consistent with this program can rely on this EIR to inform whether additional CEQA documentation is needed.

If the decision-making agency finds that, pursuant to Section 15162 of the State CEQA Guidelines, that a project related to the proposed regulation is within the scope of this EIR, that no new or substantially more severe

significant impacts would occur, and that no new mitigation measures would be required, no additional CEQA documentation would be needed. Under this circumstance, a Notice of Determination would state that this EIR adequately covers the environmental effects of the proposed project. The lead agency must adopt all feasible mitigation measures identified in this EIR for any significant or potentially significant impacts. effects on the environment. Ifa future and related project does not fully fit within the scope of this EIR, additional CEQA analysis may be required, such as a mitigated negative declaration or project-specific EIR.

CalRecycle provides technical assistance to LEAs, which enforce state solid waste regulations in local jurisdictions pursuant to CalRecycle certification. The goal of this Draft EIR is to give local agencies a consistent environmental foundation they can use when permitting small and medium composting facilities and operations statewide.

ES.4 Environmental Impacts and Recommended Mitigation Measures

This EIR evaluates the physical environmental effects of the project. CalRecycle, as the lead agency for this EIR, is responsible for certifying the EIR and adopting the Mitigation Monitoring and Reporting Program, Findings of Fact, and (if necessary) a Statement of Overriding Considerations. After the public-review period ends and the Final EIR is completed, CalRecycle will determine whether the EIR adequately evaluates the environmental impacts of the project.

Table ES-1 at the end of this chapter summarizes the environmental impacts and identifies the significance of each impact before mitigation, the recommended mitigation measures, and the significance after mitigation. More information regarding the significance of each impact and associated mitigation measures (where proposed) is presented in Chapter 3, “Environmental Impacts and Mitigation Measures” of this EIR for each issue area.

Significant and Unavoidable Impacts and Cumulative Impacts

State CEQA Guidelines Section 21100(b)(2)(A) requires identifying any significant impacts that cannot be avoided if the project is implemented. Chapter 3, “Environmental Impacts and Mitigation Measures,” provides a description of the potential environmental impacts arising from the implementation of the program and recommends various mitigation measures to reduce impacts, to the extent feasible. Chapter 4, “Cumulative Impacts,” describes whether the incremental effects of the project are significant when viewed in connection with the effects of past projects, current projects, and reasonably foreseeable future projects. After implementation of the recommended mitigation measures, the impacts of the program would be reduced to a less-than-significant level, except for impacts related to:

- Aesthetics
- Air quality
- Archaeological, historical, and Tribal cultural resources
- Biological resources
- Noise
- Transportation

Cumulative impacts related to aesthetics; air quality; archaeological, historical, and Tribal cultural resources; biological resources; noise; and transportation would also be significant and unavoidable as a result of implementation of the program (refer to Chapter 4, "Cumulative Impacts" for further information.)

ES.5 Alternatives to the Proposed Project

State CEQA Guidelines Section 15126.6, as amended, mandates that all EIRs include a comparative evaluation of the proposed project with alternatives to the project that are capable of attaining most of the project's basic objectives but would avoid or substantially lessen any of the significant effects of the project. CEQA requires an evaluation of a "range of reasonable" alternatives, including the "no project" alternative.

The following provides brief descriptions of the alternatives evaluated in this Draft EIR. Table ES-2 presents a comparison of the environmental impacts between the alternatives and the project.

- **Alternative 1: No Project Alternative.** Under the No Project alternative (Alternative 1), small and medium-sized facilities would be constructed at the same rate as has been noted in the Project Description of this EIR. The average of about 5.5 facilities permitted per year would apply to Alternative 1 as compared to 7 per year that is estimated for the project. Thus, the amount of land affected under the No Project alternative would be about 80% of what would experience impacts under the project. In addition, the facilitation of permitting (as mandated by SB 1046) would not be achieved.
- **Alternative 2: Reduced Program with Location Limitations.** Under this alternative, the program would limit the permitting of small and medium composting facilities and operations to existing solid waste disposal facilities, transfer stations, and grazing land.
- **Alternative 3: Removal of Food Waste as an Allowable Feedstock.** Under this alternative, food waste (beyond vegetative food waste) would not be considered an allowable feedstock for small and medium composting facilities and operations.

The State CEQA Guidelines Section 15126.6 states that an EIR should identify the "environmentally superior" alternative. "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." As shown in the Executive Summary Chapter of this EIR, there would be significant and unavoidable impacts associated with the program. These impacts are related to aesthetics; air quality; archaeological, historical, and Tribal cultural resources; biological resources; geology and soils; hazards; noise; and transportation. Alternative 2 would result in lesser impacts than the program with respect to aesthetics, agriculture and forestry resources, biological resources, and cultural resources impacts. However, this alternative could also increase criteria air pollutant emissions, GHG emissions, and vehicle miles travelled (VMT) as it may result in greater travel distances between feedstock sources, as well as finished compost destinations. The environmentally superior alternative would be Alternative 2, although it would not achieve the program objectives to the degree of the program, as evaluated in this EIR. Refer to Chapter 6, "Alternatives" for further clarification.

ES.6 Areas of Controversy and Issues to be Resolved

CalRecycle released a Notice of Preparation (NOP) on July 22, 2026, for a minimum 30-day public review and comment period and held a virtual public scoping meeting on August 6, 2026. Ten comment letters were received from one state agency, seven local agencies, three organizations, and one individual. Key areas of concern include:

- Odors
- Toxic air contaminants
- Potential wildfire risks
- Nuisance impacts (such as truck traffic)

All substantive comments received during scoping are addressed in this Draft EIR.

Table ES-1. Summary of impacts and mitigation measures

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
3.1 Aesthetics			
Impact 3.1-1: Substantial Adverse Effect on a Scenic Vista or Visual Character or Quality of Public Views, or Damage to Scenic Resources in a State Scenic Highway from Construction of New Composting Facilities and Operations	Potentially Significant	Mitigation Measure 3.1-1: Implement Site-Specific Design Features and Visual Screening During Construction	Significant and Unavoidable
Impact 3.1-2: Long-Term, Substantial Degradation of a Scenic Vista or Visual Character or Quality of Public Views, or Damage to Scenic Resources in a State Scenic Highway from Operation of New Composting Facilities and Operations	Potentially Significant	Mitigation Measure 3.1-2: Implement Site-Specific Design Features and Visual Screening During Operation	Significant and Unavoidable
Impact 3.3-3: Conflict with Applicable Zoning and Other Regulations Governing Scenic Quality	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.1-4: Temporary or Permanent New Sources of Substantial Light or Glare That Would Adversely Affect Views in Areas near Project Sites	Potentially Significant	Implement Mitigation Measure 3.1-2. Mitigation Measure 3.1-4: Implement Light Reduction Measures	Less Than Significant
3.2 Agriculture and Forestry Resources			
Impact 3.2-1: Conversion of Important Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a Nonagricultural Use or to a Use That Conflicts with Agricultural Zoning or a Williamson Act Contract	Potentially Significant	Mitigation Measure 3.2-1: Avoid Important Farmland and Demonstrate Consistency with Agricultural Zoning and Williamson Act Contracts	Less Than Significant
Impact 3.2-2: Conflict with Zoning for Forest Land or Timberland, Including Timberland Protection Zones, or Result in Loss or Conversion of Forest Land	Potentially Significant	Mitigation Measure 3.2-2a: Avoid Timberland and Timberland Production Zone Lands	Less Than Significant

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		Mitigation Measure 3.2-2b: Minimize Tree Removal and Replace Trees Removed from Forest Land	
Impact 3.2-3: Otherwise Result in Conversion of Important Farmland to Nonagricultural Use or Forest Land to Non-Forest Use	Potentially Significant	Mitigation Measure 3.2-3: Implement Agriculture and Forest Resource Protection Measures During Construction and Operation of New Small or Medium Composting Facilities/Operations	Less Than Significant
3.3 Air Quality			
Impact 3.3-1: Compliance with Air Quality Management Plans	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.3-2: Short-Term Construction-Related Emissions of Reactive Organic Gases (ROG), Nitrous Oxides (NO_X), Particulate Matter (PM_{10}), and Fine Particulate Matter ($PM_{2.5}$)	Potentially Significant	Mitigation Measure 3.3-1: Conduct Project-Specific Localized Air Quality Analyses for Facilities with Receptors Located Within 165 Feet of Construction Activities	Significant and Unavoidable
Impact 3.3-3: Long-Term Operational Emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$	Potentially Significant	Mitigation Measure 3.3-3: Assess Site-Specific Emissions and Implement All Feasible On- and Off-Site Measures to Reduce Operation-Related Emissions	Significant and Unavoidable
Impact 3.3-4: Exposure of Sensitive Receptors to Mobile-Source Carbon Monoxide (CO) Concentrations	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.3-5: Exposure of Sensitive Receptors to Toxic Air Contaminant (TAC) Emissions	Potentially Significant	Mitigation Measure 3.3-2: Conduct a Health Risk Assessment and Implement On Site TAC-Reducing Measures	Significant and Unavoidable
Impact 3.3-6: Exposure of Sensitive Receptors to Odors	Less Than Significant	No mitigation is required.	Not Applicable
3.4 Archaeological, Historic, and Tribal Cultural Resources			

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact 3.4-1: Substantial Adverse Change in the Significance of Historical Resources	Potentially Significant	Mitigation Measure 3.4-1: Avoid or Treat Adverse Changes to Significant Historical Resources	Significant and Unavoidable
Impact 3.4-2: Substantial Adverse Change to the Significance of Archaeological Resources	Potentially Significant	Mitigation Measure 3.4-2: Avoid or Treat Adverse Changes to Significant Archaeological Resources	Less Than Significant
Impact 3.4-3: Substantial Adverse Change to the Significance of Tribal Cultural Resources	Potentially Significant	Mitigation Measure 3.4-3: Avoid or Treat Adverse Changes to Significant Tribal Cultural Resources	Significant and Unavoidable
Impact 3.4-4: Substantial Adverse Change or Disturbance to Human Remains	Less Than Significant	No mitigation is required.	Not Applicable
3.5 Biological Resources			
Impact 3.5-1: Adversely Affect Special-Status Species, Either Directly or Through Habitat Modification	Potentially Significant	Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey Mitigation Measure 3.5-1b: Conduct Special-Status Plant Surveys and Implement Avoidance and Minimization Measures Mitigation Measure 3.5-1c: Conduct Preconstruction Surveys for Special-Status Species and Implement Avoidance Measures	Significant and Unavoidable
Impact 3.5-2: Adversely Affect Riparian Habitat, Aquatic Resources, or Other Sensitive Natural Communities through Direct Removal, Filling, Hydrological Interruption, Vegetation Modification, or Other Methods	Potentially Significant	Implement Mitigation Measure 3.5-1a. Mitigation Measure 3.5-2a: Avoid Environmentally Sensitive Habitat Areas Mitigation Measure 3.5-2b: Avoid and Mitigate for Unavoidable Loss of Sensitive Natural Communities	Significant and Unavoidable

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact 3.5-3: Interfere With the Movement of Wildlife Species Through Established Wildlife Corridors, or Impede the Use of Wildlife Nursery Sites	Potentially Significant	Implement Mitigation Measure 3.5-1a. Mitigation Measure 3.5-3: Avoid Wildlife Nursery Sites	Less Than Significant
Impact 3.5-4: Conflict with Adopted Local or Regional Conservation Plans	Less Than Significant	No mitigation is required.	Not Applicable
3.6 Energy			
Impact 3.6-1: Wasteful, Inefficient, or Unnecessary Consumption of Energy during Project Construction or Operation	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.5-2: Conflict with or Obstruction of a State Plan for Renewable Energy or Energy Efficiency	Less Than Significant	No mitigation is required.	Not Applicable
3.7 Geology and Soils			
Impact 3.7-1: Potential Substantial Adverse Effects Involving Rupture of a Known Earthquake Fault, Strong Seismic Ground Shaking, or Other Seismic Effects	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.7-2: Substantial Erosion or Loss of Topsoil	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.7-3: Placement of Small and Medium Composting Facilities and Operations in Areas of Expansive or Unstable Soils, or Creation of Instability as a Result of the Program	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.7-4: Have Soils Incapable of Adequately Supporting the Use of Septic Tanks or Alternative Wastewater Disposal Systems	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.7-5: Destruction of a Unique Paleontological Resource or Site	Potentially Significant	Mitigation Measure 3.7-5: Conduct Site-Specific Evaluation and Redesign or Avoid Significant Paleontological Resources	Less Than Significant

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact 3.7-6: Loss of Availability of a Known Valuable Mineral Resource or a Locally Important Mineral Resource Recovery Site	Less Than Significant	No mitigation is required.	Not Applicable
3.8 Greenhouse Gas Emissions			
Impact 3.8-1: Conflict with Applicable Plans, Policies, or Regulations of an Agency Adopted for the Purpose of Reducing Emissions of GHGs	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.8-2: Short-term Construction-Related and Long-Term Operation-Related GHG Emissions	Less Than Significant	No mitigation is required.	Not Applicable
3.9 Hazards and Hazardous Materials			
Impact 3.9-1: Significant Health Hazards from the Use of Hazardous Materials	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.9-2: Generation of Vectors and Pathogens That Would Exceed Regulatory Thresholds and Create a Significant Health or Environmental Hazard	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.9-3: Potential Hazards Associated with the Release of Hazardous Materials from the Siting of Composting Facilities and Operations within One-Quarter Mile of a School	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.9-4: Significant Hazards to the Public or Environment from Disturbance to Known Hazardous Material Sites	Potentially Significant	Mitigation Measure 3.9-4: Identify and Avoid Known Hazardous Waste Sites During Construction of New Composting Facilities and Operations	Less Than Significant
Impact 3.9-5: Safety Hazard from Siting a Composting Facility/Operation Within 5 Miles of an Airport	Potentially Significant	Mitigation Measure 3.9-5: Apply Federal Regulations for MSWLFs to Composting Facilities and Operations Within 5 Miles of an Airport	Less Than Significant

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact 3.9-6: Impaired Implementation of or Physical Interference with an Adopted Emergency Response Plan or Emergency Evacuation Plan	Potentially Significant	Implement Mitigation Measure 3.14-1.	Less Than Significant
3.10 Hydrology and Water Quality			
Impact 3.10-1: Violate of Any Water Quality Standards or Waste Discharge Requirements, Substantially Degrade Surface Water or Groundwater Quality, or Conflict with the Implementation of a Water Management Plan during Construction	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.10-2: Violate Any Water Quality Standards or Waste Discharge Requirements, Substantially Degrade Surface Water or Groundwater Quality, or Conflict with the Implementation of a Water Management Plan During Compositing Operations	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.10-3: Substantial Decrease in Groundwater Supplies or Substantial Interference with Groundwater Recharge Such That the Project May Impede Sustainable Groundwater Management of the Basin	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.10-4: Substantial Alteration of the Existing Drainage Pattern of the Site or Area	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.10-5: Release of Pollutants as a Result of Project Inundation	Less Than Significant	No mitigation is required.	Not Applicable
3.11 Land Use and Planning			
Impact 3.11-1: Conflict with a Land Use Plan, Policy, or Regulation Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect	Less Than Significant	No mitigation is required.	Not Applicable

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
3.12 Noise and Vibration			
Impact 3.12-1: Short-Term Construction Noise Effects	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.12-2: Long-Term Operations Noise Effects	Potentially Significant	Mitigation Measure 3.12-2a: Conduct a Project-Specific Traffic Impact Analysis and Implement Recommended Measures Mitigation Measure 3.12-2b: Conduct a Site-Specific Operational Noise Analysis and Implement Required Noise Measures	Significant and Unavoidable
Impact 3.12-3: Generate Substantial Vibration During Construction and Operation	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.12-4: Expose People Residing or Working Within 2 Miles of an Airport to Excessive Noise	Less Than Significant	No mitigation is required.	Not Applicable
3.13 Public Services			
Impact 3.13-1: Adversely Impact Acceptable Service Ratios, Response Times, or Other Performance Objectives for Fire Protection and Police Services	Less Than Significant	No mitigation is required.	Not Applicable
3.14 Transportation			
Impact 3.14-1: Construction-Related Traffic Impacts	Potentially Significant	Mitigation Measure 3.14-1: Construction Traffic Management Plan	Less Than Significant
Impact 3.14-2: Substantial Increase in Hazards from a Geometric Design Feature (e.g., Sharp Curves or Dangerous Intersection) or Incompatible Uses	Less Than Significant	No mitigation is required.	Not Applicable

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact 3.14-3: Inadequate Emergency Access	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.14-4: Reasonably Anticipated Increase in Vehicle Miles Traveled	Potentially Significant	No feasible mitigation is available.	Significant and Unavoidable
3.15 Utilities and Service Systems			
Impact 3.19-1: Require or Result in New or Expanded Water, Wastewater Treatment, Stormwater Drainage, Electric Power, Natural Gas, or Telecommunications Facilities	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.15-2: Increase Demand for Water Supplies	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.15-3: Increase Demand for Wastewater Treatment	Less Than Significant	No mitigation is required.	Not Applicable
3.16 Wildfire			
Impact 3.16-1: Impair Planned Wildfire Emergency Response or Evacuation	Potentially Significant	Implement Mitigation Measure 3.14-1	Less Than Significant
Impact 3.16-2: Substantially Worsen Wildfire Risk Related to Infrastructure Development	Less Than Significant	No mitigation is required.	Not Applicable
Impact 3.16-3: Substantial Risk Related to Postfire Flooding or Landslides	Less Than Significant	No mitigation is required.	Not Applicable

1 Introduction

This Draft Environmental Impact Report (EIR) evaluates the environmental impacts of the proposed program, which provides an opportunity for a streamlined and consistent regulatory pathway for small and medium composting facilities and operations. The California Department of Resources Recycling and Recovery (CalRecycle) directed the preparation of this Draft EIR in accordance with Senate Bill (SB) 1046, the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000 et seq.), and the State CEQA Guidelines (California Code of Regulations, Division 7, Title 14, Section 15000 et seq.).

This chapter of the Draft EIR provides information on:

- The project (the proposed program) requiring environmental analysis
- The type, purpose, and intended uses of the Draft EIR
- The scope and content of the Draft EIR
- Agency roles and responsibilities
- The EIR process
- The organization of the Draft EIR

1.1 Project Requiring Environmental Analysis

This section presents a synopsis of the program's characteristics. For a detailed description, see Chapter 2, "Project Description."

SB 1383 (Lara, Chapter 395, Statutes of 2016) directed CalRecycle, in consultation with the California Air Resources Board, to adopt regulations to reduce statewide disposal of organic waste by 50% from 2014 levels by 2020 and by 75% by 2025. The law also established a goal to recover at least 20% of edible food in the organic waste stream by 2025. CalRecycle certified an EIR in 2019 evaluating the expansion and development of large composting facilities needed to meet these goals.

In 2024, CalRecycle evaluated current practices and permitting for small composting operations (no more than 5,000 cubic yards [cy] at one time, which equates to a throughput of 10,000 tons per year [tpy] or less) and medium facilities (5,000 to 12,500 cy at one time, which equates to a throughput of 10,000 to 25,000 tpy) that accept agricultural, food, and green material. To help ensure California meets and exceed SB 1383 targets, it is reasonably foreseeable that additional small and medium composting facilities and operations will be needed, especially in rural areas.

In September 2024, the Legislature passed SB 1046 (Laird, Chapter 452, Statutes of 2024), which requires CalRecycle, as the lead agency under CEQA, to develop and certify an EIR that local jurisdictions can use as a streamlining tool when considering, planning, developing, and operating small and medium composting facilities and operations. Under the reasonably foreseeable condition for this tool, 15 small and 25 medium composting facilities and operations are expected to be developed by 2034, with a total of 30 small and 50 medium facilities overall.

1.2 Type, Purpose, and Intended Uses of This Draft EIR

This document is a program EIR prepared in accordance with CEQA Guidelines Section 15168. A program EIR may be prepared on a series of actions that can be characterized as one large project. These actions may involve general criteria governing the conduct of a continuing program or individual activities carried out under the same statutory or regulatory authority, and that have generally similar environmental effects that can be mitigated in similar ways.

CEQA requires preparation of an EIR whenever it can be fairly argued, based on substantial evidence, that a proposed project may result in a significant environmental impact. An EIR can also be required by legislation, which is the case with SB 1046. An EIR is an informational document used to inform public agency decision-makers and the public of a project's significant environmental impacts, identify ways to minimize those impacts, and describe reasonable alternatives that could feasibly attain most of the project's basic objectives while substantially lessening or avoiding its significant impacts. Public agencies must consider the information presented in the EIR when determining whether to approve a project.

In addition to analyzing environmental impacts, this Draft EIR identifies a reasonable range of alternatives that would substantially reduce or avoid potential adverse environmental impacts. The Draft EIR also identifies mitigation measures, which - if adopted - would be implemented as part of the program to reduce and minimize the program's physical environmental effects to the extent feasible.

Preparing a program EIR allows for a more comprehensive consideration of environmental effects than would be practical in separate EIRs for individual actions and allows for consideration of cumulative impacts that might be overlooked on a case-by-case basis. As noted in CEQA Guidelines Section 15168(c), later proposed activities consistent with the program would be examined in light of the information in this EIR to determine whether additional environmental documentation is required. If the decision-making agency finds, pursuant to CEQA Guidelines Section 15162, that 1) a project related to the program is within the scope of this EIR; 2) no new or substantially more severe significant impacts would occur; and 3) no new mitigation measures would be required, then no additional CEQA documentation would be needed. Under this circumstance, a Notice of Determination would be filed stating this EIR adequately covers the environmental effects of the later activity/project. Under this CEQA compliance approach, the lead agency must adopt all feasible mitigation measures identified in this EIR for significant or potentially significant impacts. If a future project is not entirely within the scope of this program EIR, additional CEQA analysis, including preparation of a mitigated negative declaration or project-specific EIR, may be required.

It is important to understand the extent of CalRecycle's authority within the context of this EIR. CalRecycle provides technical assistance to Local Enforcement Agencies (LEA) that enforce state solid waste law in local jurisdictions pursuant to CalRecycle certification. CalRecycle promulgates the state regulations governing the issuance of solid waste facility permits by LEAs, with CalRecycle, for new or expanded solid waste facilities. Unlike local entitlements issued under broad police power, state solid waste facility permits are limited to controlling the design and operation of solid waste facilities through enforcement of state minimum standards for handling, transfer, composting, transformation, and disposal, in accordance with PRC Division 30 and associated regulations. Permit conditions enforceable through these permits are restricted in scope. For example, PRC Sections 43020 and 43021 prohibit enforcing conditions related to air quality or water quality. PRC Section 43101 further prohibits CalRecycle from issuing conditions that overlap with another state agency's authority. As a result PRC Section 44012 limits CalRecycle and LEAs to imposing operational, not preoperational,

conditions. Operational conditions must be limited to those that protect public health, safety, and the environment within the authority of CalRecycle and LEAs. As a result, solid waste facility permit conditions may not regulate issues such as tribal cultural resources.

Additionally, CalRecycle does not have general land-use authority to approve facilities or structures developed in response to the adoption of the proposed regulation. Local jurisdictions exercise land-use authority through entitlements such as conditional use permits. Conditions that cannot be included in state solid waste facility permits may be addressed in local entitlements.

As with any proposed development, small and medium composting facilities and operations would be reviewed individually by local jurisdictions in response to applications from project proponents. The goal of this EIR is to provide a consistent pathway by which local agencies can consider the environmental effects of their decisions as part of this program and establish a consistent process for future permits related to small and medium composting facilities and operations.

1.3 Scope and Content of This Draft EIR

This Draft EIR evaluates 16 environmental issue areas as well as other CEQA-required issues such as cumulative impacts, growth-inducing impacts, significant unavoidable impacts, and alternatives:

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Archaeological, Historical, and Tribal Cultural Resources
- Biological Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions and Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise and Vibration
- Public Services
- Transportation
- Utilities and Service Systems
- Wildfire

Under the CEQA statutes and the State CEQA Guidelines, a lead agency may limit discussion of environmental effects in an EIR when those effects are not considered potentially significant (PRC Section 21002.1[e]; State CEQA Guidelines Sections 15128, 15143). Information used to determine potentially significant impacts came from reviews of existing small and medium composting facilities and operations; applicable planning documents and CEQA documentation; public and agency input; comments submitted during the scoping process; and comments received on the Notice of Preparation (NOP) (see Appendix A of this Draft EIR).

The NOP was distributed on July 22, 2026, for a minimum 30-day public review and comment period. It was submitted to the State Clearinghouse and distributed to responsible agencies, interested parties, and organizations. A two-part virtual public scoping meeting was held on August 6, 2026, at 3 p.m. and 6 p.m. The purpose of the NOP and the meeting was to notify interest holders that an EIR was being prepared and to request comments on its scope and content. Based on a review of available information and the scoping

process, each of the environmental issue areas identified in Section 1.3 will be evaluated in this Draft EIR. More detail on the NOP and scoping process is provided in Section 1.5, "EIR Process."

1.4 Agency Roles and Responsibilities

1.4.1 Lead Agency

CalRecycle is the lead agency responsible for compliance with SB 1046 and ensuring CEQA requirements are met. After the public review process is complete, CalRecycle will determine whether to certify the EIR (see State CEQA Guidelines Sections 15090).

1.4.2 Responsible and Trustee Agencies

Under CEQA, responsible agencies are state and local public agencies, other than the lead agency, that must carry out or approve a project or a portion of a project addressed in an EIR. Trustee agencies are state agencies with legal jurisdiction over natural resources affected by a project that are held in trust for the people of California.

Several state and local agencies may have responsibility or jurisdiction over components of small and medium composting facilities and operations under the program. Their responsibilities may include regulatory permitting (e.g., Streambed Alteration Agreement or stationary source permitting) or other approvals needed before certain project elements can be implemented. Chapter 2, "Project Description," identifies these agencies, their potential responsibilities, and the reasons for their involvement.

This EIR and any future environmental analysis that relies on it are expected to satisfy CEQA requirements for responsible and trustee agencies.

1.5 EIR Process

1.5.1 Notice of Preparation and Scoping

The NOP was distributed on July 22, 2026, to responsible agencies and interest holders. It was also posted online at https://calrecycle.ca.gov/swfacilities/permitting/ceqa/. The NOP notified recipients that an EIR was being prepared and invited comments on its scope and content. The NOP and responses are provided in Appendix A. CalRecycle also held a public scoping meeting on August 6, 2026, to share information about the program and to provide an opportunity for agencies and the public to submit comments. A total of 12 comment letters were received during the public review period: one from a state agency, seven from local agencies, three from organizations or companies, and one from an individual.

1.5.2 Draft EIR

In accordance with CEQA Guidelines Sections 15087 and 15105, this Draft EIR is being circulated for a 45-day public review and comment period. During this time, comments on environmental issues may be submitted to the lead agency by the public, organizations, and government agencies.

To announce the availability of this Draft EIR, CalRecycle issued a Notice of Availability (NOA) on October 2, 2026, which initiated the 45-day public comment period. The NOA was electronically submitted to the State Clearinghouse and posted on CalRecycle's website.

CalRecycle distributed the NOA to the same interest holders notified during the NOP distribution, along with additional parties who asked to be added to the notification list during scoping, consistent with PRC Section 21092 and CEQA Guidelines Section 15087. The NOA included a summary of the program, anticipated significant impacts, CEQA process information, instructions for accessing the Draft EIR, comment submission options, and the duration of the comment period (PRC Section 21092(b); CEQA Guidelines Section 15087(c)).

CalRecycle also published a display advertisement announcing the availability of the Draft EIR, public meeting times, comment submission information, and the comment period in several newspapers on October 2, 2026: The Sacramento Bee, Los Angeles Times, The San Diego Union-Tribune, The San Francisco Chronicle, The Bakersfield Californian, and The San Jose Mercury News.

Comments on the Draft EIR may be submitted by:

- Email: Permittrainingassistance@calrecycle.ca.gov
- Mail: Department of Resources Recycling and Recovery (CalRecycle), Waste Permitting, Compliance, & Mitigation Division, Permitting and Assistance Branch, Attn: Jeffery Esquivel, 1001 I Street, MS #10A, Sacramento, CA 95814

CalRecycle encourages substantive comments focused on technical issues, proposed regulations, alternatives, environmental effects, and mitigation measures. These comments will be considered when developing the Final EIR. All substantive comments received by the end of the comment period - November 16, 2026 – will be addressed in the Final EIR.

1.5.3 Final EIR

At the end of the public review and comment period, CalRecycle will prepare a Final EIR that includes all written and oral comments received, responses to these comments, and any revisions to the Draft EIR. The Draft EIR and Final EIR together will comprise the EIR for the program.

Before approving the program, the lead agency must certify that the EIR was completed in compliance with CEQA, that the decision-making body reviewed and considered the EIR, and that the EIR reflects the agency's independent judgment.

1.6 Draft EIR Organization

This Draft EIR is organized into chapters, which are summarized here. Chapters are further divided into sections (e.g., Chapter 3, "Environmental Impacts and Mitigation Measures" and Section 3.6, "Energy"):

- **Executive Summary:** Introduces the proposed program; summarizes the environmental review process, environmental effects found not to be significant, and key environmental issues; and identifies significant impacts and mitigation measures.
- **Chapter 1, "Introduction":** Provides a synopsis of the program; describes the type, purpose, and intended uses of this Draft EIR; explains the scope and content of the EIR; identifies agency roles and responsibilities; outlines the EIR process; and describes the organization of the EIR.
- **Chapter 2, "Project Description":** Describes the program's location, background, goals, objectives, and project elements.

- **Chapter 3, "Environmental Impacts and Mitigation Measures":** Evaluates environmental impacts associated with program implementation, organized by subject area (e.g., land use, hydrology and water quality). Each section describes regulatory background, existing conditions, the analysis methodology, and the CEQA thresholds of significance. It identifies impacts, presents mitigation measures, and explains impact significance after mitigation. Environmental impacts and mitigation measures are numbered sequentially within each section (e.g., Impact 3.2-2and Mitigation Measure 3.2-2).
- **Chapter 4, "Cumulative Impacts":** Evaluates cumulative impacts from the program combined with past, present, and reasonably foreseeable future projects.
- **Chapter 5, "Other CEQA Sections":** Evaluates growth-inducing impacts, irreversible and irretrievable commitment of resources, and any significant and unavoidable adverse impacts.
- **Chapter 6, "Alternatives":** Evaluates a reasonable range of alternatives, including alternatives considered but dismissed, the No Project Alternative, and alternative development options. Identifies the environmentally superior alternative.
- **Chapter 7, "Report Preparers":** Identifies the preparers of this Draft EIR.
- **Chapter 8, "References":** Identifies organizations and individuals consulted and documents and individuals cited in the Draft EIR.

2 Project Description

2.1 Introduction

To achieve the goals of Senate Bill (SB) 1383 (Lara, Chapter 395 Statutes of 2016), including the mandated diversion of organic waste from landfill disposal, the number of compostable material handling facilities and operations needs to increase statewide, especially within more rural areas of California. At present, the California Department of Resources Recycling and Recovery (CalRecycle) estimates that approximately 50 – 100 new or expanded organic waste recycling facilities and operations are necessary (CalRecycle n.d.a). However, the siting, permitting, and development of new compostable material handling facilities and operations can take years, depending on the size, site-specific considerations, and feedstock (i.e., the stream of organic waste being processed at a facility) of the proposed facility. To expedite these processes, the California Legislature in September 2024 passed SB 1046, which requires CalRecycle to prepare a Program Environmental Impact Report (EIR) to streamline the permitting process for small and medium compostable material handling facilities or operations that accept agricultural, food, and green materials. This EIR has been prepared in fulfillment of the requirements of SB 1046.

This chapter presents a detailed description of the program. It describes the program location, setting, goals and objectives, and elements, as well as the permits and approvals that may be necessary during project implementation.

2.2 Project Location and Setting

The program area would occur throughout the state of California (Figure 2-1). The locations of existing and permitted composting facilities and operations are known within California; however, decisions by future project proponents regarding the precise locations of new composting facilities and operations cannot be known at this time. Furthermore, due to local planning, and political (i.e., the willingness of jurisdictions to address local opposition to the siting of new or expanded facilities/operations) and economic influences, it would be speculative and infeasible at this stage to attempt to predict future project approvals for the specific location and design of future composting facilities and operations undertaken in response to SB 1383. The analysis of project-specific implementation actions would be subject to future, project-specific analysis.

2.3 Project Background

With the passage and implementation of SB 1383 in 2016, CalRecycle, in consultation with the California Air Resources Board (CARB), developed a series of goals (and associated regulations) to reduce disposal of organic waste statewide by 50% of 2014 levels by 2020 and 75% by 2025. In addition, a recovery goal of at least 20% by 2025 of edible food in the organic waste stream was established. CalRecycle prepared an EIR related to SB 1383 (certified in 2019) that programmatically evaluated the expansion of composting facilities, as well as other types of waste reduction facilities, throughout the state of California in response to the established goals.

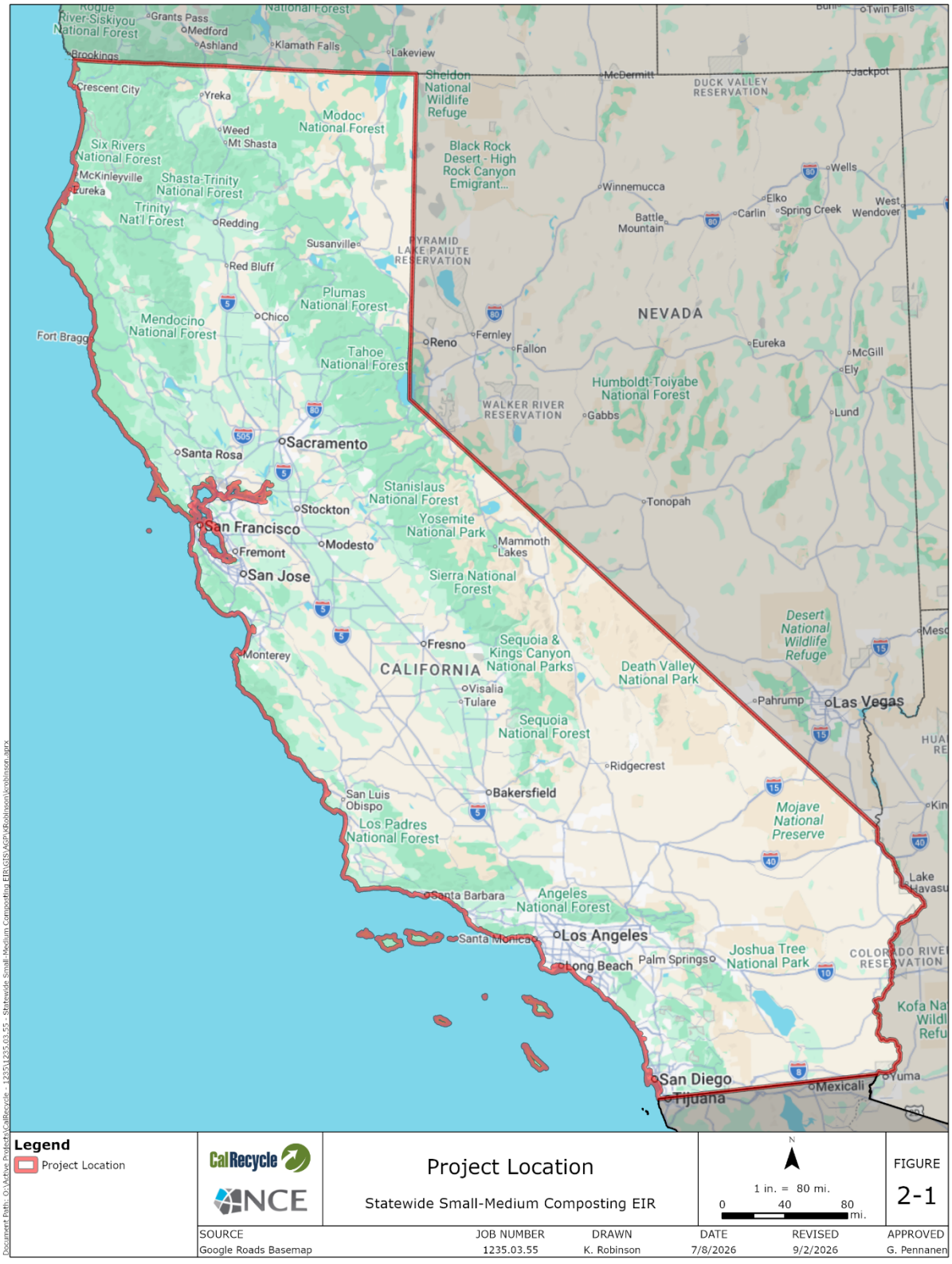


Figure 2-1. Project Location Map

In 2024, CalRecycle prepared an evaluation of current practices and permitting related to the development of small (less than 10,000 tpy; not more than 5,000 cubic yards [cy] at any one time) and medium (less than 25,000 tpy but more than 10,000 tpy; more than 5,000 cy but not 12,500 cy at any one time) composting facilities and operations that accept agricultural, green, and food material (including vegetative food material). That study revealed that the entitlement and environmental review of small and medium compostable material handling facilities and operations has historically been approached in many different ways, with some facilities and operations treated as nondiscretionary (i.e., not a project under CEQA) and others involving either a Notice of Exemption, Negative Declaration, or Mitigated Negative Declaration pursuant to CEQA requirements. This historic approach has led to challenges associated with permitting and development, following initial approval by the local jurisdiction.

Since 2021, 10 small and 18 medium composting facilities/operations have been permitted or authorized by the solid waste local enforcement agency (LEA) and recorded in CalRecycle's Solid Waste Information System (SWIS) database. To ensure that California continues to achieve and exceed SB 1383 targets, it is reasonably foreseeable that the development of additional small and medium composting facilities and operations is necessary, especially within more rural areas of the state.

2.3.1 Overview of Commercial Composting

According to CalRecycle records, many commercial composting facilities/operations currently operating within the state are in and around metropolitan centers (Los Angeles, Bay Area, San Diego, and Sacramento) and/or in the San Joaquin Valley. Facilities/operations located outside of major urban areas are largely located closer to large agricultural areas where compost is used. While there are over 270 permitted composting facilities/operations in California, not all of these are designed to handle food waste and other organic waste included in the regulatory definition of those feedstocks.

Generally, commercial-scale composting is conducted using one of the two following methods:

- **Windrows** are elongated piles of material that can range from 8 to 20 feet wide, up to 10 feet tall, and hundreds of feet long. A machine that straddles the pile turns the windrow by moving along its length, churning the material, breaking up clumps, fluffing the pile, and moving materials to and from the pile core. This action enables all feedstock to be subject to the high internal temperatures of the pile, which reduces pathogens. Fluffing up the pile helps air reach into the pile core, facilitating high temperatures and rapid decomposition. Turning can also be accomplished with front-end loaders.
- **Aerated Static Pile (ASP)** composting, increasingly common in California, uses electric fans to push or pull air through the piles during the active composting phase. Positive aeration occurs when ambient air is blown into the pile; negative aeration occurs when air is drawn through the pile. ASPs are engineered to reduce pollutants such as VOCs and ammonia. Positive aeration systems may use fabric covers or a thick top layer of finished, unscreened compost that acts a biofilter and are often referred to as covered aerated static pile composting. Negative aeration systems discharge air from the piles through a dedicated system that further reduces pollutants.

Upon receipt of feedstock material either via direct delivery or from a materials recovery facility, most commercial facilities/operations (except biosolids and manure composting facilities/operations) will prepare the material for composting by grinding, shredding, or otherwise reducing the size of the incoming feedstock. In

addition, most facilities/operations also remove physical contaminants, such as plastic, metal, and glass. After feedstock preparation, the materials are moved through the following two phases:

- **Active phase:** Composting begins when temperatures exceed 122 degrees Fahrenheit (°F) or 50 degrees Celsius (°C) and continues as temperatures rise to more than 131 °F or 55 °C, beginning the Process to Further Reduce Pathogens (14 California Code of Regulations [CCR], section 17868.3). This stage may last up to a month for windrow composting and be completed more rapidly for ASP composting. The active phase continues while compost matures. Temperatures decline but are still above ambient levels.
- **Curing phase:** After the initial high-temperature active phase, some facilities/operations cure compost to reduce organic acids and reduce phytotoxic compounds. The length of curing time varies considerably by facility.

After the composting process is completed, the finished compost is screened for size and for contaminants, before being sold. Conventional and organic agricultural operations use most of the compost produced in California; however, it is also bagged and sold or given away to the public, nurseries, and landscapers.

Figure 2-2 shows the general compost process steps from the receipt of feedstock materials at a compost facility/operation to the creation of finished products, including alternative daily cover (ADC) and alternative intermediate cover (AIC). At the end of the compost process, most commercial producers sort material through mechanical screens to achieve finished compost. Material that is screened out is often reprocessed. Finished composted material is then transported from composting facilities/operations as a soil amendment for agricultural, landscaping, and horticulture uses.

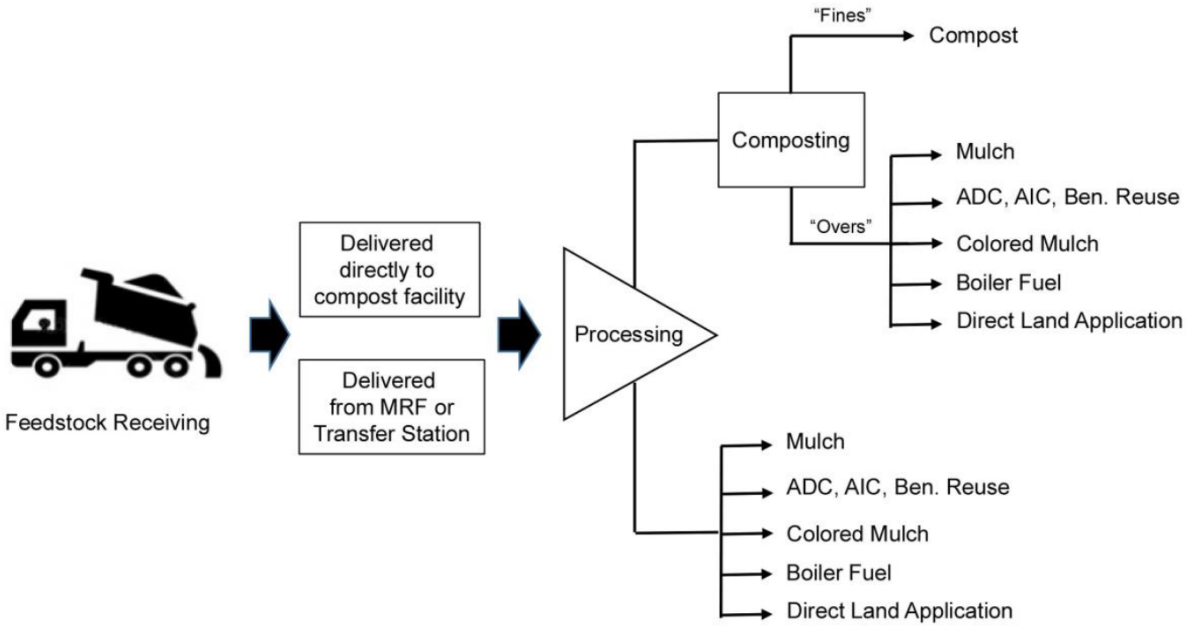


Figure 2-2. Composting Flow Chart

2.3.2 Composting Feedstocks

There are several different feedstocks that may be used in commercial composting facilities and operations. The following describes the primary feedstock (as defined in 14 CCR, Section 17852) types that may be associated with small and medium composting facilities and operations:

- **Agricultural Material** – Waste material of plant or animal origin, which results directly from the conduct of agriculture, animal husbandry, horticulture, aquaculture, silviculture, vermiculture, and similar activities undertaken for the production of food or fiber for human or animal consumption or use. This material is separated at the point of generation and contains no other solid waste.
- **Green Material** – Any plant material except food material and vegetative food material (defined below) that is separated at the point of generation, contains no greater than 1% physical contaminants by dry weight. 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 demolition wood waste.
- **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 separate from the municipal solid waste stream. This includes but is not limited to food waste from restaurants, food processing establishments, grocery stores, cafeterias, and residential food scraps.
- **Vegetative Food Material** – The fraction of food material that is a plant material and separated from other food material and municipal solid waste. This may include processed or cooked vegetative food but must otherwise retain its natural character (i.e., no salts, preservatives, fats/oils, or adulterants).

2.3.3 Small and Medium Composting Facilities and Operations

As defined in SB 1046, small and medium compostable material handling facilities and operations are defined by their on-site capacity. In addition, based on their respective size, the feedstocks anticipated at these facilities/operations vary, as shown in Table 2-1. The information presented below is based on SB 1046, as well as average data for existing permitted small and medium composting facilities and operations (CalRecycle n.d.b). Micro facilities and operations, which fall within the Excluded tier of CalRecycle's regulatory structure, are not considered to be within the purview of this EIR and are not reflected in Table 2-1. The annual throughput of small and medium composting facilities and operations, as shown in Table 2-1, is consistent with the 2024 permitting study and based on a review of existing permitted facilities and operations since 2021. As such, it is considered to be a reasonable estimation of annual throughput for small and medium facilities and operations. It is acknowledged that, depending on the feedstocks handled at an individual facility, a higher annual throughput is achievable.

Table 2-1. Existing Small and Medium Composting Facility and Operation Characteristics

Characteristic	Small Facility	Medium Facility
Allowable on-site capacity (at one time)	Up to 5,000 cy	5,000 – 12,500 cy
Approximate throughput	10,000 tpy	25,000 tpy

Characteristic	Small Facility	Medium Facility
Average acreage per facility	5	11
Feedstock Type	Agricultural material, green material, vegetative food material	Agricultural, green material, vegetative food material, food material

Source: SB 1046; Data provided by CalRecycle 2026.

2.4 Existing Regulatory Framework

Several regulations govern the construction and operation of composting facilities/operations and would apply to any development consistent with the program. These include regulations developed by the State Water Resources Control Board, CalRecycle, and local jurisdictions. Please note that the following discussion pertains only to regulations specific to composting. Other regulations (e.g., that apply more broadly to development activities) are provided in the respective sections of this EIR, per issue area.

2.4.1 CalRecycle Permitting

The need to apply for a permit for a composting facility/operation depends on the size, throughput, and feedstocks that would be associated with that facility. These are established through a tiered regulatory structure implemented by CalRecycle (refer to 14 CCR sections 18100 through 18105.11). More broadly, the current regulatory structure was established in 1994 by CalRecycle (formerly the California Integrated Waste Management Board) and applies to all solid waste facilities and operations, including composting facilities and operations. The regulations, as adopted, established the following five tiers of facilities and operations that take into account facility/operation size, throughput, and feedstock.

- **Excluded:** This is the lowest tier. Within this tier, no applications or permits are required, and State Minimum Standards related to operational, environmental, and safety for solid waste handing do not apply. Generally, these facilities/operations are very small, with less than 5,000 cy of compost given away or sold annually. This tier includes micro (i.e., community-scale) facilities and operations.
- **Notification:** Allowable feedstocks under this tier include agricultural material, green material, and vegetative food material. Facilities/operations in this tier must conform with local agency planning, development, and CEQA requirements and receive a SWIS database number.
- **Registration:** Allowable feedstocks under this tier include agricultural material, green material, food material, and vegetative food material. Facilities in this tier must meet the requirements of the Notification tier, file an application with CalRecycle, and be found in conformance by the LEA.[1] Owner/operator certification is also required. The LEA, but not CalRecycle, will review/reissue the permit for the facility every five years.

[1] The processing of solid waste facility permits is administered by CalRecycle in conjunction with LEAs. LEAs are designated by the governing body of a county or city and, upon certification by CalRecycle, are empowered to implement delegated CalRecycle programs and locally designated activities. LEAs have the primary responsibility for ensuring the correct operation and closure of solid waste facilities in the state.

- **Standardized:** Facilities in this tier must meet the requirements of the Registration tier and provide a copy of the LEA permit package and CEQA information to CalRecycle. CalRecycle will also inspect the facility prior to issuance of a permit.
- **Full Solid Waste Facilities Permit:** This tier is the most extensive and requires permits issued by the LEA, with concurrence by CalRecycle. In addition, the LEA will review the permit every five years.

The specific allowable quantities of feedstocks associated with each regulatory tier also depends on the mix of feedstock material types. Most of the small and medium facilities and operations that have become operational since 2021 fall under the Notification tier.

For facilities and operations that fall under the Notification tier or higher, standard operating procedures/requirements would apply. 14 CCR Division 7, Chapter 3.1, Articles 5 through 9 include specific requirements related to permitting, construction, and operation of composting facilities/operations throughout the state. Article 7, more specifically, imposes requirements related to the reduction of potential pathogens and metal concentration limits, as well as physical contamination limits for compost (within Section 17868.3.1). For example, compost must not contain more than 0.5% by dry weight of physical contaminants greater than 4 millimeters; no more than 20% by dry weight of this 0.5% shall be film plastic greater than 4 millimeters. Testing is required to ensure compliance and if contaminants are identified, additional processing is required.

2.4.2 Compost General Order

The General Order for Waste Discharge Requirements for Composting Operations (WQ 2020-0012-DWQ) (Compost General Order) applies statewide and covers the nine Regional Water Boards controlled by the State Water Board. The General Order provides design and operational requirements for facilities/operations that compost green waste, manure, anaerobic digestate, biosolids, food scraps, and scrap paper products. Under the General Order, all compost facilities are classified into one of two tiers, based on operation size, feedstock, and site conditions. Tier 1 facilities/operations are limited to receiving, processing, and storing less than 25,000 cy of vegetative food material, paper, and agricultural feedstock on site at any time and meeting certain soil percolation rate standards that take into consideration depth to groundwater. Tier 2 facilities/operations can receive, process, and store more than 25,000 cy of the allowable feedstock. Facilities/operations may also qualify as Tier 2 facilities/operations due to site-specific hydrogeological conditions or if they accept nonvegetative food material, biosolids, anaerobic digestate, or a combination of Tier 1 and Tier 2 feedstocks. For this reason, small and medium facilities and operations could fall under both tiers.

2.4.3 Air Quality Management/Air Pollution Control District Requirements

California has 35 local air quality management districts, or air districts, which are responsible for air quality planning, monitoring, and stationary source and facility permitting. In some areas, air districts are defined by county boundaries, but some districts are multi-county, regional entities. Air districts are required to implement plans to reduce emissions of air pollutants that exceed federal National Ambient Air Quality Standards. Air districts have regulatory authority over stationary sources. Mobile sources (e.g., cars, trucks, mobile equipment) fall under the authority of CARB.

California's air districts have the authority to implement air quality-related permitting requirements for their areas, although to date, only three air districts have compost-specific regulations that would apply to facilities and operations under the program. In 2018, CalRecycle convened a working group with CARB, the California Air

Pollution Control Officers Association, and representatives from the 35 air districts to identify challenges faced by composting facilities and operations when applying for air permits. Compost facilities and operations can emit Volatile Organic Compounds (VOCs), which can react with nitrogen oxides (NOx) to make ground-level ozone. Ozone is a criteria pollutant with both state and federal attainment standards. VOCs can also react with ammonia (NH_3) to create fine particulates. Therefore, some composting facilities and operations have been subject to additional permitting requirements based upon combinations of facility size, feedstock, and control technologies, along with specific local air quality concerns.

2.4.4 Local Municipal Code Requirements

Numerous municipalities (i.e., cities and counties) throughout the state have adopted regulations that would apply to small and medium composting facilities and operations, however the requirements imposed by such local jurisdictions vary substantially. The 2024 study prepared by CalRecycle noted that several local jurisdictions provide guidance related to the regulation of organics processing facilities and operations within their zoning codes, while others do not explicitly identify composting facilities and operations within their respective zoning code. Within those jurisdictions, the regulation of composting facilities and operations would likely fall under the requirements for solid waste facilities, more broadly.

2.5 Program Objectives

The objectives of the program are to:

- Provide a consistent approach for streamlining approval of small and medium composting facilities and operations throughout the state.
- Support the development of small and medium composting facilities and operations that accept agricultural, food, and green materials.
- Help California achieve and maintain the SB 1383 goal of reducing statewide organic waste disposal by 75% below 2014 levels.

2.6 Program Description

Under the program, additional small and medium composting facilities and operations would be developed within the state. In order to determine how many small and medium composting facilities and operations could be developed within the state, CalRecycle estimated the likely characteristics of small and medium composting facilities and operations. This estimate is based on the allowable on-site capacities of small and medium composting facilities and operations (as established by SB 1046) and the average permitted capacity for existing small and medium composting facilities, respectively, that have been developed since 2021 (i.e., over the past five years). Table 2-2 presents the characteristics both regulatorily required and assumed based on CalRecycle data for each type of facility (small and medium) that may occur under the program.

Based on the projected statewide need for additional organic waste recycling capacity in order to achieve and maintain SB 1383 targets, it is estimated that capacity for approximately 506,000 additional tons of compostable material will be necessary by 2034 (CalRecycle n.d.a). Taking into account that composting facilities/operations may be sited in locations where their target capacity may not be achieved, an additional 25% of capacity need has been applied to the estimated capacity need for a total program need of 632,500 tons per year by 2034.

Therefore, in order to provide adequate capacity for compostable material by 2034, it is estimated that the program may result in an additional 15 small and 25 medium composting facilities and operations.

It is also considered likely that small and medium composting facilities and operations would continue to be developed beyond 2034. This is shown as part of the total potential program development. Table 2-3 provides estimates for key components of each facility/operation to be developed under the program by 2034 and the entire program. The assumed annual throughput of small and medium composting facilities and operations

Table 2-2. Anticipated Small and Medium Composting Facility and Operation Characteristics

Characteristics Per Facility	Small	Medium
Allowable on-site capacity (cy at one time)	Up to 5,000	5,000 – 12,500
Anticipated average annual tonnage	10,000	25,000
Average acreage per facility	5	11
Feedstock Type	Agricultural material, green material, vegetative food material	Agricultural material, green material, vegetative food material, food material

Source: Data provided by CalRecycle 2026.

Table 2-3. Projected Small and Medium Composting Facilities and Operations Statewide Under the Program

By 2034	Small	Medium	Total
# of facilities	15	25	40
# of facilities per year (average)	Up to 3	Up to 4	Up to 7
Total acres of development	75	275	350
Annual tonnage	150,000	625,000	775,000
Total Anticipated			
# of facilities	30	50	80
# of facilities per year (average)	Up to 3	Up to 4	Up to 7
Total acres of development	150	550	700
Annual tonnage	300,000	1,250,000	1,550,000

Source: Data provided by CalRecycle 2026.

expressed in Table 2-2 and carried forward through Table 2-3 is consistent with the assumed annual throughput of the 2024 permitting study and based on a review of existing permitted facilities and operations since 2021. As such, it is considered to be a reasonable estimation of annual throughput for small and medium facilities and operations. It is acknowledged that, depending on the feedstocks handled at an individual facility, a higher annual throughput is achievable. It is noted that if higher throughput was assumed as part of this analysis the number of potential facilities and the program's anticipated acres of development would decrease compared to what is shown in Table 2-2 and 2-3. For that and the prior reasons stated in this paragraph, the anticipated annual throughput of small and medium composting facilities and operations is considered appropriate and reasonably conservative for the purposes of this analysis.

As noted above, since 2021 (i.e., within a five-year period), LEAs have permitted or authorized 10 small composting operations and 18 medium composting facilities. Carrying forward that same ratio for small/medium composting facilities and operations over a similar five-year period, up to 8 small composting operations and13 medium composting facilities would be permitted or authorized. This would then translate into the projected development of 15 small composting operations and 25 medium composting facilities by 2034, with additional development of composting facilities and operations beyond 2034 (as shown in Table 2-2). In addition, the program would allow for consistency of approach and mitigation of potentially significant impacts (through implementation of the best management practices and mitigation measures presented herein), which is anticipated to streamline permitting of facilities developed under the program, consistent with the requirements of SB 1046. Of note, micro-scale composting (i.e., backyard or community-scale composting) is encouraged by CalRecycle to increase diversion from landfills. However, such activities (due to their size) are not subject to CalRecycle or LEA oversight and regulatory structure and are not evaluated separately from small composting operations within the context of this EIR.

2.6.1 Individual Facility Components

The following presents potential structures associated with both small and medium composting facilities and operations that may be permitted as part of the program.

On-Site Structures

Both small and medium composting facilities and operations would likely support on-site structures. The degree to which structures would be required would vary depending on the size of the composting facility/operation, feedstocks, and local conditions (e.g., wind/temperature). Structures could include:

- Single-story administrative buildings, which would be typical for industrial operations and construction sites and would likely be prefabricated buildings. Typical sizes of these facilities would be 8 feet by 20 feet.
- Storage facility/shed for air compressor/blower (if the facility utilizes ASPs).
- Finished compost sales kiosk (if provided on site and separate from receiving/processing).

For the purposes of this EIR, it is generally assumed that each composting facility/operation may include two on-site structures with a total square footage of approximately 320 square feet.

Infrastructure

Development of composting facilities and operations could require supporting infrastructure including, but not limited to, stormwater treatment and disposal facilities, utility connections for administrative/office space, water and wastewater infrastructure, and on-site access roads.

Off-Site Improvements

In addition to the on-site improvements and depending on site-specific considerations, some off-site improvements could also be needed such as signage, utility, or traffic improvements to direct deliveries and members of the public to each composting facility.

Construction

Construction of composting facilities/operations would require site preparation and earthwork consisting of stripping the area of vegetation (or demolition of structures if the site were previously developed) and either removing or storing the materials for later use in the finished grading phase. Rough earthwork would consist of cutting or filling the site to produce overall site gradients as specified by each project. In general, surfaces would be graded to drain to on-site retention/detention facilities. Excavation may occur for on-site utility infrastructure. Road paving may be required for entrance and on-site access roads.

2.7 Intended Uses of the EIR

As noted in Chapter 1, "Introduction" and pursuant to CEQA Guidelines Section 15121, an EIR is an informational document used by a public agency to analyze and disclose the potential environmental effects resulting from a proposed project/program, to identify alternatives, and to disclose possible ways to reduce or avoid significant environmental effects. CalRecycle is the lead agency responsible for certification of this EIR as adequate under CEQA and the related compliance with the requirements of SB 1046. CalRecycle has sole authority to consider and certify the EIR, and to adopt the Mitigation Monitoring and Reporting Program, Findings of Fact, and Statement of Overriding Considerations (if required). This EIR could also be relied upon by local agencies, LEAs, state or federal responsible agencies with permitting or approval over any project-specific action to be implemented in connection with the program.

2.8 Anticipated Public Approvals

Table 2-4 lists agencies from which permits or approval of certain aspects of a particular project may be required. This EIR, and any environmental analysis relying on this EIR, is expected to be used to satisfy CEQA requirements of the listed responsible and/or trustee agencies. Further, this analysis is anticipated to provide useful information for any federal agency that may issue a permit in support of project development.

Table 2-4. Potential Permits and Approvals Associated with the Program

Agency	Permit/Approval	Relevance of Permit/Approval
U.S. Army Corps of Engineers	Clean Water Act (Section 404) permit	Required for projects involving the discharge of dredge for fill material into waters of the U.S., including wetlands, or construction in navigable waters or activities within a floodplain.
U.S. Fish and Wildlife Service	Federal Endangered Species Act compliance	Required for projects affecting species listed as endangered or threatened.
National Marine Fisheries Service (NMFS)	Federal Endangered Species Act compliance	Required for projects affecting designated special-status anadromous fish species and critical habitat.
NMFS	Magnuson-Stevens Fishery Conservation and Management Act compliance	Required for projects affecting essential fish habitat.
California Department of Fish and Wildlife (CDFW)	California Fish and Game Code Section 1601 et seq. (Streambed Alteration Agreement)	Required for projects that would include activities affecting bed, bank, or channel of surface waters and adjacent riparian habitat.
CDFW	California Endangered Species Act compliance, potential permits under Section 2081 of the Fish and Game Code if take of listed species is likely to occur	Required for projects affecting state-designated special-status species.
California Department of Conservation	Williamson Act contract	Required for projects that involve acquisition of agricultural land under a Williamson Act contract.
California Department of Transportation	Encroachment Permit	Required for projects that involve temporary or permanent improvements within rights-of-way or easements managed by Caltrans.
California Department of Parks and Recreation, Office of Historic Preservation	National Historic Preservation Act, Section 106 compliance	Required for projects that could affect cultural resources considered eligible for inclusion in the National Register of Historic Places.
LEA (in conjunction with CalRecycle)	Notification/Registration pursuant to 14 CCR sections 18100 through 18105.11	Required to limit impacts on public health, safety, and the environment from the operation of solid waste facilities.
Regional Water Quality Control Boards	Clean Water Act (Section 401) certification	Required for projects involving the discharge of dredge for fill material into waters, including wetlands, or construction in navigable waters or activities within a floodplain.
Regional Water Quality Control Boards	General Order for Waste Discharge Requirements for Composting Operations (WQ 2020-0012-DWQ)	Water quality permit compost facilities and operations may result in discharges of residual solids and/or liquids to land.
Regional Water Quality Control Boards	Clean Water Act (Section 402) – National Pollutant Discharge Elimination System requirements	Required for projects involving ground disturbance of more than 1 acre.
Regional Air Districts	Authority to Construct/Permit to Operate	Required for projects involving construction, modifications, or operation of a facility, pursuant to adopted local air district rules and regulations.

Agency	Permit/Approval	Relevance of Permit/Approval
Local Agencies (i.e., cities and counties, as well as special districts)	Local agency discretionary permitting (e.g., site plan review/approval, building permit, conditional use permit, rezoning, etc.)	Required for facilities or activities affecting land regulated under county/city/other planning regulations (including zoning code).

3 Environmental Impacts and Mitigation Measures

Approach to the Environmental Analysis

This Draft EIR evaluates and discloses the environmental impacts associated with the program to construct additional small and medium composting facilities (per SB 1046) needed to achieve and maintain SB 1383 targets, in accordance with CEQA Section 21000 et seq. and the State CEQA Guidelines (California Code of Regulations [CCR], Title 14, Chapter 3, Section 15000 et seq.). Sections 3.1 through 3.16 of this Draft EIR present a discussion of the regulatory background, existing conditions, environmental impacts from construction and operation of future development associated with the program, mitigation measures to reduce the level of impact, and residual level of significance after the application of mitigation (including impacts that would remain significant and unavoidable after application of all feasible mitigation measures). The issues evaluated in these sections are the environmental topics identified in the Notice of Preparation (NOP) and during the public scoping meeting for the program (see Appendix A of this Draft EIR). Chapter 4, "Cumulative Impacts," presents an analysis of the program's incremental contribution to cumulative impacts when considered together with past, present, and reasonably foreseeable future projects producing related impacts, as required by Section 15130 of the State CEQA Guidelines. Chapter 5, "Other CEQA Sections," includes an analysis of the program's growth-inducing impacts and irreversible and irretrievable commitment of resources and discloses any significant and unavoidable adverse impacts, as required by Section 15126 of the State CEQA Guidelines. Chapter 6, "Alternatives," presents a reasonable range of alternatives and evaluates the environmental effects of those alternatives relative to the program, as required by Section 15126.6 of the State CEQA Guidelines.

Introduction to the Analysis

As required by the State CEQA Guidelines (CCR Section 15126.2), this Draft EIR identifies and focuses on the significant direct, indirect, and cumulative environmental effects of the program. Short-term effects are generally associated with construction, and long-term effects are generally associated with operation of a project. As noted above, cumulative impacts of the program are discussed in Chapter 4 of this EIR. This chapter addresses the environmental setting, environmental impacts, and mitigation measures associated with the program in relation to the following resource topics:

- Section 3.1, "Aesthetics"
- Section 3.2, "Agriculture and Forestry Resources"
- Section 3.3, "Air Quality"
- Section 3.4, "Archaeological, Historical, and Tribal Cultural Resources"
- Section 3.5, "Biological Resources"
- Section 3.6, "Energy"
- Section 3.7, "Geology, Soils, and Mineral Resources"
- Section 3.8, "Greenhouse Gas Emissions"
- Section 3.9, "Hazards and Hazardous Materials"
- Section 3.10, "Hydrology and Water Quality"

- Section 3.11, “Land Use and Planning”
- Section 3.12, “Noise”
- Section 3.13, “Public Services”
- Section 3.14, “Transportation”
- Section 3.15, “Utilities and Service Systems”
- Section 3.16, “Wildfire”

The NOP prepared for the program determined that impacts related to Population and Housing, and Recreation, do not require further evaluation as part of the Draft EIR. Sections 3.1 through 3.16 of this Draft EIR each include the following components.

- **Regulatory Setting:** This subsection presents information on the laws, regulations, plans, and policies that relate to the issue area being discussed. Regulations originating from the federal, state, and local levels are each discussed as appropriate.
- **Environmental Setting:** This subsection presents the existing environmental conditions that could be present on and surrounding site specific projects as appropriate, in accordance with State CEQA Guidelines Section 15125. The discussions of the environmental setting focus on information relevant to the issue under evaluation. The extent of the environmental setting area evaluated (i.e., the program study area) differs among resources, depending on the location and extent of where impacts would be expected to occur. For example, impacts on air quality are assessed for the air basin (macroscale) as well as the project site and vicinity (microscale), whereas impacts on tribal cultural, archaeological, and paleontological resources are localized and are generally assessed based on the area in which the project would disturb soils.
- **Environmental Impacts and Mitigation Measures:** This subsection presents thresholds of significance and discusses potentially significant effects of the reasonably foreseeable compliance responses to the proposed regulation on the existing environment, in accordance with State CEQA Guidelines Section 15126.2. The methodology for impact analysis is described, including technical studies upon which the analyses rely. The thresholds of significance are defined and thresholds for which the project would have no impact are disclosed and dismissed from further evaluation. Project impacts and mitigation measures are numbered sequentially in each subsection (Impact 3.1-1, Impact 3.1-2, Impact 3.1-3, etc.). A summary impact statement precedes a more detailed discussion of the environmental impact. The discussion includes the analysis, rationale, and substantial evidence upon which conclusions are drawn. The determination of level of significance of the impact is defined in bold text. A “less-than-significant” impact is one that would not result in a substantial adverse change in the physical environment. A “potentially significant” impact or “significant” impact is one that could or would result in a substantial adverse change in the physical environment; both are treated the same under CEQA in terms of procedural requirements and the need to identify feasible mitigation. Mitigation measures are identified, as feasible, to avoid, minimize, rectify, reduce, or compensate for potentially significant or significant impacts, in accordance with the State CEQA Guidelines Section 15126.4. The mitigation measures presented are proposed in the EIR by CalRecycle to be adopted as part of implementation requirements for site specific projects.

Where an existing law, regulation, or permit specifies mandatory and prescriptive actions about how to fulfill the regulatory requirement as part of the site-specific project definition, leaves little discretion in its implementation, and would avoid an impact or maintain it at a less-than-significant level, the environmental protection afforded by the regulation is considered before determining impact significance. Where existing laws or regulations specify a mandatory permit process for future projects; 1) establish performance standards without prescribing the actions required to meet them; 2) allow substantial discretion in how requirements are met; or 3) include substantial compensatory component, the level of significance is determined before applying the influence of the regulatory requirements. In this circumstance, the impact would be potentially significant or significant, and the regulatory requirements would be included as a mitigation measure.

This subsection also describes whether mitigation measures would reduce future project impacts to less-than-significant levels. Significant and unavoidable impacts are identified as appropriate in accordance with State CEQA Guidelines Section 15126.2(b). Significant and unavoidable impacts are also summarized in Chapter 6, "Other CEQA Considerations." For later actions carried out by local jurisdictions to implement the proposed program (e.g., construction of new facilities), it is expected that project-level environmental review will tier from this Program EIR, and potential impacts identified in this EIR can be avoided or reduced to a less-than-significant level through compliance with local land use and/or permitting requirements or through implementation of mitigation identified in this EIR.

- **References:** The full references associated with the references cited in Sections 3.1 through 3.16 are presented in Chapter 8, "References," organized by chapter or section number.

Scope of the EIR's Analysis

The technical discussions and resource areas addressed in this chapter are based on Appendix G of the State CEQA Guidelines. Sections 3.1 through 3.16 provide resource-specific discussions of environmental impacts and mitigation measures that can reduce significant environmental effects.

Effects Found Not to be Significant

Under CEQA and the State CEQA Guidelines, a lead agency may limit an EIR's discussion of environmental effects when they are not significant (Public Resources Code Section 21002.1[e], State CEQA Guidelines Sections 15128 and 15143). Through the environmental review process described in Chapter 1, "Introduction," it was determined that there would be no impacts related to certain topics identified in Appendix G of the State CEQA Guidelines. This section describes the topics that have been dismissed from consideration, along with the basis for their dismissal from detailed evaluation.

Population and Housing

The program is intended to assist in the permitting and development of new composting facilities to assist the state in achieving its organic waste reduction goals. As a result, the employment projections provided in the Standardized Regulatory Impact Assessment (SRIA) for SB 1383 are considered applicable. Of note, the Office of Administrative Law (OAL) requires preparation of a SRIA for all major proposed state regulations (1 CCR Section 2002) to evaluate the economic effects on the proposed regulations. Based on the analysis included in the SRIA for SB 1383, growth in the waste sector related to organic waste reduction would result in a permanent increase of over 11,000 new jobs across the state of California. If these changes are viewed as percent changes over

business as usual, the change associated with the SB 1383 regulations would represent a 0.05% increase in employment. Taking into consideration that the program would represent a fraction of the project increase, the projected population and employment increase associated with the program would be minor in the overall economy. In addition, local decision-making agencies would determine appropriate locations for new facilities, consistent with local land use planning efforts that consider population and housing growth. Thus, there would not be a substantial increase in jobs such that new unplanned population growth would occur and there would be no significant impacts to population and housing.

Recreation

Implementation of the program is not expected to result in substantial population growth, as discussed above under "Population and Housing." Because the proposed regulations would not generate substantial increases in population, there would not be substantial demand placed on existing recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. The program would not include the development or operation of new recreational facilities or require the construction or expansion of recreational facilities. Thus, there would be no impacts on recreation.

Standard Terminology

This Draft EIR uses the following standard terminology:

- **"No impact"** means no change from existing conditions (no mitigation is needed).
- **"Less than significant impact"** means no substantial adverse change in the physical environment (no mitigation is needed).
- **"Potentially significant impact"** means an impact that might cause a substantial adverse change in the environment (mitigation is recommended because potentially significant impacts are treated as significant).
- **"Significant impact"** means an impact that would cause a substantial adverse change in the physical environment (mitigation is recommended).
- **"Significant and unavoidable impact"** means an impact that would cause a substantial adverse change in the physical environment that cannot be avoided, even with the implementation of all feasible mitigatio

3.1 Aesthetics

This section provides a description of existing visual conditions, meaning the physical features and characteristics that make up the visible landscape within the vicinity of potential construction and operation of small and medium composting facilities, and assesses the changes to those conditions that would occur from implementation of the program. Where implementation of the program could result in potentially significant impacts mitigation measures to reduce the effects are provided. The effects of the program on the visual environment are generally defined in terms of its physical characteristics and potential visibility, the extent to which the program would change the perceived visual character and quality of the environment, and the expected level of sensitivity that the viewing public may have where the program would alter existing views from public views.

One comment regarding aesthetics was received in response to the Notice of Preparation and requested identification of basic site-design practices that could be required at the local level to reduce visual impacts.

3.1.1 Regulatory Setting

Federal

Wild and Scenic Rivers Act

The Wild and Scenic Rivers Act of 1968 preserves rivers that contain outstanding natural, cultural, and recreational values. These river segments are designated by Congress and/or the Secretary of the Interior with the intent to protect scenic river corridors that safeguard the special character of the area for future generations to enjoy. The designated river corridors are overseen by the National Park Service, Bureau of Land Management, U.S. Fish and Wildlife Service, and U.S. Forest Service. These designated corridors regulate future development to preserve scenic qualities and ecological values.

National Scenic Byways Program

The National Scenic Byways Program (NSBP) is a federal designation established in 23 U.S.C. Section 162 and administered by the Federal Highway Administration (FHWA). The NSBP designates roads with outstanding archaeological, cultural, historic, natural, recreational, or scenic qualities and protects nationally significant scenic corridors. Subsequent federal acts including the Reviving America's Scenic Byways Act of 2019 and annual appropriations through 2024 direct FHWA to solicit nominations, make new designations, and fund byway planning and enhancement.

State

California Scenic Highway Program

Created by the Legislature in 1963, the California Scenic Highway Program protects scenic views along state highways and adjacent corridors. A highway may be designated scenic based on the visibility and quality of natural landscape and the degree to which development intrudes on travelers' enjoyment (Caltrans 2026).

To receive official scenic designation, a local city or county must adopt a scenic corridor protection program and apply to Caltrans. Highways that remain only "eligible" are not protected from development that can diminish scenic value. Accordingly, past eligibility does not guarantee that a corridor retains its original scenic character.

Any future facility developed under the proposed regulation would need to comply with this program if located adjacent to an officially designated state scenic highway.

California Coastal Act

The California Coastal Act (Public Resources Code Section 30000 et seq.) governs land use and development within the coastal zone, which generally extends 1,000 yards inland from the mean high tide line, with wider boundaries in sensitive estuarine or habitat areas. Projects proposed in the coastal zone must comply with Coastal Act policies related to public access, habitat protection, water quality, visual resources, and landform alteration. Development within the coastal zone may require a Coastal Development Permit from either the California Coastal Commission or a local government with a certified Local Coastal Program.

California Energy Code and Green Building Regulations

The California Energy Code and CALGreen (Title 24) establish statewide requirements for outdoor lighting design to reduce glare, light trespass, and skyglow. Outdoor luminaires rated at 6,200 lumens or greater must comply with Backlight/Uplight/Glare (BUG) performance standards, which limit unnecessary light spill and improve nighttime visibility. These requirements apply to new construction and site improvements that include exterior lighting, such as security lighting, parking illumination, and access-road fixtures. Compliance with Title 24 ensures that new or modified lighting associated with the project minimizes off-site glare, protects adjacent viewsheds, and reduces potential light pollution consistent with CEQA considerations for visual character and nighttime lighting.

Local

Given its statewide extent and the possible number of local and regional responsible agencies, this EIR does not identify individual, potentially applicable local government plans, policies, and ordinances. Types of local regulations relevant to aesthetics may include general plan policies and ordinances protective of these resources. This EIR assumes that the reasonably foreseeable condition associated with implementation of the program would be consistent with local plans, policies, and ordinances to the extent that development of small and medium composting facilities and operations under the program are subject to them, because local land use and permit approvals are typically conditioned upon such consistency.

3.1.2 Environmental Setting

California exhibits an exceptionally wide range of visual environments due to its geographic and climatic diversity. Major physiographic regions include coastal waters, islands, and the coastal ranges; the central valleys; the Klamath and Cascade Mountains; the Sierra Nevada foothills and mountains; the Great Basin; and the desert regions (Fenneman 1946). Within these broader settings, scenic resources may include panoramic mountain vistas, ocean and coastal views, lakes and rivers, historic districts, and visually intact natural landscapes. At the same time, many areas of the state contain views that are not considered scenic. These include industrial parks, rail and roadway corridors, logistics and distribution centers, utility infrastructure, and areas of dispersed urban sprawl. Transitional landscapes such as rural-urban interface zones where agricultural lands, low-density development, and expanding infrastructure intermingle often exhibit mixed visual character influenced by both natural features and encroaching development. As a result, the visual environment across California ranges from highly scenic natural landscapes to heavily built, visually complex, or visually degraded settings.

Visual Character

Although the sites for small and medium composting facilities and operations under the program could be located throughout California, they would generally be located in areas already suitable for such land uses, including existing solid waste facilities, industrial parks, agricultural lands, and other working landscapes. These locations typically exhibit a utilitarian visual character shaped by built infrastructure, equipment, access roads, and associated operational features.

Areas where composting facilities and operations are located are not commonly situated adjacent to designated scenic resources. Instead, these facilities are often buffered by agricultural fields, rangelands, rural residences, or other transitional land uses that form part of the rural-urban interface. In these settings, views may include a combination of open land, scattered structures, utility corridors, and transportation networks. Where facilities are located within industrial or urbanized areas, the visual environment is generally dominated by large-scale built features, repetitive development patterns, and limited natural elements. Overall, the visual character of these areas reflects the functional nature of the land uses in which composting operations typically occur.

Light and Glare Conditions

Light pollution is the excess or misuse of artificial outdoor nighttime light, which can reduce the ability to see the stars and degrade the character of viewsheds.[2] Night lighting includes streetlights, interior and exterior building lights, and automobile headlights. Nighttime light pollution can also cause glare, which is defined as the difficulty of seeing in the presence of bright light.

Glare occurs when too much bright light or a harsh contrast in light enters one's eyes. Glare is caused by light reflections from pavement, vehicles, and building materials, such as reflective glass and polished surfaces. During daylight hours, the amount of glare depends on intensity and direction of sunlight. During daylight hours, artificial light is generally less of an issue; instead, light reflections from pavement, vehicles, and building materials can be a nuisance.

Light pollution and glare levels vary substantially across California. In undeveloped areas such as open space, trails, agricultural lands, and forested regions ambient light and glare levels are low, and nighttime views typically retain high dark-sky quality. Rural and rural-urban interface areas exhibit moderate lighting and glare associated with scattered residences, agricultural operations, and local roadways. Urban areas contain numerous light sources, including streetlights, vehicle headlights, commercial lighting, and reflective building surfaces, which can create noticeable glare. In larger cities, skyglow may also occur, producing area-wide illumination of the night sky from human-made light sources and reducing nighttime visibility of stars.

3.1.3 Environmental Impacts and Mitigation Measures

The analysis of environmental impacts on aesthetics focuses on the potential for substantial adverse effects to a scenic vista, substantial degradation of scenic resources within a designated scenic highway, degradation of existing visual character or quality, conflicts with applicable zoning and other regulations governing scenic quality, and the creation of a new source of substantial light or glare.

[2] A viewshed is a physiographic area composed of land, water, biotic, and cultural elements that may be viewed and mapped from one or more viewpoints and that has inherent scenic qualities and/or aesthetic values as determined by the viewer.

Methodology

When evaluating the impacts associated with the development and operation of small and medium composting facilities/operations on the visual environment, the focus is on three overarching parameters: existing visual conditions that may be present within the vicinity of a given site; how these would be altered by implementing a project under the program; and the significance of the change on scenic qualities of the landscape and publicly available viewpoints. Visual resources considered in an evaluation include those features in the natural and cultural landscapes that comprise the visible world and contribute to a person's understanding of and reaction to the scene before them.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the program would result in a potentially significant impact on aesthetics if it would:

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
- In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings.
- Conflict with applicable zoning and other regulations governing scenic quality in urban areas.
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Issues Not Discussed Further

No issues related to aesthetics are dismissed from further analysis.

Environmental Impacts and Mitigation Measures

Impact 3.1-1: Substantial Adverse Effect on a Scenic Vista or Visual Character or Quality of Public Views, or Damage to Scenic Resources in a State Scenic Highway from Construction of New Composting Facilities and Operations

Varying degrees of temporary degradation of scenic vistas or the visual character of public views could result during construction of new composting facilities and operations. Although there is uncertainty regarding the location of these facilities and operations, construction activities and equipment associated with new facilities could introduce or increase the presence of visible artificial elements in areas of scenic importance, such as areas visible from state scenic highways, wild and scenic rivers, and federal byways. This impact would be **potentially significant**.

Discussion

Facilities would typically range from approximately 5 to 11 acres and generally would not require major grading, extensive earthwork, or large-scale infrastructure. Site preparation would consist of vegetation removal and/or demolition of existing structures, if present, followed by rough earthwork, such as cutting or filling the site, to establish overall site gradients and appropriate drainage patterns and grading to direct stormwater to on-site

retention or detention facilities. Excavation may occur for utility connections, including water, wastewater, and electrical service, as well as stormwater management features. Road paving may be required for entrance roads and internal access routes.

Construction activities would be temporary and completed within one year on average. Short-term visual elements such as material laydown areas, soil stockpiles, construction equipment, and staging areas would be present only during the construction period and would be removed upon completion. Composting facilities and operations may also be constructed within existing solid waste facilities (including transfer stations) or other previously developed industrial or agricultural sites, where construction activities would not introduce a new or incompatible visual element into the existing viewshed. Off-site improvements, if required, such as signage, minor utility extensions, or traffic-related upgrades, would also be small in scale and typical of rural, industrial, or agricultural settings. Small and medium composting facilities would not be located immediately adjacent to residential neighborhoods due to air quality/odor considerations (refer to Section 3.3, "Air Quality"). As a result, they would not be expected to result in visual incompatibility or significant adverse changes in visual character near residential development.

However, facilities would be constructed in different locations throughout the state, within jurisdictions that maintain full authority over local aesthetic standards, design requirements, and visual resource protections, and do not fall under CalRecycle's regulatory authority. Because each jurisdiction applies its own general plan policies, zoning ordinances, design guidelines, and project-level conditions of approval, and because these requirements vary across the state, CalRecycle cannot ensure that future composting facilities developed under the program would uniformly avoid or reduce potential aesthetic impacts. As a result, short-term construction-related impacts on a scenic vista, visual character, or quality of public views or on scenic resources in a state scenic highway associated with construction of facilities would be potentially significant.

Mitigation Measures

Mitigation Measure 3.1-1: Implement Site-Specific Design Features and Visual Screening During Construction

During project planning, the local agency shall require the implementation of feasible siting considerations and screening to reduce or substantially lessen potentially significant scenic or aesthetic impacts. Consistent with siting considerations identified through early coordination with the local land use authorities regarding screening, setbacks, and compatibility with surrounding land uses, each project under the program shall evaluate the feasibility of and incorporate the following as part of each project, where necessary:

- Locate visible equipment away from public viewpoints or along interior portions of the site.
- Install temporary fencing with visual screening, vegetative screening, berms, or walls to obscure views of the construction area.
- Orient temporary structures to reduce visibility from public roads, trails, or scenic viewpoints.
- Incorporate site layout strategies that minimize contrast with surrounding rural, agricultural, or industrial landscapes.
- Maintain staging areas in a clean and orderly condition and free of unnecessary clutter. Areas used for storage of materials, equipment, or vehicles shall be screened from public view or located in visually unobtrusive portions of the site.

Significance after Mitigation

Implementation of Mitigation Measure 3.1-1 would reduce aesthetic impacts because the required site-planning, screening, and housekeeping practices would substantially lessen the visibility of construction activities and ensure that each project site would remain orderly and unobtrusive. These measures would minimize contrast with surrounding visual character, protect views from public roads and scenic highways, and maintain consistency with local aesthetic expectations identified through early coordination. However, the degree to which the aforementioned measure would be implemented would be determined by the local jurisdiction, and CalRecycle cannot ensure that adequate visual screening or reduction in views would be provided during construction for each project under the program. There may be individual projects under the program that incorporate all feasible measures but would still be determined by the lead agency to have a substantial adverse effect on public views due to local visual compatibility standards and regulations. For that reason, impacts resulting from the development of new facilities and operations under the program would be considered **significant and unavoidable**.

Impact 3.1-2: Long-Term, Substantial Degradation of a Scenic Vista or Visual Character or Quality of Public Views, or Damage to Scenic Resources in a State Scenic Highway from Operation of New Composting Facilities and Operations

The operation of small and medium composting facilities and operations could result in varying degrees of temporary degradation of scenic vistas or the visual character of public views. Although there is uncertainty regarding the location of these facilities and operations, the new facilities/operations could introduce or increase the presence of visible artificial elements in areas of scenic importance, such as areas visible from state scenic highways, wild and scenic rivers, and federal byways. This impact would be **potentially significant**.

Discussion

Small and medium composting facilities typically occupy approximately 5 to 11 acres and include modest on-site structures such as prefabricated administrative buildings (approximately 8 feet by 20 feet), small storage sheds for air compressors or blowers used in aerated static pile systems, and finished compost sales kiosks, if provided. Supporting infrastructure may include stormwater treatment and disposal facilities, utility connections, water and wastewater infrastructure, and on-site access roads. These features are functional in appearance and limited in height and mass and therefore do not constitute visually dominant elements within the broader landscape.

Operational activities would include the movement and processing of organic materials, formation of windrows or aerated static piles, periodic turning or aeration of compost, and use of equipment such as loaders, grinders, or screening machinery. These activities are characteristic of composting operations and are not expected to introduce visually prominent or incompatible features, particularly where facilities are located within existing solid waste facilities or other previously developed industrial or agricultural sites. In such locations, composting operations would blend with the existing visual character and would not introduce new elements into scenic vistas or public views.

In limited circumstances, long-term aesthetic effects could occur where new composting facilities are proposed in areas not previously developed for similar uses or where public viewpoints include designated scenic vistas or scenic highways. In these cases, operational features such as windrows, aerated static piles, equipment movement, or small on-site structures could alter the visual character or quality of public views or introduce new elements into a scenic viewshed. These situations are expected to be uncommon because approval of new

small and medium composting facilities and operations would require compliance with zoning laws and ordinances that require them to be sited in areas zoned for such uses or where these uses are otherwise permitted. Project-specific requirements related to operation, including operational features and infrastructure, would also largely be determined by the local land use authority and may vary by jurisdiction. Therefore, implementation of consistent design considerations to reduce this impact cannot be guaranteed, and long-term operational impacts on a scenic vista, visual character, or quality of public views on scenic resources in a state scenic highway would be potentially significant.

Mitigation Measures

Mitigation Measure 3.1-2: Implement Site-Specific Design Features and Visual Screening During Operation

During project planning, the local agency shall require project proponents to incorporate applicable siting recommendations and best management practices grounded in the permitting practices, siting considerations, and best management practices to reduce potential aesthetic impacts associated with the operation of small or medium composting facilities. Each project under the program shall evaluate the feasibility of and incorporate the following as part of each project, where necessary:

- Locate visible equipment, windrows, aerated static piles, and operational areas away from public viewpoints or along interior portions of the site.
- Install vegetative screening, berms, fencing, or walls to obscure views of active composting areas.
- Use low-profile structures and equipment where feasible.
- Orient structures and operational areas to reduce visibility from public roads, trails, or scenic viewpoints.
- Incorporate site layout strategies that minimize contrast with surrounding rural, agricultural, or industrial landscapes.
- Maintain staging areas in clean and orderly condition and free of unnecessary clutter. Areas used for storage of materials, equipment, or vehicles shall be screened from public view or located in visually unobtrusive portions of the site.
- The color, finish, and materials of all structures visible to the public, including administrative buildings, storage sheds, kiosks, and screening elements, shall be selected to minimize visual contrast and blend with the surrounding landscape. Treatments shall comply with local design guidelines and municipal code requirements. A surface treatment plan shall be submitted to the local agency for review and approval prior to construction.

Significance after Mitigation

Implementation of Mitigation Measure 3.1-2 would reduce aesthetic impacts because the required siting practices, visual screening treatments, orderly site-management protocols, and design-related surface treatments would substantially lessen the visibility of operational features and ensure that facilities remain visually compatible with surrounding land uses. These measures would minimize contrast with the existing visual character, protect views from public roads and scenic highways, and maintain consistency with local aesthetic expectations identified through early coordination with land use authorities. However, the degree to which the aforementioned measure would be implemented would be determined by the local jurisdiction, and CalRecycle cannot ensure that adequate visual screening or reduction in views would be provided during operation of each

project under the program. There may also be individual projects under the program that incorporate all feasible measures but would still be determined by the lead agency to have a substantial adverse effect on public views due to local visual compatibility standards and regulations. For that reason, impacts resulting from the development of new facilities and operations under the program would be considered **significant and unavoidable**.

Impact 3.3-3: Conflict with Applicable Zoning and Other Regulations Governing Scenic Quality

Small and medium composting facilities and operations under the program could be located anywhere in California. Each facility/operation would be subject to local and regional responsible agencies and their applicable local government plans, policies, and ordinances. Types of local regulations relevant to aesthetic resources are primarily general plan policies and ordinances protective of these resources. Through compliance with local regulations as part of the local entitlement process, compliance with applicable zoning and other regulations would be achieved, and impacts would be **less than significant**.

Discussion

As noted in Chapter 2, "Project Description," small and medium composting facilities and operations under the program could be located anywhere in California. Each facility/operation would be subject to local and regional responsible agencies and their applicable local government plans, policies, and ordinances. Types of local regulations relevant to aesthetic resources are primarily general plan policies and ordinances protective of these resources. This EIR assumes that permitting of individual composting facilities would be consistent with local plans, policies, and ordinances. The new small and medium composting facilities and operations are assumed to be proposed in locations that are appropriate for such land use such as: vacant, relatively flat land/open field; of sufficient size; consistent or conditionally consistent with zoning or land use designations; and distant from sensitive populations. Conformance with applicable federal, state, and local laws, ordinances, codes, and standards would ensure that composting facilities are sited and designed in a manner that would not result in conflicts with regulations governing scenic quality. At the federal level, the NSBP administered by FHWA protects nationally significant scenic corridors by regulating development that could diminish archaeological, cultural, historic, natural, recreational, or scenic qualities. Similarly, the Wild and Scenic Rivers Act requires federal agencies and land-managing entities to safeguard the scenic, ecological, and recreational values of designated river corridors, regulating development to preserve their natural character.

Local jurisdictions typically require facilities to locate visible equipment, windrows, aerated static piles, and operational areas away from public viewpoints or within interior portions of a site; install vegetative screening, berms, fencing, or walls to obscure active areas; use low-profile structures and equipment; orient buildings and operations to reduce visibility from public roads, trails, and scenic viewpoints; and incorporate site-layout strategies that minimize contrast with surrounding rural, agricultural, or industrial landscapes. Local jurisdictions also typically require publicly visible structures to use colors, finishes, and materials that blend with the surrounding environment, and mandate that operational and maintenance areas remain clean, orderly, and free of clutter, with storage areas screened or placed in visually unobtrusive locations. Local jurisdictions also enforce corridor protection plans and design measures that limit visual intrusion in compliance with Caltrans' California Scenic Highway Program. Collectively, adherence to these federal, state and local requirements ensures that facilities and operations would be sited outside designated scenic corridors where required. Therefore, compliance with existing local regulations, including zoning regulations, would ensure that impacts would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.1-4: Temporary or Permanent New Sources of Substantial Light or Glare That Would Adversely Affect Views in Areas near Project Sites

Substantial light or glare that would adversely affect day or nighttime views could be generated by construction activities or during operation of small and medium composting facilities and operations under the program. Construction activities would not be anticipated to result in new sources of substantial light or glare because of the short-term and temporary nature of those activities. However, operation of new facilities and operations in rural areas could include infrastructure containing reflective surfaces and could require safety lighting that would be noticeable in those areas. As a result, implementation of the program would be considered **potentially significant**.

Discussion

Development of small and medium composting facilities could result in additional light and glare. During construction activities, substantial light and glare is not anticipated to be substantial as construction activities would be limited to daytime hours and construction activities would be temporary in nature. Should security lighting be deemed necessary through local regulations or otherwise, it would be angled down and inwards towards the construction site. Any on-site glare associated with construction would be limited to construction equipment and single-story trailers, and as such, would not be considered substantial.

Operation of new small and medium composting facilities and operations, particularly those located in rural or otherwise low-light environments, could introduce new and or result in increases in permanent sources of light or glare. Operational features such as security lighting, illumination of working areas, or reflective surfaces on buildings, tanks, or equipment could be noticeable from nearby public viewpoints and may alter the visual character of nighttime or daytime views, respectively. As a result, implementation of the program could result in the operation of permanent new sources of substantial light or glare that would adversely affect views in areas near small and medium composting facilities and operations. Impacts would be considered potentially significant.

Mitigation Measures

Implement Mitigation Measure 3.1-2.

Mitigation Measure 3.1-4: Implement Light Reduction Measures

During project planning, the local agency shall require project proponents to incorporate applicable light and glare reduction measures to reduce the potential for off-site spillage of light during operation of small or medium composting facilities. Each project under the program shall incorporate the following as part of each project, as necessary to prevent light trespass in excess of 2 footcandles as measured from nearby roadways and sensitive receptors (e.g., residential uses):

- Use of full cutoff, shielded, or downward-directed lighting fixtures to minimize light spill and skyglow.
- Limiting fixture height to the lowest feasible height needed for safe operations.
- Use of warm spectrum lighting (e.g., ≤ 3,000K) to reduce glare and nighttime contrast.
- Avoidance of highly reflective exterior materials on structures, tanks, or equipment.

- Use of nonreflective window glazing or matte finishes on building surfaces.
- Incorporation of vegetative or structural screening to reduce visibility of illuminated areas from public viewpoints.
- Consultation with the local agency prior to operation to determine if a Lighting Mitigation Plan is required. If required, the plan shall include:
    - A photometric analysis demonstrating compliance with local lighting standards and showing anticipated light levels at property boundaries.
    - Specifications for fixture type, shielding, height, orientation, and color temperature.
    - Identification of operational lighting zones and any lighting curfews or motion activated controls.
    - Measures to prevent light trespass onto adjacent properties or public roadways, if necessary.
    - Confirmation that lighting installation has been completed and is ready for inspection by the lead agency.

Significance after Mitigation

Implementation of Mitigation Measure 3.1-2 would require the use of nonreflective material with on-site structures. Taking into consideration the low-profile nature of structures that would be located on site, the use of nonreflective material would ensure that substantial glare impacts would not occur. With respect to lighting impacts, incorporation of Mitigation Measure 3.1-4 would require project proponents to demonstrate that light trespass would not exceed 2 footcandles along nearby roadways or at nearby sensitive receptors. These measures would minimize contrast with the existing nighttime visual character, protect nighttime views from public roadways, and maintain consistency with local aesthetic expectations. As a result, the potential impacts of the program with respect to light and glare would be reduced to a **less than significant** level.

3.2 Agriculture and Forestry Resources

This section describes existing agriculture and forestry resources within the state of California, including identification of Important Farmland, timberland, and forest land. The analysis includes a description of the existing environmental conditions, applicable regulatory requirements, the methods used to assess resources and impacts, and the potential direct and indirect impacts to agriculture and forestry resources resulting from program implementation.

One comment letter regarding agriculture and forestry resources was received in response to the Notice of Preparation. The comment requested that the EIR evaluate potential compatibility with agricultural operations.

3.2.1 Regulatory Setting

Federal

There are no federal regulations related to agriculture and forest resources that apply to the program.

State

California Department of Conservation Farmland Mapping and Monitoring Program

Important Farmland in California is classified and mapped according to the California Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (FMMP). Authority for the FMMP comes from Government Code Section 65570(b) and Public Resources Code (PRC) Section 612. Government Code Section 65570(b) requires the DOC to collect or acquire information on the amount of land converted to or from agricultural use for every mapped county and to report this information to the Legislature. PRC Section 612 requires DOC to prepare, update, and maintain Important Farmland Series Maps and other soils and land capability information.

The California Land Conservation Act of 1965

The California Land Conservation Act of 1965, or Williamson Act, preserves agricultural and open space lands through property tax incentives and voluntary restrictive use contracts. Private landowners voluntarily restrict their land to agricultural and compatible open-space uses under minimum 10-year rolling term contracts. In return, restricted parcels are assessed for property tax purposes at a rate consistent with their actual use, rather than potential market value.

California Public Resources Code

Agriculture and forestry land within California are defined by the PRC as follows:

- Section 21060.1(a) defines "agricultural land" as prime farmland, farmland of statewide importance, or unique farmland, as defined by the United States Department of Agriculture land inventory.
- Section 21060.1(b) states that for those areas where lands have not been surveyed for the classifications specified in subdivision (a), "agricultural land" means land that meets the requirements of "prime agricultural land."
- Section 21095 amended CEQA to provide lead agencies with an optional methodology, the Land Evaluation and Site Assessment (LESA) model, to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review

process. The LESA model evaluates measures of soil resource quality, a given project's size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. For a given project, the factors are rated, weighted, and combined, resulting in a single numeric score. The project score becomes the basis for making a determination of a project's potential significance.

- Section 12220(g) defines "forest land" as land that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.
- Section 4526 defines "timberland" as land, other than land owned by the federal government and land designated by the State Board of Forestry and Fire Protection as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis.
- Section 51104(g) defines a "timberland production zone" as an area which has been zoned and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses. With respect to the general plans of cities and counties, "timberland preserve zone" means "timberland production zone."

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) enforces the laws that regulate logging on non-federal lands in California. CAL FIRE also provides periodic assessments of forest resources within California as part of the Fire and Resource Assessment Program. The *California's Forests and Rangelands: 2017 Assessment* presents an assessment of the trends, conditions, and degree to which forest and rangeland conversion has occurred. CAL FIRE also maintains the Forest Legacy Program, which is intended to identify and protect environmentally important forest lands that are threatened by conversion of land to non-forest uses by either purchase or through deed restrictions, such as conservation easements.

On October 30, 2015, Governor Brown issued an emergency proclamation and established the California Tree Mortality Task Force (now a working group under the Forest Management Task Force). On September 1, 2017, Governor Brown issued Executive Order B-42-17 to bolster the State's response to unprecedented tree die-off. One goal of the Task Force was to identify and map areas of tree mortality that pose the greatest potential of harm to people and property. These areas, known as High Hazard Zones, are the areas prioritized for tree removal. The Task Force aims to increase the rate of forest treatments and expand state wood product markets through innovation, assistance, and investment. Advancing forest health project capacity, readiness, and completion statewide aligns with the California Forest Carbon Plan, the goal of which is to establish healthy and resilient forests that can withstand and adapt to wildfire, drought, and a changing climate.

Z'Berg-Nejedly Forest Practice Act of 1973

The Z'Berg-Nejedly Forest Practice Act of 1973 (FPA) (PRC Sections 4511 – 4630.2) established the State Board of Forestry and Fire Protection, whose mandate is to protect and enhance the state's unique forest and wildland resources. This mandate is carried out through enforcement of the California Forest Practice Rules (California Code of Regulations [CCR]), Title 14, Chapters 4, 4.5, and 10). CAL FIRE enforces the laws that regulate logging on non-federal lands in California. Additional rules enacted by the State Board of Forestry and Fire Protection are

also enforced to protect forest and wildland resources. The FPA is intended to achieve "maximum sustained production of high-quality timber products… while giving consideration to values relating to recreation, watershed, wildlife, range and forage, fisheries, regional economic vitality, employment and aesthetic enjoyment" (PRC Section 4513[b]). The regulations created by the FPA define factors such as the size and location of harvest areas, include measures to prevent unreasonable damage to residual trees, and address the protection of riparian areas, water courses and lakes, wildlife, and habitat areas.

Z'Berg-Warren-Keene-Collier Forest Taxation Reform Act of 1976

Pursuant to the Z'berg-Warren-Keene-Collier Forest Taxation Reform Act of 1976, counties were required to provide for the zoning of land used for growing and harvesting timber as Timberland Production Zones (TPZs) (see California Government Code Section 51110(b)). A TPZ is a 10-year restriction on the use of land and replaced the use of agricultural preserves (Williamson Act contracts) on timberland. Land use under a TPZ is restricted to growing and harvesting timber, and to compatible uses approved by the County. In return, taxation of timberland under a TPZ is based only on such restrictions in use.

California Timberland Productivity Act of 1982

The California Timberland Productivity Act of 1982 (California Government Code Sections 51100-51155) identifies the benefits of the State's timberlands and acknowledges the threat of timberland loss via land use conversions. The law identifies policies intended to preserve timberland, including maintaining an optimum amount of timberland, discouraging premature conversion, discouraging expansion of urban land uses into timberlands, and encouraging investments in timberland. The law establishes TPZs on all qualifying timberland, which is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses. The law also provides that timber operations conducted in a manner consistent with forest practice rules under the FPA shall not be or become restricted or prohibited because of any land use in or around the locality of those operations.

California Forest Practice Rules

The California Forest Practice Rules of 2012 define the timber harvest activities that are regulated under CCR Title 14, Chapters 4, 4.5, and 10, and under the FPA (PRC Sections 4511-4630.2). CAL FIRE is the enforcing agency responsible for ensuring that logging and other forest harvesting activities are conducted in a manner that preserves and protects fish, wildlife, forests, and streams.

Before harvesting of commercial trees may occur, landowners must prepare a timber harvesting plan (THP), which outlines the timber proposed for harvesting, the methods of harvesting, and the steps that will be taken to prevent damage to the environment. THPs are required to be prepared by Registered Professional Foresters. In addition, when a timberland owner proposes to carry out a project that would result in timberland being converted to a non-timber growing use, the owner must secure a timberland conversion permit (TCP) from CAL FIRE. The TCP formally recognizes and records the fact that timberland will be converted to another land use. Projects that would result in the conversion of less than three acres of timberland may qualify for an exemption from the requirement for a TCP.

Local

Given its statewide extent and the possible number of local and regional responsible agencies, this EIR does not identify individual, potentially applicable local government plans, policies, and ordinances. Types of local

regulations relevant to agriculture and forestry resources may include general plan policies and ordinances protective of these resources. This EIR assumes that the reasonably foreseeable compliance responses with implementation of the program would be consistent with local plans, policies, and ordinances to the extent that development of small and medium composting facilities and operations under the program are subject to them, because local land use and permit approvals are typically conditioned upon such consistency.

3.2.2 Environmental Setting

Farmland Classification

The State of California maps and classifies farmland through the DOC FMMP. Classifications are based on a combination of physical and chemical characteristics of the soil and climate that determine the degree of suitability of the land for crop production. The classifications under the FMMP are as follows:

- Prime Farmland—land that has the best combination of features for agricultural crop production;
- Farmland of Statewide Importance—land other than Prime Farmland that has a good combination of physical and chemical features for agricultural crop production, but that has more limitations than Prime Farmland, such as greater slopes or less ability to store soil moisture;
- Unique Farmland—land of lesser quality soils used for the production of the state's leading agricultural cash crops;
- Farmland of Local Importance—land of importance to the local agricultural economy;
- Grazing Land—land with existing vegetation that is suitable for grazing;
- Urban and Built-Up Land—land occupied by structures in density of at least one dwelling unit per 1.5 acres;
- Land Committed to Nonagricultural Use—vacant areas, existing land that has a permanent commitment to development but has an existing land use of agricultural or grazing lands; and
- Other Land—land not included in any other mapping category, common examples of which include low-density rural developments, brush, timber, wetland, and vacant and nonagricultural land surrounded on all sides by urban development.

PRC Section 21060.1 and State CEQA Guidelines Appendix G, together, define "Important Farmland" as those lands classified by the DOC FMMP as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (hereafter referred to as "Important Farmland"), and exclude grazing land. Local jurisdictions can further consider other classifications of farmland as important and can also utilize a LESA model to determine farmland importance and impacts from conversion.

Existing Agriculture

According to the most recent DOC California Farmland Conversion Report (2016 – 2018), irrigated farmland in California decreased by approximately 56,186 acres between 2016 and 2018. During this period, urban development was responsible for conversion of 11,465 acres of irrigated farmland to urban uses (including Prime, Statewide, and Unique Farmland). Land idling, where irrigated land was converted to non-irrigated land due to a lack of irrigation over time, conversion to dry farming, or in advance of a planned use for urbanization, was responsible for the conversion of 117,927 acres or 77% of the land removed from irrigation for uses aside

from urban uses. As of 2018, DOC has recorded the conversion of over 1.6 million acres of agricultural land in California to nonagricultural purposes since 1984. This represents an area larger in size than Ventura County. The largest losses in agricultural land have been from Prime Farmland (-816,123 acres), Farmland of Statewide Importance (-455,287 acres), and Grazing Land (-423,565 acres) (DOC 2018:3). Table 3.2-1 presents the most recent acreages of FMMP-mapped farmland in the program area by FMMP category.

Table 3.2-1. Important Farmland Within the Program Area by County

County[1]	Prime Farmland (acres)	Unique Farmland (acres)	Farmland of Statewide Importance (acres)
Alameda	3,200	1,998	1,177
Amador	2,635	2,535	1,390
Butte	192,435	23,846	22,800
Calaveras	181	1,750	341
Colusa	196,237	115,495	2,853
Contra Costa	24,087	2,796	7,362
El Dorado	530	2,999	777
Fresno	658,146	94,215	380,125
Glenn	158,073	19,875	88,826
Imperial	186,823	1,685	286,101
Kern	557,531	93,008	205,790
Kings	109,478	20,482	308,980
Lake	10,365	12,933	901
Los Angeles	20,992	1,838	573
Madera	1,838	182,129	84,543
Marin	1	250	200
Mariposa	5	96	13
Mendocino	17,966	7,663	1,284
Merced	264,211	115,353	153,271
Modoc	70,632	15,632	35,648
Monterey	163,528	26,118	44,427
Napa	30,496	16,754	9,486
Nevada	219	426	919
Orange	1,598	1,973	282
Placer	7,529	22,957	1,680

County[1]	Prime Farmland (acres)	Unique Farmland (acres)	Farmland of Statewide Importance (acres)
Riverside	112,450	28,873	43,191
Sacramento	82,432	15,661	43,394
San Benito	26,527	2,808	7,920
San Bernardino	9,805	2,575	5,304
San Diego	4,973	38,271	6,850
San Joaquin	378,055	89,194	79,981
San Luis Obispo	40,717	47,171	23,558
San Mateo	1,489	1,821	93
Santa Barbara	66,975	37,520	13,662
Santa Clara	13,798	2,153	3,179
Santa Cruz	12,948	3,217	2,145
Shasta	10,136	535	2,582
Siskiyou	63,457	35,520	21,306
Solano	126,796	10,487	6,955
Sonoma	29,864	33,777	17,585
Stanislaus	248,767	125,336	33,295
Sutter	125,336	15,737	125,336
Tehama	64,230	25,375	21,058
Tulare	365,490	11,800	327,522
Tuolumne	39	171	70
Ventura	39,929	28,026	32,613
Yolo	243,748	44,467	19,985
Yuba	39,154	33,555	10,549
Total	**4,785,851**	**1,418,856**	**2,487,882**

[1] The latest FMMP data for Alpine, Del Norte, Humboldt, Inyo, Lassen, Mono, San Francisco, Plumas, Sierra, and Trinity Counties were not available.
Source: Compiled by NCE from DOC 2025.

Williamson Act Classifications

Enacted by the California Legislature in 1965, the Williamson Act is intended to conserve agricultural and open-space lands by limiting their premature or unnecessary conversion to urban development. Under the Act, landowners may voluntarily enter rolling 10-year contracts with participating cities or counties that limit

enrolled properties to agricultural and compatible open-space uses. In exchange, the land is assessed for property tax purposes according to its current restricted use rather than its potential unrestricted market value (DOC 2026). As of 2022, about 14.5 million acres of farmland in counties in the program area (Approximately 14.5% of the program area) were enrolled in the Williamson Act program (DOC 2022). The farmland classifications under Williamson Act are as follows:

- Prime Agricultural Land: Land that is enrolled under Williamson Act contract and meets any of the following criteria (as set forth under California Government Code Section 51201):
    - qualifies for rating as Class I or Class II in the Natural Resources Conservation Service land use capability classifications;
    - qualifies for rating 80 – 100 in the Storie Index Rating;
    - supports livestock used for the production of food and fiber and has an annual carrying capacity equivalent to at least one animal unit per acre, as defined by the U.S. Department of Agriculture;
    - is planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than 5 years and that will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than $200 per acre; or
    - has returned from the production of unprocessed agricultural plant production and has an annual gross value of not less than $200 per acre for 3 of the previous 5 years.
- Non-Prime Agricultural Land: Land that is enrolled under Williamson Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime Agricultural Land is defined as Open Space Land of Statewide Significance under the California Open Space Subvention Act. Most Non-Prime Agricultural Land is in agricultural use, such as grazing or non-irrigated crops. It may also include other open space uses that are compatible with agriculture and consistent with local general plans.
- Farmland Security Zone: Enrolled parcels containing either Prime or Non-Prime Agricultural Land restricted by a 20-year contract pursuant to California Government Code Section 51296.
- Mixed Enrollment: Enrolled lands containing a combination of Prime, Non-Prime, Open Space Easement, or other contracted or enrolled lands not yet delineated by the city or county.
- Non-Renewal: Enrolled lands for which non-renewal has been filed pursuant to California Government Code Section 51245. Upon the filing of non-renewal, the existing contract remains in effect for the balance of the period remaining on the contract. During the non-renewal process, the annual tax assessment gradually increases. At the end of the 9--year non-renewal period (or 19-year non-renewal period if a Farmland Security Zone contract), the contract expires, and the land is no longer restricted.

Existing Forestry Resources

Forests provide a variety of recreation, environmental, and economic benefits. In 2020, The forestry and forest-products industries were responsible for contributing approximately $39 billion and 177,000 jobs to the California economy (Standiford 2020:1). California forests also are important environmental features, providing wildlife habitat and carbon storage and sequestration, while facing numerous threats including wildfire,

development, invasive species and climate change (CAL FIRE 2018:38). Almost one-third of California is forested; of its 100 million acres, 33 million are forested. Approximately 57% of forests statewide, or 19 million acres, are managed by federal agencies such as the U.S. Forest Service, Bureau of Land Management, and National Park Service. Three percent, approximately 1.13 million acres, is owned and managed by state and local agencies and entities, including CAL FIRE, park and water districts, and land trusts. The remaining 40%, approximately 13 million acres, is owned and managed by corporate and noncorporate private landowners (Standiford 2020).

California also contains approximately 17 million acres of timberland—forest capable of producing commercial tree crops and generally available for timber production. Approximately 9.5 million acres, or 55%, are federally owned; 168,000 acres, or approximately 1%, are under State and local government ownership; and approximately 7 million acres, or 44%, are privately owned (Standiford 2020:2–3). Approximately 5.3 million acres of California timberland is designated as TPZs (CAL FIRE 2018:152). The majority of forest lands, timberlands, and designated TPZs within the program area are located in the northern and mountainous portions of the state and outside of urban areas.

3.2.3 Environmental Impacts and Mitigation Measures

Methodology

Potential project impacts on agriculture and forestry resources are evaluated based on how construction and operations could result in conversion of Important Farmland, forest land, or timberland or how the project may conflict with applicable agricultural or forestry land use restrictions. Because the precise locations and characteristics of future projects are not known, this analysis evaluates reasonably foreseeable program effects at the level of detail appropriate for a program EIR. The analysis addresses the potential conversion of Important Farmland to nonagricultural use; conflicts with agricultural zoning or Williamson Act contracts; conversion of forest land or timberland to non-forest uses; conflicts with forest land, timberland, or TPZ zoning; and other changes that could indirectly result in conversion of agricultural or forestry resources.

Significance Criteria

Based on Appendix G of the State CEQA Guidelines, the program would result in a potentially significant impact on agriculture and forest resources if it would:

- Convert significant Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmland) as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to nonagricultural use;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract;
- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC Section 12220(g)), timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g));
- Result in the loss of forest land or the conversion of forest land to a non-forest use; or
- Result in changes in the existing environment which, due to the location or nature, could result in conversion of Important Farmland, to nonagricultural use or conversion of forest land to non-forest use.

Issues Not Evaluated Further

No issues related to agriculture and forestry resources are dismissed from further analysis.

Impacts and Mitigation Measures

Impact 3.2-1: Conversion of Important Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a Nonagricultural Use or to a Use That Conflicts with Agricultural Zoning or a Williamson Act Contract

Construction and operation of small and medium composting facilities and operations could result in significant temporary, long-term, or permanent conversion of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland, and conflicts with Williamson Act contracts and agricultural zoning. However, the specific locations and scale of possible future facilities and operations are not known at this time. Therefore, the precise scale of conversion of farmland and conflicts with zoning or Williamson Act contracts cannot be determined at this time. Because there could be substantial conversion of farmland and conflicts with agricultural zoning and Williamson Act contracts, this impact would be **potentially significant**.

Discussion

Approximately 8.7 million of the 101-million-acre program area contains Prime Farmland, Farmland of Statewide Importance, or Unique Farmland (Important Farmland) (Table 3.2-1). In particular, the Central Valley (Sacramento and San Joaquin valleys) contains a contiguous area of Important Farmland. Construction of small or medium composting facilities and operations would require the creation of temporary staging areas, access roads, work zones, buildings, utilities, stormwater facilities, and other improvements. If these components were located on Important Farmland, construction could temporarily or permanently remove land from agricultural production and thereby result in the conversion of Important Farmland to nonagricultural use. Temporary disturbances could affect agricultural productivity if soils are substantially disturbed or not restored following construction.

Facilities and operations could also be proposed on land zoned for agricultural use or that is subject to a Williamson Act contract. Although some jurisdictions may allow composting facilities and operations within agricultural zoning districts or on Williamson Act lands, applicable requirements vary among jurisdictions. Therefore, whether a particular facility would conflict with agricultural zoning or a Williamson Act contract would depend on its location and the applicable local land use requirements. Because the locations, footprints, and designs of future facility sites are not known, the acreage of Important Farmland that could be converted and the extent of potential land use conflicts cannot be determined at this time. Because program implementation could result in conversion of Important Farmland or conflicts with agricultural zoning or Williamson Act contracts, this impact would be potentially significant.

Mitigation Measures

Mitigation Measure 3.2-1: Avoid Important Farmland and Demonstrate Consistency with Agricultural Zoning and Williamson Act Contracts

Prior to approval by the local agency of a small or medium composting facility or operation under the program, the project proponent shall use the most current DOC FMMP data available to determine whether any permanent or temporary project component would be located on Important Farmland.

No permanent or temporary project component, including the composting facility/operation, access roads, utilities, construction staging areas, equipment or material storage areas, or other areas of ground disturbance, shall be located on Important Farmland. The project proponent shall submit documentation demonstrating compliance with this requirement to the local agency prior to their approval.

If a facility is proposed on land subject to agricultural zoning, the project proponent shall obtain and submit documentation to the applicable land use authority demonstrating that the proposed facility is an allowable or conditionally allowable use under the applicable local zoning ordinance and that the facility would comply with all applicable conditions or requirements.

If a facility is proposed on land subject to a Williamson Act contract, the project proponent shall obtain a determination from the applicable local jurisdiction that the proposed facility is consistent with the applicable Williamson Act contract, the jurisdiction's adopted compatible-use rules, and the compatibility principles established in California Government Code Section 51238.1. At a minimum, the determination shall consider whether the proposed use would substantially compromise the long-term productive agricultural capability of the contracted land, substantially displace or impair current or reasonably foreseeable agricultural operations, or result in the substantial removal of adjacent contracted land from agricultural or open-space use.

Significance after Mitigation

Implementation of Mitigation Measure 3.2-1 would require small and medium composting facilities and operations to avoid locating permanent or temporary project components on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, construction and operation of composting facilities and operations would not result in the conversion of Important Farmland to nonagricultural use. Mitigation Measure 3.2-1 would also require proposed composting facilities and operations to demonstrate consistency with applicable zoning requirements and facilities proposed on land subject to a Williamson Act contract to demonstrate compatibility with the applicable contract and local compatible-use requirements. Therefore, implementation of Mitigation Measure 3.2-1 would reduce impacts related to the conversion of Important Farmland and conflicts with agricultural zoning or Williamson Act contracts to **less than significant**.

Impact 3.2-2: Conflict with Zoning for Forest Land or Timberland, Including TPZs, or Result in Loss or Conversion of Forest Land

Construction and operation of small and medium composting facilities and operations could result in significant temporary or permanent conversion of forest land or timberland and could conflict with zoning for forest land, timberland, or lands zoned as TPZs. The specific locations and scales of possible future facilities and operations are not currently known; thus, the precise scale of conversion of forest land or timberland and conflicts with zoning cannot be determined at this time. Because there could be substantial conversion of forest land and timberland and conflicts with TPZ zoning, this impact would be **potentially significant**.

Discussion

As discussed in Section 3.2.2, "Environmental Setting," approximately one-third of the program area consists of forest land and approximately 5.3 million acres of this forest land is designated as TPZs. Because the specific locations, footprints, and construction requirements of new small and medium composting facilities and operations are not known, they could be proposed in areas containing forest land or timberland, including lands subject to local forest or timberland zoning or designated as TPZs. Construction of access roads, utilities,

stormwater facilities, staging areas, and other permanent or temporary improvements could require vegetation removal and could reduce the acreage or functionality of forest land.

Depending on the location and extent of disturbance, construction or operation of a facility could result in loss or conversion of forest land to non-forest use or could conflict with zoning for forest land, timberland, or TPZ lands. Because the locations and designs of future facilities and operations are not known, the extent of potential conversion or zoning conflicts cannot be determined at this time. Therefore, this impact would be potentially significant.

Mitigation Measures

Mitigation Measure 3.2-2a: Avoid Timberland and Timberland Production Zone Lands

During project planning, the project proponent shall use available state and local mapping, zoning information, and other applicable land use records to determine whether any permanent or temporary project component would occur on timberland or land designated as a TPZ. No permanent or temporary project component, including the composting facility footprint, access roads, utilities, construction staging areas, equipment or material storage areas, or other areas of ground disturbance, shall be located within timberland, or on land designated as a TPZ. The project proponent shall submit documentation demonstrating compliance with this requirement to the local agency prior to their approval.

Mitigation Measure 3.2-2b: Minimize Tree Removal and Replace Trees Removed from Forest Land

Small and medium composting facilities and operations proposed on forest land, as defined by PRC Section 12220(g), shall be designed and sited to avoid or minimize the removal of native trees and reductions in tree cover to the extent feasible. Where removal of native trees from forest land cannot feasibly be avoided, the project proponent shall replace native trees to be removed such that no net loss in the number of native trees may occur.

Replacement trees shall be planted on site when feasible. On-site planting locations should be selected to support continued forest cover, and located adjacent to existing forest canopy, where feasible. Plantings shall consist of native tree species appropriate to the affected forest type and local ecological conditions. If sufficient suitable area is not available on site to achieve full replacement, the remaining replacement trees shall be planted at an off-site location within 5 miles of the project site. Off-site replacement areas shall be capable of supporting native tree growth and shall be selected, to the extent feasible, to maintain or enhance forest resources within the same local watershed and plant community as the affected forest land.

Where removal of trees from land qualifying as forest land under the PRC definition would be required, the project proponent shall prepare a tree replacement and monitoring plan. The plan shall be prepared prior to construction and shall identify the number and species of trees to be removed; the number, species, and locations of replacement trees; planting methods; maintenance requirements; monitoring procedures; and performance standards.

Replacement trees shall consist of native species appropriate to the site and shall be maintained and monitored for a five-year period. If a replacement tree dies or otherwise fails to meet the applicable performance standard during the monitoring period, the project proponent shall replace that tree and continue maintenance and monitoring as necessary to meet the required no-net-loss standard.

Significance after Mitigation

Implementation of Mitigation Measure 3.2-2a would prohibit projects approved under the program from resulting in permanent or temporary impacts on timberland or TPZ lands. Mitigation Measure 3.2-2b would require facilities and operations on forest land to avoid and minimize native tree removal to the greatest extent feasible and to replace removed native trees to result in no net loss in the number of native trees. Therefore, implementation of Mitigation Measures 3.2-2a and 3.2-2b would avoid conversion of timberland and TPZ lands and compensate for tree removal from forest land. With implementation of the aforementioned mitigation measures, impacts related to loss or conversion of forest land and conflicts with timberland or TPZ zoning would be **less than significant**.

Impact 3.2-3: Otherwise Result in Conversion of Important Farmland to Nonagricultural Use or Forest Land to Non-Forest Use

Construction of small and medium composting facilities and operations could result in activities that adversely affect the viability of surrounding agricultural or forest uses. Construction activities could therefore indirectly convert farmland to nonagricultural use or forest land to non-forest use. The specific locations and scales of possible future facilities are not known; thus, the precise extent and nature of indirect conversion of forest land and farmland from construction activities cannot be identified at this time. Because there could be substantial indirect conversion of farmland and forest land from implementation of the proposed regulation, this impact would be **potentially significant**.

Discussion

The construction and operation of small and medium composting facilities and operations could affect the viability of surrounding agricultural or forest uses. For example, construction at a composting facility or operation could temporarily increase traffic on roadways serving Important Farmland, forest land, timberland, and TPZs. However, because the facilities eligible for the program would be limited in size and processing volume, operation of individual facilities would be unlikely to generate substantial off-site changes that would indirectly convert large areas of Important Farmland to nonagricultural use or forest land to non-forest use.

Ground disturbance, vegetation removal, and the operation and construction of the facility near Important Farmland or forest land could generate dust that may affect crop growth or promote the spread of invasive species (see Section 3.3, “Air Quality” and Section 3.5, “Biological Resources”). Effects of invasive species and dust on agriculture and forest resources could result in potentially significant adverse effects to land adjacent to proposed facilities.

The operation of small and medium composting facilities would be limited to the footprint created during construction and operation would be unlikely to result in indirect conversion of forest resources to non-forest use or Important Farmland to nonagricultural use. However, activities required to construct a composting facility or operation, including access improvements, utility extensions, or similar, could increase traffic and result in other facility-related disturbances that could interfere with adjacent agricultural operations or forest management activities. These impacts could indirectly contribute to the conversion of special status farmland to nonagricultural use or forest resources to non-forest use. The specific locations, footprints, and surrounding land uses of future composting facilities are not known at this time; therefore, the extent and nature of potential indirect impacts on the conversion of agricultural or forest resources cannot be determined. Because implementation of the program could result in substantial indirect impacts to agriculture and forestry resources, potentially resulting in conversion of such resources, this impact would be potentially significant.

Mitigation Measures

Mitigation Measure 3.2-3: Implement Agriculture and Forest Resource Protection Measures During Construction and Operation of New Small or Medium Composting Facilities/Operations

To ensure that projects developed as part of the program do not indirectly result in the conversion of Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and land under Williamson Act contract to nonagricultural use or conversion of forest land, timberland, TPZs, or locally zoned forest land to non-forest use, project proponents shall implement the following measures:

- For projects located in particulate matter nonattainment areas, project proponents shall prepare and implement a dust abatement plan that addresses emissions of fugitive dust during construction and operation of the project.
- Project proponents shall develop and implement an invasive species management plan. The plan shall require implementation of on-site measures to ensure that no new invasive plant species are introduced, and existing invasive plant populations are kept below preconstruction abundance and distribution levels.

All of the plans identified as part of this mitigation measure shall be reviewed and approved by the local agency with discretionary authority over the project prior to approval.

Significance after Mitigation

Implementation of Mitigation Measures 3.2-3 would reduce the potential for the construction and operation of program facilities to indirectly result in the conversion of Important Farmland, land under Williamson Act contract to nonagricultural uses, or forest land, timberland, TPZs, or locally zoned forest land to non-forest use. Measure 3.2-3 would require compliance with applicable local requirements, implementation of dust-control measures, and invasive species management to minimize construction- and operation-related effects on adjacent agriculture and forest resources. With implementation of the aforementioned mitigation, indirect impacts related to the conversion of Farmland to nonagricultural use or forest land to non-forest use would be **less than significant**.

3.3 Air Quality

This section identifies air quality conditions in the state and regulatory requirements pertaining to air quality, estimates air pollutant emissions associated with small and medium composting facilities and operations, and describes potential direct and indirect impacts from implementation of the proposed program. Mitigation is presented, as necessary, to reduce significant air quality impacts to the extent feasible. Detailed calculations, assumptions, modeling inputs, and results can be found in Appendix B, Air Quality and GHG Technical Report prepared by Yorke Engineering, LLC.

Two comment letters regarding air quality were received in response to the Notice of Preparation. The comments provided guidance regarding quantitative evaluation of air quality consistent with San Joaquin Valley Air Pollution Control District (SJVAPCD) guidance and requested inclusion of practical, achievable guidance on odor management, feedstock handling, pile management, watering practices, and dust control measures.

3.3.1 Regulatory Setting

Air quality within California is regulated through the efforts of various federal, state, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality within the state are discussed below.

Federal

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) has been charged with implementing national air quality programs. EPA's air quality mandates draw primarily from the federal Clean Air Act (CAA), which was enacted in 1970, with the most recent major amendments made by Congress in 1990. EPA's air quality efforts address both criteria pollutants and hazardous air pollutants (HAPs). EPA regulations concerning criteria pollutants and HAPs are presented in greater detail below.

Criteria Pollutants

The CAA required the EPA to establish national ambient air quality standards (NAAQS) for six common air pollutants, referred to as criteria pollutants, found all over the U.S. The EPA has established primary and secondary NAAQS for ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter with aerodynamic diameter of 10 micrometers or less (PM_{10}), fine particulate matter with aerodynamic diameter of 2.5 micrometers or less ($PM_{2.5}$), and lead. The NAAQS are shown in Table 3.3-1. The primary standards protect public health and the secondary standards protect public welfare. The CAA also required each state to prepare a State Implementation Plan (SIP) for attaining and maintaining the NAAQS. The federal Clean Air Act Amendments of 1990 (CAAA) added requirements for states with non-attainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. California's SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, EPA may prepare a federal implementation plan that imposes additional control measures.

Table 3.3-1. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California (CAAQS)[a,b]	National (NAAQS)[c] Primary[b,d]	National (NAAQS)[c] Secondary[b,e]
Ozone	1-hour	0.09 ppm (180 µg/m^3)	–[e]	Same as primary standard
Ozone	8-hour	0.070 ppm (137 µg/m^3)	0.070 ppm (147 µg/m^3)	Same as primary standard
Carbon monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	Same as primary standard
Carbon monoxide (CO)	8-hour	9 ppm[f] (10 mg/m^3)	9 ppm (10 mg/m^3)	Same as primary standard
Nitrogen dioxide (NO_2)	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	53 ppb (100 µg/m^3)	Same as primary standard
Nitrogen dioxide (NO_2)	1-hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	—
Sulfur dioxide (SO_2)	24-hour	0.04 ppm (105 µg/m^3)	—	—
Sulfur dioxide (SO_2)	3-hour	—	—	0.5 ppm (1,300 µg/m^3)
Sulfur dioxide (SO_2)	1-hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	—
Respirable particulate matter (PM_{10})	Annual arithmetic mean	20 µg/m^3	—	Same as primary standard
Respirable particulate matter (PM_{10})	24-hour	50 µg/m^3	150 µg/m^3	Same as primary standard
Fine particulate matter ($PM_{2.5}$)	Annual arithmetic mean	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
Fine particulate matter ($PM_{2.5}$)	24-hour	—	35 µg/m^3	Same as primary standard
Lead[f]	Calendar quarter	—	1.5 µg/m^3	Same as primary standard
Lead[f]	30-day average	1.5 µg/m^3	—	—
Lead[f]	Rolling 3-month Average	–	0.15 µg/m^3	Same as primary standard
Hydrogen sulfide	1-hour	0.03 ppm (42 µg/m^3)	No national standard	No national standard
Sulfates	24-hour	25 µg/m^3	No national standard	No national standard
Vinyl chloride[f]	24-hour	0.01 ppm (26 µg/m^3)	No national standard	No national standard
Visibility-reducing particulate matter	8-hour	Extinction of 0.23 per km	No national standard	No national standard

Source: CARB 2016, EPA 2023.

Notes: µg/m^3 = micrograms per cubic meter; km = kilometers; ppb = parts per billion; ppm = parts per million by volume, or micromoles of pollutant per mole of gas.

[a] California standards for ozone, carbon monoxide, SO_2 (1- and 24-hour), NO_2, particulate matter, 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.

[b] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on 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.

[c] National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. The PM_{10} 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. The $PM_{2.5}$ 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current federal policies.
[d] National primary standards: The levels of air quality necessary, with an adequate margin of safety to protect public health.
[e] National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
[f] The California Air Resources Board has identified lead and vinyl chloride as toxic air contaminants with no threshold 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.

Hazardous Air Pollutants and Toxic Air Contaminants

Toxic air contaminants (TACs), or in federal parlance, HAPs[3], are a defined set of airborne pollutants that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, due to their high toxicity, they may pose a threat to public health even at low concentrations.

A wide range of sources, from industrial plants to motor vehicles, emit TACs. The health effects associated with TACs are quite diverse and impacts from emissions are generally assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage; or short-term acute effects such as eye watering, respiratory irritation (a cough), runny nose, throat pain, and headaches.

TACs may have carcinogenic and/or non-carcinogenic impacts. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. This contrasts with criteria pollutants for which acceptable levels of exposure can be determined and for which the ambient standards have been established (Table 3.3-1). Cancer risk from TACs is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure.

EPA regulates HAPs through its National Emission Standards for Hazardous Air Pollutants (NESHAP). The standards for a particular source category require the maximum degree of emission reduction that EPA determines to be achievable, which is known as the Maximum Achievable Control Technology (MACT) standards. These standards are authorized by Section 112 of the 1970 Clean Air Act and the regulations are published in 40 CFR Parts 61 and 63. There are no NESHAP or MACT standards applicable to composting itself; however, 40 CFR Part 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines is applicable to diesel engines which could be used at a compost facility to power grinders, screens, or provide emergency power.

State

California Air Resources Board (CARB) is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, required CARB to establish California ambient air quality standards (CAAQS) (Table 3.3-1).

[3] All HAPs are TACs; however, California's TAC list includes a few chemicals not listed as HAPs. Of these, ammonia is the most relevant to the proposed program, as ammonia can be emitted from a compost facility.

Criteria pollutants

CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulate matter, in addition to the above-mentioned criteria pollutants. In most cases the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The CCAA requires that local air districts in the state endeavor to attain and maintain the CAAQS by the earliest date practical.

Toxic Air Contaminants

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB has formally identified over 200 substances and groups of substances as TACs.

After a TAC is identified, CARB may then adopt an airborne toxics control measure (ATCM) for sources that emit that particular TAC. If a safe threshold exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate best available control technology (BACT) for toxics (T-BACT) to minimize emissions.

The Hot Spots Act (AB 2588) requires that existing facilities that emit toxic substances above a specified level (typically annual emissions exceeding a threshold) prepare an inventory of toxic emissions, prepare a health risk assessment (HRA) if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures if the predicted health risk impacts exceed the established threshold.

AB 617 of 2017 is a statewide strategy that emphasizes local plans to reduce emissions. AB 617 aims to help protect air quality and public health in communities around industries subject to the state's cap-and-trade program for greenhouse gas (GHG) emissions. AB 617 imposes a new state-mandated local program to address non-vehicular sources (e.g., refineries, manufacturing facilities) of criteria pollutants and TACs. The bill requires CARB to identify high-pollution areas and directs air districts to focus air quality improvement efforts through adoption of community emission reduction programs within the areas identified. Currently, air districts review individual sources and impose emissions limits on emitters based on BACT, pollutant type, and proximity to nearby existing land uses. This bill addresses the cumulative and additive nature of air pollutant health effects by requiring community-wide air quality assessment and emission reduction planning.

CARB identified particulate emissions from diesel-fueled engines (i.e., diesel particulate matter [DPM]) as a TAC in August 1998. Following its identification and pursuant to AB 1807, CARB determined the need and degree to further control DPM. With the participation of local air districts, industry, and interested public, CARB has adopted diesel exhaust control measures and more stringent emissions standards for various transportation-related mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators). In September 2000, CARB adopted the Diesel Risk Reduction Plan, which recommends many control measures to reduce the emissions of and risks associated with DPM and achieve a goal of 75% DPM reduction by 2010 and 85% by 2020. Beyond 2020, the continued replacement of older vehicles will result in a vehicle fleet that produces substantially lower levels of DPM than under current conditions. Mobile-source emissions of TACs

(e.g., benzene, 1-3-butadiene, DPM) have been reduced significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., Low Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. With implementation of CARB's Risk Reduction Plan and other regulatory programs, it is estimated that by 2035, emissions of DPM will be less than half of those in 2010 (CARB 2023). CARB's 2022 Advanced Clean Fleets regulation will also lead to reduction in DPM through the transition of medium- and heavy-duty trucks to become fully electric by 2045. Additionally, CARB's 2022 amendments to the 2004 Transport Refrigeration Unit (TRU) ATCM increase the stringency of TRU $PM_{2.5}$ restrictions and require the electrification of diesel-powered TRUs by 2029. Adopted regulations are also expected to continue to reduce formaldehyde emissions from cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

Odors

Title 14 of CCR Section 17863.4 requires that an operator of an odor source prepare an Odor Impact Minimization Plan (OIMP), which serves to prevent odors from occurring and to plan in advance the appropriate mitigation measures required to reduce odor impacts. An OIMP also contains the site's complaint investigation procedures, notification to the Local Enforcement Agency (LEA), and emergency procedures for the cease and desist of any operations that cause odor impacts. An OIMP is required for all compostable materials handling operations and facilities, with the exception of agricultural operations that predate the establishment of urban uses under the "Right to Farm Act" (California Civil Code Section 3482.6).

Local

Air emission sources in California are regulated locally by 35 individual air districts. Each air district has adopted its own rules to regulate sources of emission. While it is feasible to evaluate the specific regulatory requirements for composting in every California air district, with 35 air districts, the analysis would be repetitive and is unnecessary. For this EIR, potential air quality impacts were evaluated using representative facility/operation scenarios developed for facilities and operations within the jurisdictional boundaries of the Bay Area Air Quality Management District (Bay Area Air District), San Joaquin Valley Air Pollution Control District (SJVAPCD), South Coast Air Quality Management District (SCAQMD), and San Diego County Air Pollution Control District (SDAPCD). These air districts are among the most stringent with respect to regulations and represent a range of regulatory requirements, air quality conditions, and attainment statuses that may apply to future facilities developed under the program. Air district regulations can generally be grouped into four categories:

- New Source Review Rules
- Prohibitory Rules
- Health Risk Rules
- Source Specific Rules

Each type of rule is explained briefly below.

New Source Review (NSR) rules are the rules that outline what standards a new source of air pollutants has to meet in order to be issued a permit to operate. The three pillars of NSR are BACT, modeling, and offsets. BACT is the most stringent control technology applicable to a source of emissions; BACT is required for all new sources whose emissions exceed specified thresholds established by the individual air district, and BACT is applied on a pollutant-by-pollutant basis. Modeling is required to demonstrate that a new source of emissions does not

cause the local air quality to exceed NAAQS or CAAQS. Offsets are emission reduction credits that are either provided by the air district or purchased by the facility operator for new emissions of non-attainment pollutants. New emissions are offset with reductions by another source to ensure that emissions of a non-attainment pollutant do not increase over time. The emission threshold above which a new facility would have to provide offsets varies by air district and is established based on the level of non-attainment of the area. The compost projects facilitated by this program would likely be required to meet BACT requirements and may also have to provide emission offsets for volatile organic compounds (VOCs) in order to obtain an operating permit. Modeling is not required for VOC emissions because VOCs are not a criteria pollutant (VOCs are regulated because they are ozone precursors).

Prohibitory rules are, as the name implies, rules that prohibit certain pollution-emitting activities. The most important of the prohibitory rules applicable to a compost facility are rules prohibiting fugitive dust emissions. Fugitive dust may be caused by material handling activities, grinding, screening, wind erosion, and vehicle traffic on paved and unpaved roads. Fugitive dust at a compost facility is usually controlled using water sprays, a common and effective control technique.

Health Risk rules are handled in two ways, depending on the air district. Some air districts, including the SCAQMD and Bay Area Air District have adopted prescriptive rules for regulating the health risk impacts from sources of TACs. Other air districts, including the SJVAPCD and most other air districts, rely on their nuisance rules to enforce heath risk standards. In both cases, the facility operator (or the air district on behalf of the operator) must demonstrate that the proposed project does not cause heath risk impacts exceeding specified thresholds. The demonstration can be through screening tools such as the Bay Area Air District's Rule 2-5 look-up table, SCAQMD's Rule 1401 Tier 1 look-up table or Tier 2 spreadsheet tool, or the Office of Environmental Health Hazard Assessment (OEHHA) Prioritization Score screening tool (used in many air districts) or modeling protocol.

Source Specific rules are rules adopted by an air district to regulate a specific source type or industry. Many air districts have source-specific rules applicable to engines. Generally, a Tier 4 diesel engine will comply with those rules. Since the composting facilities under consideration for this program will be new facilities, and Tier 4 diesel engines are readily available in the marketplace for most equipment commonly used at a compost facility, compliance with the engine rules is expected.

Most air districts do not have dedicated rules specifically regulating composting facilities. Most air districts rely on general air pollution prohibitions, general district permitting requirements, including NSR, and nuisance regulations. Two air districts have adopted source-specific rules applicable to composting facilities:

- SCAQMD has two rules applicable to composting operations: Rule 1133.2 - Emission Reductions from Co-Composting Operations, which requires an enclosed composting system, aerated composting and curing operations, and 80% control efficiency for VOC emissions; Rule 1133.3 - Emission Reductions from Composting Operations requires aerated composting. Both rules contain a number of other provisions regulating the operations.
- SJVAPCD adopted Rule 4566 - Organic Material Composting Operations, which requires regular turning of windrows or alternative composting technology achieving 19% reduction in emissions (e.g., aerated static piles).

3.3.2 Environmental Setting

As noted in Chapter 2, "Project Description," small and medium composting facilities and operations developed under the program could be located anywhere in the state. The ambient concentrations of air pollutant emissions are determined by the amounts of emissions released by the sources of air pollutants in the area and the atmosphere's ability to transport and dilute those emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight.

Climate, Meteorology, and Topography

As the program would apply statewide and specific sites for facility/operations development are unknown at this time, the site-specific climate, meteorology, and topography that would influence the distribution of air pollutants is not known with certainty. The following discussion provides a general overview of climate, meteorology, and topographic conditions throughout California.

California includes a wide range of geophysical features such as oceans, valleys, mountains, and deserts. The Pacific Ocean forms the state's western boundary, spanning over 1,200 miles. The Central Valley is located within the middle of the state and is enclosed by various mountain ranges, including multiple coastal mountain ranges to the west, the Sierra Nevada to the east, the Cascade Range to the north, and the Tehachapi Mountains to the south. The boundary between California and Nevada is generally defined by the Sierra Nevada and Colorado River.

California also has expansive deserts, such as the Mojave Desert in southern California, and vast forests of redwood and Douglas fir in the northwest portion of the state. Major rivers include the Sacramento, San Joaquin, and Colorado Rivers. Major lakes include Lake Shasta, Lake Tahoe, and the Salton Sea. Elevation varies greatly in California from Mount Whitney at 14,494 feet (the highest elevation point in the contiguous 48 states) to 282 feet below sea level at Death Valley (the lowest elevation point in the United States).

These landform features affect direction of air flow and, thus, directly affect the distribution of air pollutants. For example, air above low-lying lands surrounded by mountains is often atmospherically stable, which can result in the accumulation of pollutants. California features a Mediterranean climate characterized by hot, dry summers and cool, rainy winters, with some portions of the state experiencing more extreme temperature differences than others. Coastal portions of the state often experience summer fog as a result of the cool marine currents from the Pacific Ocean, and more moderate temperatures, whereas inland portions of the state, such as the high desert, southern San Joaquin Valley, or northern Sacramento Valley experience more extreme temperature differences. Precipitation in California generally occurs in the winter months and, based on historic climate trends, about two-thirds of the state's total rainfall falls in the north.

Criteria Pollutants

Concentrations of criteria pollutants are used to indicate the quality of the ambient air. A brief description of key criteria pollutants in California is provided below. Table 3.3-2 summarizes the foreseeable health impacts that result from exposure to concentrations of criteria pollutants that exceed the applicable CAAQS and NAAQS.

Ozone

Ozone is a photochemical oxidant (a substance whose oxygen combines chemically with another substance in the presence of sunlight) and the primary component of smog. Ozone is not directly emitted into the air but is formed through complex chemical reactions between precursor emissions of reactive organic gases (ROGs) and

NO_X in the presence of sunlight. ROGs are volatile organic compounds that are photochemically reactive. ROGs are commonly emitted from natural sources, e.g., vegetation, agriculture, and animal husbandry. Anthropogenic sources of ROGs include incomplete combustion and the evaporation of chemical solvents and fuels. NO_X are a group of gaseous compounds of nitrogen and oxygen that result from the combustion of fuels.

Emissions of ROGs and NO_X have decreased over the past several years because of more stringent motor vehicle standards and cleaner burning fuels. Emissions of ROG and NO_X decreased from 2000 to 2010 and are projected to continue decreasing from 2010 to 2035 (CARB 2013). VOCs, including ROGs, are also emitted as a result of decomposition of organic material within active compost piles and landfills; however, research conducted for CalRecycle indicates that the amount of VOC emissions generated at a well-managed composting process is between 60 and 92% less than that generated when organic material degrades on its own (CalRecycle 2019:3.3-10).

Nitrogen Dioxide

NO_2 is a brownish, highly reactive gas that is present in all urban environments. The major anthropogenic sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO_2. The combined emissions of NO and NO_2 are referred to as NO_X and are reported as equivalent NO_2. Because NO_2 is formed and depleted by reactions associated with photochemical smog (ozone), the NO_2 concentration in a particular geographical area may not be representative of the local sources of NO_X emissions (CARB 2013).

Particulate Matter

PM_{10} consists of particulate matter emitted directly into the air, such as soot and smoke from mobile and stationary sources, construction operations, and fires; natural windblown dust; and particulate matter formed in the atmosphere through the reaction of gaseous precursors (CARB 2013). $PM_{2.5}$ consists of a subgroup of smaller particles that have an aerodynamic diameter of 2.5 micrometers or less. PM_{10} emissions in California are dominated by emissions from area sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, farming operations, construction and demolition, and particles from fuel combustion in mobile and stationary sources. Direct emissions of PM_{10} are projected to remain relatively constant through 2035. Direct emissions of $PM_{2.5}$ steadily declined in California between 2005 and 2013 to 420 tons per day from 2015 until 2025 and are projected to increase slightly from 2026 through 2035. Emissions of $PM_{2.5}$ in California are dominated by the same sources as emissions of PM_{10} (CARB 2013).

Table 3.3-2. Sources and Health Effects of Criteria Pollutants

Pollutant	Sources	Acute[1] Health Effects	Chronic[2] Health Effects
Ozone	secondary pollutant resulting from reaction of ROG and NO_X in presence of sunlight. ROG emissions result from incomplete combustion and evaporation of chemical solvents and fuels; NO_X results from the combustion of fuels.	increased respiration and pulmonary resistance; cough, pain, shortness of breath, lung inflammation	permeability of respiratory epithelia, possibility of permanent lung impairment

Pollutant	Sources	Acute[1] Health Effects	Chronic[2] Health Effects
Carbon monoxide (CO)	incomplete combustion of fuels; motor vehicle exhaust	headache, dizziness, fatigue, nausea, vomiting, death	permanent heart and brain damage
Nitrogen dioxide (NO_2)	combustion devices; e.g., boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines	coughing, difficulty breathing, vomiting, headache, eye irritation, chemical pneumonitis or pulmonary edema; breathing abnormalities, cough, cyanosis, chest pain, rapid heartbeat, death	chronic bronchitis, decreased lung function
Sulfur dioxide (SO_2)	coal and oil combustion, steel mills, refineries, and pulp and paper mills	Irritation of upper respiratory tract, increased asthma symptoms	Insufficient evidence linking SO_2 exposure to chronic health impacts
Respirable particulate matter (PM_{10}), Fine particulate matter ($PM_{2.5}$)	fugitive dust, soot, smoke, mobile and stationary sources, construction, fires and natural windblown dust, and formation in the atmosphere by condensation and/or transformation of SO_2 and ROG	breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, premature death	alterations to the immune system, carcinogenesis
Lead	metal processing	reproductive/developmental effects (fetuses and children)	numerous effects including neurological, endocrine, and cardiovascular effects

Source: EPA 2023.
[1] "Acute" refers to effects of short-term exposures to criteria pollutants, usually at fairly high concentrations.
[2] "Chronic" refers to effects of long-term exposures to criteria pollutants, usually at lower, ambient concentrations.

Toxic Air Contaminants

According to the *California Almanac of Emissions and Air Quality* (CARB 2013), the majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important of which is DPM. DPM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Unlike the other TACs, no ambient monitoring data are available for DPM because no routine measurement method currently exists. However, CARB has made preliminary concentration estimates based on a PM exposure method. This method uses the CARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies to estimate ambient concentrations of DPM. In addition to DPM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene. DPM poses the greatest health risk among these 10 TACs mentioned. Based on receptor modeling techniques, levels of most TACs, except para-dichlorobenzene and formaldehyde, have decreased overall since 1990 (CARB 2013).

Odors

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals can smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivity to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person may be acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity. Land uses typically associated with offensive odors include wastewater treatment plants, sanitary landfills, composting facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting operations, rendering plants, and food packaging plants.

Sensitive Receptors

Sensitive receptors are generally considered to include those land uses where exposure to pollutants could result in health-related risks to sensitive individuals, such as children or the elderly. Residential dwellings, schools, hospitals, playgrounds, and similar facilities are of primary concern because of the presence of individuals particularly sensitive to pollutants and/or the potential for increased and prolonged exposure of individuals to pollutants. The proposed program would support the construction and operation of compost facilities and operations throughout the state; however, the specific sites are unknown at the program level. Thus, the presence, location, and proximity of sensitive receptors to future compost sites are unknown at the program level.

3.3.3 Environmental Impacts and Mitigation Measures

Methodology

As new small and medium composting facilities and operations could be developed statewide under the program, they would be subject to the local rules and regulations associated with the local agencies and air districts with jurisdiction over the area within which they are proposed. As noted in Section 3.3.1, “Regulatory Setting,” SJVAPCD, SCAQMD, Bay Area Air District, and SDAPCD are among the most stringent with respect to regulations and represent a range of regulatory requirements, air quality conditions, and attainment statuses that may apply to future facilities developed under the program. For that reason, this analysis focuses on a quantitative evaluation of potential emissions against the standards established within those districts as a proxy for potential impacts under the program that may occur with the development of small and medium composting facilities and operations, statewide.

Construction

A project’s construction phase produces many types of emissions, generally including PM_{10}, and $PM_{2.5}$ in fugitive dust and diesel engine exhaust. Construction-related emissions can cause substantial increases in localized concentrations of PM_{10}, affecting PM_{10} compliance with ambient air quality standards on a regional basis. Diesel-

fueled construction equipment emits ozone precursors NO_x and ROG,[4] and DPM. Use of architectural coatings and other materials associated with finishing buildings may emit ROGs and TACs.

Construction emissions were evaluated for 1) a small composting operation on a -acre site, and 2) a medium composting facility on an 11-acre site. It was assumed that 25% of the site would be developed with paved surfaces for both small and medium facilities and operations.

Construction-related emissions were estimated using the California Emissions Estimator Model® (CalEEMod) Version 2022.1.1.45, 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. Attachment 1 of Appendix B provides additional detail on CalEEMod inputs, assumptions, and results.

Because construction-related criteria pollutant emissions were generally consistent across the four air districts evaluated,[5] the maximum daily and annual construction emissions for each representative facility/operation scenario are summarized in Table 3.3-3.

Table 3.3-3. Construction Criteria Pollutants Emissions Summary

Pollutant	Small Operations			Medium Facilities		
	Average Daily Emissions (lb/day)	Maximum Daily Emissions (lb/day)	Annual Emissions (TPY)	Average Daily Emissions (lb/day)	Maximum Daily Emissions (lb/day)	Annual Emissions (TPY)
ROG (VOC)	4.9	60.9	0.9	4.9	61.0	0.9
NO_x	6.2	28.1	1.1	6.5	28.1	1.2
CO	8.4	29.2	1.5	8.7	29.2	1.6
SO_x	0.01	0.05	0.003	0.02	0.06	0.003
PM_{10} (Exhaust)	0.2	1.2	0.04	0.2	1.2	0.04
Total PM_{10}	0.4	9.1	0.1	0.5	9.1	0.1
$PM_{2.5}$ (Exhaust)	0.2	1.1	0.04	0.2	1.1	0.04
Total $PM_{2.5}$	0.3	5.1	0.1	0.3	5.1	0.1

Source: CalEEMod Version 2022.1.1.45.

Note: Consistent with Bay Area Air District CEQA significance thresholds, exhaust PM_{10} and $PM_{2.5}$ emissions are presented separately because the applicable thresholds apply to exhaust PM rather than total PM emissions. In addition, average daily emissions are presented because Bay Area Air District thresholds are based on average daily emissions rather than peak (maximum) daily emissions.

[4] ROGs, VOCs, and precursor organic compounds (POCs) all refer to photochemically reactive organic compounds and can be used interchangeably. For this EIR, VOC will generally be used to report emissions. POC and ROG will be used when the source document (study, report, software program, etc.) uses that nomenclature to avoid misrepresenting the data.

[5] The small and medium facility construction plans were identical for the four air districts evaluated. The predicted emissions varied because the criteria pollutant emission factors for the on-road and off-road vehicle fleets in the four jurisdictions vary due to differences in fleet composition and age. Overall, the emission totals for the four air districts varied by less than 2%. The maximum emissions are presented.

Operation

Operation of compost facilities would produce emissions of air pollutants from fuel combustion in stationary and mobile sources, decomposition of organic materials, and use of processing equipment.

Because the Statewide program does not identify specific facility locations or operational designs, the analyses were based on representative composting facility/operation scenarios. The scenarios were developed to capture the range of facility sizes, feedstocks, and composting technologies anticipated under the program.

Six scenarios were evaluated, representing small and medium composting facilities utilizing windrow, positive covered aerated static piles (CASP), and negative aerated static piles (ASP) systems. Small-sized operations were assumed to have an on-site capacity of up to 5,000 cubic yards (cy) in accordance with the requirements of SB 1046 and may process up to 10,000 tons per year (TPY) of agricultural material, green material, and vegetative food material. Medium-sized facilities were assumed to have an on-site capacity of up to 12,500 cy in accordance with the requirements of SB 1046 and may process up to 25,000 TPY of agricultural material, green material, vegetative food material, and food material. The scenarios and associated operating assumptions are included in Appendix B. Simplified descriptions of the scenarios are listed in Table 3.3-4.

Table 3.3-4. Representative Composting Facility/Operation Scenarios

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Facility Type	Small	Small	Small	Medium	Medium	Medium
Composting Technology	Windrows	Positive CASP	Negative ASP with Filter	Windrows	Positive CASP	Negative ASP with Filter
Assumed Throughput	10,000 TPY	10,000 TPY	10,000 TPY	25,000 TPY	25,000 TPY	25,000 TPY

Emissions estimates have been prepared for the following stationary source categories:

- Grinding and screening dust/particulate emissions;
- Material handling dust/particulate emissions;
- Wind erosion dust/particulate emissions;
- Feedstock storage VOC emissions;
- Composting VOC emissions;
- Curing VOC emissions;
- Finished compost storage VOC emissions;
- Stationary diesel engine exhaust criteria pollutant emissions for grinders, screens, stackers, colorizers, and emergency engines;
- Feedstock storage, composting, curing, and finished compost storage organic TAC and ammonia (NH_3) emissions;
- Grinding, screening, material handling, and wind erosion Dust and Particulate TAC Emissions; and

- Stationary diesel engine exhaust DPM emissions.

And the following mobile source categories:

- Vehicle and Equipment Exhaust Emissions:
    - On-Road Vehicle Exhaust Emissions, and
    - Off-Road Equipment Exhaust Emissions;
- Fugitive Dust from Travel on Paved Roads;
- Fugitive Dust from Travel on Unpaved Roads;
- TAC Emissions:
    - Vehicle and Equipment Exhaust TAC Emissions:
        - Diesel Exhaust Emissions (i.e., DPM);
        - Gasoline Exhaust Emissions;
    - Paved Road Dust TAC Emissions; and
    - Unpaved Road Dust TAC Emissions.

Emission calculations, methodologies, and assumptions used are provided in Appendix B.

The Statewide program would facilitate the development and operation of small and medium compostable material handling facilities and operations that process agricultural material, food material, green material, and vegetative food material. Manure is included within the definition of agriculture material, and generally has a higher nitrogen concentration relative to green waste and can be used to improve the carbon to nitrogen ratio when blended with low-nitrogen feedstocks. Co-composting with manure is thought to lead to lower VOC emissions due to the improved nutrient ratio. For the purpose of this analysis, in order to be conservative (i.e., to ensure that emissions are not underestimated), the higher green waste emission factors are used to predict composting emissions rather than the lower co-composting emission factors.

Baseline operations for all scenarios assume that the feedstock would be sent to a landfill. Because the Statewide program does not identify specific facility locations, detailed comparisons to baseline operations must be largely undefined. CARB and CalRecycle anticipate that emissions of VOCs, NO_x, PM_{10}, and $PM_{2.5}$ from processing compost feedstock would be lower at a composting facility/operation relative to processing at a landfill.

For this analysis, it was assumed that criteria pollutant and TAC emissions at the compost facility would be new emissions, and landfill emissions of these pollutants are not estimated. As a practical matter, most criteria pollutant and TAC emissions have localized impacts, thus emissions of these pollutants from a distant landfill would not factor into the analyses of impacts at the composting facilities and operations.

For feedstock truck trips, there are three possibilities: 1) the distance to a new composting facility is shorter than the distance to a landfill; 2) the distance is the same as the distance to a landfill; and 3) the distance to a new composting facility/operation is greater than the distance to a landfill. In the first two possibilities, emissions from truck travel for feedstock delivery would decrease or be unchanged. To ensure that project emissions are not underestimated, only the third possibility was included in emission calculations; feedstock truck trip distance to a landfill was subtracted from the truck trip distance to a composting facility/operation. This difference from

baseline is incorporated into the project emissions by using the difference in distance in the calculations; the baseline emissions from feedstock trucks are not presented separately.

It is likely that composting facilities and operations would be located closer to feedstock sources than landfills because the largest feedstock sources (i.e., agriculture facilities) are also often the largest consumers of finished compost, which provides additional incentive to locate composting facilities close to the feedstock sources.

Projects in non-attainment areas subject to NSR must have emissions offset. Projects with emissions that are greater than local air district offsets thresholds must purchase offsets to apply an emission reduction to the project such that the NSR emission increase in the air basin is zero or net negative. Offsets obtained for a project are accounted for as emissions reductions in this analysis. The offset thresholds for the Bay Area Air District, SJVAPCD, SCAQMD, and SDAPCD are summarized in Table 3.3-5.

Table 3.3-5. Summary of Air District Offset Thresholds

Air District	NO_x (TPY)	VOC (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)
Bay Area Air District1	10	10	N/A	100	100	100
SJVAPCD	10	10	100	27.3	14.6	70
SCAQMD2	4	4	29	4	4	10
SDAPCD	25	25	N/A	N/A	N/A	N/A

[1]Bay Area Air District NO_x and VOC offset purchases are not needed until the Potential to Emit (PTE) is greater than 35 TPY; however, offsets are still provided by the Bay Area Air District's Small Facility Bank for projects with PTE between 10 and 35 TPY.

[2]Windrows are not subject to permit requirements in the SCAQMD; thus, a new windrow project would not be subject to permitting or NSR requirements in the SCAQMD and would not be required to provide offsets.

Tables 3.3-6 and 3.3-7 summarize the daily and annual operational criteria pollutant emissions increase associated with the six project scenarios. Detailed project emission calculations are presented in Appendix B.

Table 3.3-6. Summary of Daily Project Operational Criteria Pollutants Emissions Increase

	Pollutant	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Scenario 1 Small Operation Windrow	Net Increase – Bay Area Air District	8.03	1.43	33.17	0.05	8.95	1.35
	Net Increase – SJVAPCD	8.03	1.43	33.17	0.05	8.95	1.35
	Net Increase – SCAQMD	8.03	112.53	33.17	0.05	8.95	1.35
	Net Increase – SDAPCD	8.03	112.53	33.17	0.05	8.95	1.35
Scenario 2 Small Operation CASP	Net Increase – Bay Area Air District	7.75	33.93	30.76	0.05	8.3	1.28
	Net Increase – SJVAPCD	7.75	33.93	30.76	0.05	8.3	1.28
	Net Increase – SCAQMD	7.75	1.3	30.76	0.05	8.3	1.28
	Net Increase – SDAPCD	7.75	33.93	30.76	0.05	8.3	1.28
Scenario 3 Small Operation Negative	Net Increase – Bay Area Air District	7.75	24.12	30.76	0.05	8.3	1.28
	Net Increase – SJVAPCD	7.75	24.12	30.76	0.05	8.3	1.28
	Net Increase – SCAQMD	7.75	24.12	30.76	0.05	8.3	1.28

ASP with Filter	Net Increase – SDAPCD	7.75	24.12	30.76	0.05	8.3	1.28
Scenario 4 Medium Facility Windrow	Net Increase – Bay Area Air District	14.6	3.3	86.09	0.14	22.62	3.09
	Net Increase – SJVAPCD	14.6	3.3	86.09	0.14	22.62	3.09
	Net Increase – SCAQMD	14.6	278.91	86.09	0.14	22.62	3.09
	Net Increase – SDAPCD	14.6	3.3	86.09	0.14	22.62	3.09
Scenario 5 Medium Facility CASP	Net Increase – Bay Area Air District	13.9	2.97	80.07	0.13	21	2.91
	Net Increase – SJVAPCD	13.9	2.97	80.07	0.13	21	2.91
	Net Increase – SCAQMD	13.9	2.97	80.07	0.13	21	2.91
	Net Increase – SDAPCD	13.9	82.43	80.07	0.13	21	2.91
Scenario 6 Medium Facility Negative ASP with Filter	Net Increase – Bay Area Air District	13.9	57.9	80.07	0.13	21	2.91
	Net Increase – SJVAPCD	13.9	57.9	80.07	0.13	21	2.91
	Net Increase – SCAQMD	13.9	2.97	80.07	0.13	21	2.91
	Net Increase – SDAPCD	13.9	57.9	80.07	0.13	21	2.91

Note: VOC emission reductions associated with required NSR emission offsets were incorporated into the analysis. Offset requirements apply to Scenario 1 in the Bay Area Air District and SJVAPCD; Scenario 2 in the SCAQMD; Scenario 4 in the Bay Area Air District, SJVAPCD, and SDAPCD; Scenario 5 in the Bay Area Air District, SJVAPCD, and SCAQMD; and Scenario 6 in the SCAQMD.

Table 3.3-7. Summary of Annual Project Operational Criteria Pollutants Emissions Increase

	Pollutant	NO_x (TPY)	VOC (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)
Scenario 1 Small Operation Windrow	Net Increase – Bay Area Air District	0.81	0.22	4.71	0.01	1.38	0.19
	Net Increase – SJVAPCD	0.81	0.22	4.71	0.01	1.38	0.19
	Net Increase – SCAQMD	0.81	20.3	4.71	0.01	1.38	0.19
	Net Increase – SDAPCD	0.81	20.3	4.71	0.01	1.38	0.19
Scenario 2 Small Operation CASP	Net Increase – Bay Area Air District	0.77	5.96	4.34	0.01	1.28	0.18
	Net Increase – SJVAPCD	0.77	5.96	4.34	0.01	1.28	0.18
	Net Increase – SCAQMD	0.77	0.2	4.34	0.01	1.28	0.18
	Net Increase – SDAPCD	0.77	5.96	4.34	0.01	1.28	0.18
Scenario 3 Small Operation Negative ASP with Filter	Net Increase – Bay Area Air District	0.77	5.96	4.34	0.01	1.28	0.18
	Net Increase – SJVAPCD	0.77	5.96	4.34	0.01	1.28	0.18
	Net Increase – SCAQMD	0.77	0.2	4.34	0.01	1.28	0.18
	Net Increase – SDAPCD	0.77	5.96	4.34	0.01	1.28	0.18
Scenario 4 Medium Facility Windrow	Net Increase – Bay Area Air District	0.77	5.96	4.34	0.01	1.28	0.18
	Net Increase – SJVAPCD	0.77	5.96	4.34	0.01	1.28	0.18
	Net Increase – SCAQMD	0.77	0.2	4.34	0.01	1.28	0.18

	Net Increase – SDAPCD	0.77	5.96	4.34	0.01	1.28	0.18
Scenario 5 Medium Facility CASP	Net Increase – Bay Area Air District	1.73	0.46	12.03	0.02	3.27	0.44
	Net Increase – SJVAPCD	1.73	0.46	12.03	0.02	3.27	0.44
	Net Increase – SCAQMD	1.73	0.46	12.03	0.02	3.27	0.44
	Net Increase – SDAPCD	1.73	14.75	12.03	0.02	3.27	0.44
Scenario 6 Medium Facility Negative ASP with Filter	Net Increase – Bay Area Air District	1.73	10.28	12.03	0.02	3.27	0.44
	Net Increase – SJVAPCD	1.73	10.28	12.03	0.02	3.27	0.44
	Net Increase – SCAQMD	1.73	0.46	12.03	0.02	3.27	0.44
	Net Increase – SDAPCD	1.73	10.28	12.03	0.02	3.27	0.44

Note: VOC emission reductions associated with required NSR emission offsets were incorporated into the analysis. Offset requirements apply to Scenario 1 in the Bay Area Air District and SJVAPCD; Scenario 2 in the SCAQMD; Scenario 4 in the Bay Area Air District, SJVAPCD, and SDAPCD; Scenario 5 in the Bay Area Air District, SJVAPCD, and SCAQMD; and Scenario 6 in the SCAQMD.

Significance Thresholds

The air quality, odor, and HRA impact analyses were conducted using significance thresholds adopted or recommended by the four air districts evaluated in this EIR. The applicable thresholds are described below and summarized in the following tables.

Bay Area Air District

The Bay Area Air District CEQA Air Quality Guidelines provide significance thresholds for criteria pollutants, health risk impacts and odor. The thresholds used in this analysis for projects in the Bay Area Air District are summarized in Table 3.3-8.

Table 3.3-8. Bay Area Air District CEQA Thresholds of Significance

Pollutant	Average Daily Emissions (lb/day), Construction	Average Daily Emissions (lb/day), Operation	Maximum Annual Emissions (TPY), Operation
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
$PM_{10}/PM_{2.5}$ (Fugitive Dust)	Best Management Practices (BMPs)[1]	None	None
Local CO	None	9.0 ppm (8-Hour Average), 20.0 ppm (1-Hour Average)	
Risks and Hazards for New Sources and Receptors (Cumulative Threshold)	Same as Operational Thresholds	• Cancer Risk: > 100 In a Million (From All Local Sources) • Non-Cancer: > 10.0 Hazard Index (Chronic, From all Local Sources) • $PM_{2.5}$: > 0.8 µg/m^3 Annual Average (From All Local Sources)	OR Compliance with Qualified Community Risk Reduction Plan

Pollutant	Average Daily Emissions (lb/day), Construction	Average Daily Emissions (lb/day), Operation	Maximum Annual Emissions (TPY), Operation
Risks and Hazards for New Sources and Receptors (Individual Project)	Same as Operational Thresholds	• Increased Cancer Risk >10.0 In a Million • Increased Non-Cancer > 1.0 Hazard Index (Chronic or Acute) • $PM_{2.5}$ Increase: > 0.3 µg/m^3 Annual Average	OR Compliance with Qualified Community Risk Reduction Plan
Accidental Release of Acutely Hazardous Air Pollutants	None	Storage or use of acutely hazardous materials located near receptors or new receptors located near stored or used acutely hazardous materials are considered significant.	
Odors	None	Five confirmed complaints per year, averaged over 3 years.	

Source: Bay Area Air District 2022

Notes: [1] PM_{10}/$PM_{2.5}$ (fugitive dust) is also recognized to impact local communities. The Bay Area Air District strongly recommends implementing all feasible fugitive dust management practices, especially when construction projects are located near sensitive communities, including schools, residential areas, or other sensitive land uses. These measures are detailed in Chapter 5, Section 5.2.2, Construction-Related Criteria Air Pollutant Emissions, of the Bay Area Air District 2022 CEQA Guidelines.

SJVAPCD

SJVAPCD significance thresholds are provided in the District's Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI). The GAMAQI includes significance thresholds that are used to evaluate CEQA impacts for criteria pollutants and health risk impacts. The significance thresholds used in this analysis for projects in the SJVAPCD are summarized in Table 3.3-9.

Table 3.3-9. SJVAPCD CEQA Thresholds of Significance

Pollutant	Construction Emissions (TPY)	Operations Emissions, Permitted Equipment and Activities (TPY)	Operations Emissions, Non-Permitted Equipment and Activities (TPY)	Ambient Air Quality Project Risk (APR-2030) Threshold[1] (lb/day)
CO	100	100	100	100
NO_x	10	10	10	100
VOC	10	10	10	100
SO_x	27	27	27	100
PM_{10}	15	15	15	100
$PM_{2.5}$	15	15	15	100
TACs (Including Carcinogens and Non-Carcinogens)	Maximally Exposed Individual risk equals or exceeds 20 in one million.			
	Acute: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual.			
	Chronic: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual.			

Pollutant	Construction Emissions (TPY)	Operations Emissions, Permitted Equipment and Activities (TPY)	Operations Emissions, Non-Permitted Equipment and Activities (TPY)	Ambient Air Quality Project Risk (APR-2030) Threshold[1] (lb/day)
Odors	• Project has the potential to expose sensitive receptors within 1 mile of an odor source and create a nuisance odor impact. • The SJVAPCD defines a significant odor problem as more than one confirmed complaint per year or three unconfirmed complaints per year, averaged over a three-year period.			

Source: SJVAPCD 2015a-c, SJVAPCD 2018.
[1]Threshold for construction or operation.

SCAQMD

The SCAQMD has established CEQA significance thresholds for criteria pollutants and health risk impacts. These thresholds are used to evaluate the significance of project-related emissions and exposure impacts within the South Coast Air Basin. The thresholds used in this analysis for projects in the SCAQMD are summarized in Table 3.3-10.

Table 3.3-10. SCAQMD CEQA Thresholds of Significance

Pollutant	Construction Emissions (lb/day)	Operations Emissions (lb/day)
ROG (VOC)	75	55
NO_X	100	55
CO	550	550
SO_x	150	150
PM_{10}	150	150
$PM_{2.5}$	55	55
24-Hour $PM_{2.5}$ Increment	10.4 µg/m^3	2.5 µg/m^3
24-Hour PM_{10} Increment	10.4 µg/m^3	2.5 µg/m^3
Annual PM_{10} Increment	1.0 µg/m^3 Annual Average	
1-Hour NO_2 Increment	0.18 ppm (State)	
Annual NO_2 Increment	0.03 ppm (State) & 0.0534 ppm (Federal)	
1-Hour SO_2 Increment	0.25 ppm (State) & 0.075 ppm (Federal – 99th percentile)	
24-Hour SO_2 Increment	0.04 ppm (State)	
24-Hour Sulfate Increment	25 ug/m^3 (State)	
1-Hour CO Increment	20 ppm (State) & 35 ppm (Federal)	
8-Hour CO Increment	9.0 ppm (State/Federal)	
TACs (Including Carcinogens and Non-Carcinogens)	• Maximum Incremental Cancer Risk ≥10 in 1 Million • Cancer Burden >0.5 Excess Cancer Cases (In Areas ≥1 in 1 Million) • Chronic and Acute Hazard Index ≥1.0 (Project Increment)	
Odors[1]	Project creates an odor nuisance pursuant to Rule 402.	

Source: SCAQMD 2023
[1]Note: The SCAQMD Rule 1133 Staff Report identifies a recommended setback distance of approximately a one / fourth-mile between composting operations and sensitive receptors (SCAQMD 2011). Although this recommendation is not a CEQA significance threshold, it was considered in the development of the odor impact analysis and BMP recommendations presented herein.

SDAPCD

The SDAPCD has not adopted CEQA significance thresholds for evaluating air quality or health risk impacts; instead, the SDAPCD recommends that CEQA Lead Agencies rely on Screening-Level Thresholds (SLTs) developed by San Diego County to evaluate air quality impacts under CEQA. The County's SLTs are based on SDAPCD Air Quality Impact Assessment (AQIA) screening criteria, EPA guidance, and significance thresholds adopted by other California air districts. The thresholds used in this analysis for projects in San Diego County are summarized in Table 3.3-11.

Table 3.3-11. SDAPCD AQIA Screening Criteria

Air Contaminant	lb/hr	lb/day	TPY
PM_{10}	–	100	15
$PM_{2.5}$	–	55	10
NO_x	25	250	40
SO_x	25	250	40
CO	100	550	100
ROG	–	75	13.7
DPM	Excess Cancer Risk >1 in 1 million; Chronic or Acute Hazard Index >1.0		
Local CO	• Project would not place sensitive receptors within 500 feet of a signalized intersection operating at Level of Service (LOS) E or worse with more than 3,000 peak-hour trips; and • Project would not cause an intersection with more than 3,000 peak-hour trips to operate at LOS E or worse.		
Odors	Project would generate objectionable odors resulting in a public nuisance pursuant to SDAPCD Rule 51.		

Source: San Diego County 2007.

Issues Not Discussed Further

No issues related to air quality are dismissed from further analysis.

Environmental Impacts and Mitigation Measures

Impact 3.3-1: Compliance with Air Quality Management Plans

Development of small and medium composting facilities and operations under the program would be compliant with statewide plans and programs that serve to reduce air pollution. Plans and programs applicable to the proposed program include the Mobile Source Strategy and the Short-Lived Climate Pollutant (SLCP) Reduction Strategy. This impact would be **less than significant**.

Discussion

Organic waste management plays an important role in California's climate strategy. SB 1383 established Statewide targets to reduce the disposal of organic waste and recover edible food, thereby reducing CH_4 emissions associated with decomposition of landfilled organic materials. The Statewide composting program evaluated in this report is intended to support implementation of SB 1383 by facilitating the development of additional composting capacity throughout California.

The current Bay Area Air District Air Quality Management Plan (AQMP) was prepared in 2017. Objectives of the plan include composting organic waste and reducing CH_4 emissions from landfills. This program would support these objectives (Bay Area Air District 2017).

The SJVAPCD has plans for PM and O_3. The latest plans are the 2024 Plan for the 2012 Annual $PM_{2.5}$ Standard and the 2022 Plan for the 2015 8-Hour Ozone Standard. The 2024 plan for $PM_{2.5}$ states that composting is an alternative to open burning, which would reduce $PM_{2.5}$ from open burning. The 2022 plan for O_3 notes that SJVAPCD Rule 4566 regulates emissions from composting facilities. Projects in the SJVAPCD are expected to comply with this rule. Therefore, this program does not interfere with the implementation of the current air quality plans from SJVAPCD (SJVAPCD 2024 and SJVAPCD 2022).

The current SCAQMD AQMP was prepared in 2022. This plan notes that composting activities are a source of VOCs and NH_3. The plan notes that composting facilities are regulated by Rules 1133, 1133.1, 1133.2, and 1133.3. Projects in the SCAQMD are expected to comply with these rules. Therefore, this program does not interfere with the implementation of the current SCAQMD AQMP (SCAQMD 2022 and SCAQMD 2011).

The SDAPCD has plans for attaining O_3 standards in San Diego and a general regional air quality plan. The latest plans are the 2020 Plan for Attaining the National Ambient Air Quality Standards (NAAQS) for Ozone in San Diego County, and the 2022 Regional Air Quality Strategy (RAQS). Compost activities are not discussed in the 2020 plan for O_3 attainment. Diversion of organic waste from landfills is expected to reduce VOC emissions from landfills; reducing VOC emissions from landfills is a goal in the 2020 O_3 plan. The 2022 RAQS includes a goal to incentivize low-carbon farming techniques, such as composting. It also notes that rules may be required for composting activities, as such activities increase in the region. Projects in the SDAPCD are expected to comply with all relevant rules intended to reduce VOC emissions and O_3 levels. Therefore, this program supports the objective of increasing composting in the 2022 RAQS and does not interfere with the implementation of SDAPCD air quality plans (SDAPCD 2020, 2022). Impacts would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.3-2: Short-Term Construction-Related Emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$

Construction of small and medium composting facilities and operations as part of the program would result in ground-disturbing activities and require use of heavy-duty equipment. These activities would generate emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$. For the representative facility/operation scenarios evaluated in this EIR, construction-generated emissions of criteria pollutants and precursors are not expected to exceed local air districts' thresholds of significance and would be less than significant. However, because future facility locations and receptor distances are unknown, localized construction air quality impacts may occur when receptors are located closer than 165 feet from construction activities. Impacts are considered **potentially significant**.

Discussion

Construction-related criteria pollutant emissions were compared to the applicable significance thresholds for the Bay Area Air District, SJVAPCD, SCAQMD, and SDAPCD. Construction emissions for the representative small and medium composting facility/operation scenarios would not exceed applicable air district significance thresholds for criteria pollutants. Detailed emissions and significance evaluations are shown Tables 3-5 through 3-10 of Appendix B.

However, localized air quality impacts were also evaluated per the SCAQMD's Localized Significance Threshold Methodology (SCAQMD 2008). Because specific facility/operation locations and nearby sensitive receptor locations have not been and cannot be identified, project-specific Localized Significance Threshold (LST) analyses cannot be conducted at the program level. Therefore, the localized air quality analysis applied SCAQMD LSTs using a receptor distance of 165 feet, which is representative of the minimum distance likely to occur between future composting operations and nearest receptors. Two-acre LSTs were conservatively used for the small (5-acre) operation scenario to represent a reasonable upper-bound daily construction disturbance area for facilities of this size. Five-acre LSTs were used for the medium facility scenario because active construction disturbance is not expected to exceed five acres on any given day. The LST results, which are provided in Tables 3-8 and 3-9 of Appendix B, show that localized emissions from construction from the representative small and medium compost facilities, would be below the LST at the nearest receptors of 165 feet. Because SCAQMD LSTs increase as the distance to the nearest sensitive receptor increases, the use of a 165-foot receptor distance provides a conservative assessment of localized impacts. Composting facilities and operations with receptors located farther than 165 feet from construction activities would be evaluated using less stringent LST thresholds and would generally be expected to have lower localized impacts. Site-specific localized impact analyses may be warranted during subsequent project-level environmental review where receptors are located closer than assumed in this analysis or where project conditions differ substantially from the representative facility/operation scenarios.

Construction-related criteria pollutant emissions would not exceed the applicable significance thresholds for either the small-sized operation or medium-sized facility scenarios in any of the four air districts evaluated as proxy for the statewide program. Therefore, construction-related criteria pollutant impacts for representative facility/operation scenarios assuming a nearest receptor distance of 165 feet would be less than significant. Refer to Appendix B for additional information regarding the projected construction emissions. For composting facilities and operations with receptors located closer than 165 feet from construction activities, localized construction air quality impacts are conservatively assumed to be potentially significant.

Mitigation Measures

Mitigation Measure 3.3-1: Conduct Project-Specific Localized Air Quality Analyses for Facilities with Receptors Located Within 165 Feet of Construction Activities

For proposed composting facilities and operations with receptors located closer than 165 feet from construction activities and within an air district that assesses localized significance thresholds, the project proponent shall conduct a project-specific localized air quality analysis prior to local agency approval to demonstrate compliance with applicable localized significance thresholds. Any measures identified in the analysis and determined necessary to reduce such that no significant, temporary health risks occur shall be incorporated into the project and implemented.

Significance After Mitigation

Because the applicability and effectiveness of mitigation measures identified through project-specific localized air quality analyses cannot be determined at the program level, impacts are conservatively identified as **significant and unavoidable** for composting facilities and operations with receptors located closer than 165 feet from construction activities.

Impact 3.3-3: Long-Term Operational Emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$

Operation of small and medium composting facilities and operations would result in reductions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ associated with the diversion of organic materials from landfills to composting facilities and operations with the capacity to implement strategies to reduce such emissions. However, composting facilities and operations would also generate air pollution from the composting operations, material handling (including grinding and screening), and on- and off-road mobile vehicles. Therefore, composting facilities and operations would generate emissions of criteria pollutants and precursors, which could contribute to an exceedance of an air quality standard. These emissions could surpass the applicable thresholds of significance of a local air district and lead to adverse health impacts related to exposure of criteria pollutants. Therefore, operation-related air quality impacts would be **potentially significant**.

Discussion

Air districts are responsible for establishing and enforcing local thresholds of significance for projects undergoing CEQA review. For those air districts with adopted, numerical thresholds of significance, these thresholds are developed in consideration of maintaining or achieving attainment under the NAAQS and CAAQS, which are concentrations of criteria pollutants intended to reduce potential human health impacts related to exposure. Projects that demonstrate operational emissions below the appropriate air districts' thresholds of significance would not degrade regional air quality and would thus minimize potential human health impacts.

The following project features and regulatory requirements are incorporated into the representative facility/operation scenarios and were considered in the evaluation of operation-related air quality impacts:

- Project proponents would comply with the CAA and CAAA (e.g., NSR and BACT criteria, if applicable); and
- Project proponents would comply with local plans, policies, ordinances, rules, and regulations regarding air quality–related emissions and associated exposure (e.g., indirect source review, vehicle idling limitations, and payment into off-site mitigation funds).

Operational impacts were evaluated based on the estimated emissions presented in this report and compared against quantitative criteria established by the Bay Area Air District, SJVAPCD, SCAQMD, and SDAPCD. These criteria are relied upon to make significance determinations based on mass emissions of criteria pollutants.

For the SCAQMD, localized air quality impacts were also evaluated. Because specific facility locations and nearby sensitive receptor locations have not been identified, project-specific LST analyses cannot be conducted at the program level. Therefore, the localized air quality analysis applied SCAQMD LSTs using a receptor distance of 165 feet, which is representative of the minimum distance likely to occur between future composting operations and nearest receptors. Five-acre LSTs were used for all scenarios. Because SCAQMD LSTs become less stringent as receptor distance increases, this analysis is conservative for facilities located more than 165 feet from the nearest sensitive receptor. Site-specific localized analyses would be conducted, as appropriate, during subsequent project-level environmental review.

VOC significance threshold exceedances were identified for small-sized windrow operations in the SCAQMD and SDAPCD, medium-sized windrow facilities in the SCAQMD, medium-sized positive CASP facilities in the SDAPCD, and medium-sized negative ASP with filter facilities in the Bay Area Air District. LST screening level exceedances were also identified in the SCAQMD for medium-sized facilities.

Although there would be substantial reductions in air emissions from landfills due to the diversion of organic waste to composting, because emissions of air pollutants from the operation of new small and medium composting facilities and operations could exceed the screening thresholds of significance in the Bay Area Air District, SCAQMD, and SDAPCD, operational-related air quality impacts associated with the program would be potentially significant. Detailed evaluations comparing the operating emissions for each of the six operating scenarios in each of the four air districts are provided in Appendix B, Tables 3-11 through 3-16. Table 3.3-12 summarizes the significance determinations for the six operating scenarios and 4 air districts.

Table 3.3-12. Summary of Significance Determination for 6 Scenarios in 4 Air Districts

Air District	Scenario 1 Small Windrow	Scenario 2 Small Positive CASP	Scenario 3 Small Negative ASP with Filter	Scenario 4 Medium Windrow	Scenario 5 Medium Positive CASP	Scenario 6 Medium Negative ASP with Filter
Bay Area Air District	LTS	LTS	LTS	LTS	LTS	PS
SJVAPCD	LTS	LTS	LTS	LTS	LTS	LTS
SCAQMD	PS	LTS	LTS	PS	PS	PS
SDAPCD	PS	LTS	LTS	LTS	PS	LTS

LTS: Less Than Significant
PS: Potentially Significant

Mitigation Measures

Mitigation Measure 3.3-3: Assess Site-Specific Emissions and Implement Feasible On- and Off-Site Mitigation Measures to Reduce Operation-Related Emissions

During initial project planning and prior to local agency approval, the project proponent shall submit a site-specific assessment of the potential air emissions associated with development and operation of the proposed facility/operation. The assessment shall be reviewed and accepted by both the local agency staff and applicable air district prior to local agency approval. Should a project identify an exceedance of an applicable significance threshold, the project proponent shall implement feasible emissions reduction measures agreed upon by the applicable air district and local agency with primary authority over the proposed facility/operation. Such measures may include participation in voluntary air district emission reduction programs, implementation of additional emission controls (e.g., upgrading from a windrow design to an ASP design), acquisition of additional emission reduction credits (over and above what is required by regulation), or other air-district-approved measures sufficient to reduce emissions.

For individual facilities/operations proposed within SCAQMD, the assessment shall include an evaluation of the project compared to applicable LSTs. This may include a comparison to LST screening thresholds or refined dispersion modeling, whichever is appropriate, to demonstrate compliance with applicable air quality significance thresholds. Any measures identified through the analysis and determined necessary to reduce impacts shall be incorporated into the project and implemented.

Significance After Mitigation

Because the effectiveness and applicability of mitigation measures and project-specific analyses cannot be determined at the program level, impacts are conservatively identified as **significant and unavoidable**.

Impact 3.3-4: Exposure of Sensitive Receptors to Mobile-Source CO Concentrations

The development and operation of small and medium composting facilities and operations would result in increased vehicle miles travelled (VMT) associated with the movement of organics to new compost facilities/operations. CO would be emitted from vehicles associated with new composting projects; however, this increase in VMT would be dispersed throughout the state and would not result in substantial localized increases in CO. Further, technological advancements in internal combustion engines have substantially decreased CO emissions over the past decade. This impact would be **less than significant**.

Discussion

Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. As a pollutant that disperses rapidly under normal meteorological conditions, CO emissions produce localized impacts. However, under certain meteorological conditions, CO concentrations near roadways and/or intersections may increase to unhealthy levels at nearby sensitive land uses, such as residential units, hospitals, schools, and childcare facilities. As a result, air districts typically recommend that CO be analyzed at the local level rather than the regional level.

The proposed program could result in an increase in vehicle travel related to the movement of organics to compost facilities; however, vehicle travel would be distributed Statewide. It is also anticipated that vehicle travel to local landfills would decline as a result of the program. Due to the small size of these facilities and operations, which require relatively few truck trips for feedstock and compost delivery and limited employment, the additional vehicle trips per hour on local roads are not expected to result in a substantial increase in CO concentrations resulting in adverse impacts compared to existing baseline conditions.

Additionally, the efficacy of catalytic converters in internal combustion engines has substantially reduced emissions of CO, as compared to previous generations of internal combustion engines. Other technological improvements, including the use of on-board computers, as well as inspection requirements, have further reduced CO emissions. CO emissions are anticipated to continue to decline as Statewide programs transition the transportation sector to electric vehicles that do not emit CO (CalRecycle 2019:3.3-32). Therefore, CO impacts to sensitive receptors would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.3-5: Exposure of Sensitive Receptors to TAC Emissions

Construction of organic waste recovery facilities and operations could generate short-term emissions of DPM; however, emissions would be temporary. Construction of a composting operation/facility is estimated to last less than one year per facility. Operation of new small and medium composting facilities and operations would result in reductions in emissions of TACs as compared to existing conditions at landfills. However, TACs generated by new facilities/operations would constitute a stationary source and would be subject to the permitting requirements set by the appropriate air district. It is foreseeable that emissions volatile organic TAC from composting operations and diesel particulate matter from on- and off-road vehicles could result in localized air quality impacts. This impact would be **potentially significant**.

Discussion

Construction of the representative facility/operation scenarios is expected to occur over a period of less than one year. Construction-related emissions would be short-term and temporary and would not result in long-term exposure. Further, due to siting and other land use considerations, small and medium composting facilities and operations are unlikely to be sited near residential or other sensitive receptors such that temporary health risks associated with TAC emissions could occur. As a result, construction-related TAC emissions are not anticipated to affect nearby sensitive receptors during facility/operation development, and impacts would be less than significant.

To assess the potential health risks from a project to sensitive receptors during operation, the TAC emissions from development under the program are assessed in accordance with OEHHA HRA guidelines. This analysis is based on the OEHHA "Hot Spot" guidance document (OEHHA 2015) and the California Air Pollution Control Officers Association (CAPCOA) "Air Toxics 'Hot Spots' Program Facility Prioritization Guidelines" (CAPCOA 2016).

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 TAC potency, toxicity, quantity of emissions, and proximity to sensitive receptors, such as hospitals, schools, daycare centers, worksites, and residences.

Prioritization Scores were calculated using the Emissions and Potency Procedure in the CAPCOA's guidelines. Emission data are combined with applicable OEHHA health values and receptor distance adjustment factors to calculate separate Prioritization Scores for residential cancer, worker cancer, chronic non-cancer, and acute non-cancer risk. The worker cancer Prioritization Score was calculated using the SDAPCD method of applying a 0.3 factor to the residential cancer Prioritization Score.

- Residential Cancer Risk: Evaluates health risk from lifetime exposure to emissions at residential and sensitive receptor locations. Sensitive receptors include hospitals, K-12 schools, daycare centers, and elder care facilities. Residential cancer risk is typically assessed using a 30-year exposure duration.
- Worker Cancer Risk: Evaluates health risk from long-term exposure to individuals at long-term business locations. Worker cancer risk is typically assessed using a 25-year exposure duration.
- Chronic Risk: Evaluates health risk from long-term (1-year or more) exposure to emissions. Chronic receptors include locations where an individual could reasonably be expected to spend time over the better part of the year.
- Acute Risk: Evaluates health risk from short-term (1-hour) exposure to emissions. Acute receptors include any location where an individual could reasonably be present for at least 1 hour during a day, which is typically interpreted to include facility fencelines.

TAC emission sources include the DPM emissions from the diesel engines used to screen and grind waste materials and compost, on-road haul trucks, and off-road mobile equipment (e.g., loaders), and NH_3 and organic TACs from composting activities, and toxic components of dust from material handling activities and road dust. TAC emissions calculation methodology and detailed calculations are provided in Appendix B.

To assess the potential health risk from the six operating scenarios, Prioritization Scores were calculated at various receptor distances using the TAC emissions estimated for that scenario. Additionally, receptor distances were back-calculated for each scenario to determine the minimum distances at which the facility would be

classified as high, intermediate, or low priority based on the applicable Prioritization Score thresholds. Results by scenario and distance are presented in Attachment 3 of Appendix B.

Each air district sets their Prioritization Score thresholds and these should be used for project-specific evaluation. Table 3.3-13 summarizes the thresholds for the four districts reviewed.

Table 3.3-13. Prioritization Score Thresholds

Air District	Prioritization Score Threshold Category	Prioritization Score Cancer Risk Thresholds	Prioritization Score Chronic/Acute Risk Threshold	Significance Threshold Category
Bay Area Air District, SJVAPCD, and SCAQMD	High	≥10	≥10	PS
	Intermediate	≥1 and <10	≥1 and <10	PS
	Low	<1	<1	LTS
SDAPCD	High	≥100	≥10	PS
	Intermediate	≥1 and <100	≥1 and <10	PS
	Low	<1	<1	LTS

The significance of the thresholds are described below:

- High Score: Projects having a high Prioritization Score may have high risk. A refined HRA is recommended to determine if a project's TAC emissions would have significant health risk impacts. Thus, this score is considered to have a Potentially Significant human health impact and would necessitate a more detailed analysis for a project-level CEQA review.
- Intermediate Score: Projects with an intermediate prioritization score, may require further analysis to determine if the project's TAC emissions would have significant health risk impacts. Many air districts consider projects with an intermediate Prioritization Score to be unlikely to have an adverse health risk, although some districts may require additional analysis. Consultation with the local air district or lead agency would be required to determine if the project's TAC emissions have a less than significant human health impact. Therefore, this score is considered to have a Potentially Significant impact on human health and would necessitate a more detailed analysis for a project-level CEQA review.
- Low Score: Projects with a low prioritization score are unlikely to have an adverse health risk, thus are considered to have a less than significant human health impact.

In cases where the TAC emissions result in a Prioritization Score of Intermediate or High, project proponents should conduct HRA modeling pursuant to the most recent guidance published by OEHHA. The HRA should incorporate TAC emissions from the proposed TAC sources, including mobile and stationary sources. The HRA modeling would estimate the project-related residential and worker cancer risk, and chronic and acute non-cancer risks. These risks should be compared to the applicable HRA thresholds, such as those outlined in Tables 3-1 through 3-4 of Appendix B.

Table 3.3-14 summarizes the minimum distances to residential and worker receptors required to achieve a less than significant impact for each scenario. These distances were determined using the Prioritization Score calculation methodology and the low priority score threshold of less than significant, which is the same across all air districts evaluated, as well as most other districts.

For example, under Scenario 1, if there are no residential receptors within 2,185 feet, or worker receptors within 1,200 feet of the facility, the project would be considered to have a less than significant impact. If there are residential receptors within 2,185 feet, or worker receptors within 1,200 feet, the project would be considered to have a potentially significant impact. The same interpretation applies to the remaining scenarios using the corresponding distances shown in Table 3.3-14. A more comprehensive analysis for each scenario is provided in Appendix B.

Table 3.3-14. Minimum Distances to Residential and Worker Receptors for Less Than Significant Impact by Scenario for 4 Air Districts

Scenario	Minimum Distance (feet)	Minimum Distance (feet)
1	2,185	1,200
2	1,906	1,043
3	1,873	1,027
4	3,268	1,791
5	2,792	1,529
6	2,740	1,499

Note: Residential and worker receptor distances correspond to the residential cancer risk and worker cancer risk thresholds, respectively. For all scenarios, the calculated acute and chronic non-cancer risk set-back distances were less than the corresponding cancer risk set-back distances; therefore, cancer risk is the limiting criterion. Compliance with the cancer risk set-back distance also ensures compliance with the acute and chronic non-cancer risk distance thresholds.

Mitigation Measures

Mitigation Measure 3.3-5: Conduct a Health Risk Assessment and Implement On Site TAC-Reducing Mitigation Measures

For any project that does not satisfy the minimum setback distance (based on size and facility type) identified in Table 3.3-14, the project proponent shall prepare and submit to the local agency and local air district a project-specific HRA to determine whether the proposed facility/operation poses a potential health risk to nearby receptors. If the HRA modeling determines that a project would pose a potential health risk to residents or workers, project-specific measures as recommended by the HRA shall be implemented to avoid or minimize impacts from operation-related TAC emissions. These may include but are not limited to the following:

- Project proponents shall consider use of a different composting method that results in lesser TAC emissions (e.g., Negative ASP with a filter versus windrows);
- Project proponents shall use additional components either as a component of the compost mix or as a surface layer to reduce on-site emissions (e.g., biochar);
- Project proponents shall install diesel particulate filters or implement other CARB-verified diesel emission control strategies for heavy-duty equipment;
- Project proponents shall apply EPA Tier 3 or 4 emissions standards to off-road heavy-duty equipment;
- Project proponents shall use haul trucks with on-road engines instead of off-road engines for on-site hauling;
- Project proponents shall establish an electricity supply and use electric-powered equipment instead of diesel-powered equipment, if feasible;

- Project proponents shall apply on-road diesel PM mitigation measures consistent with CARB's Diesel Certification Program; and
- Project proponents shall utilize renewable natural gas to power on-road vehicles accessing future Project sites.

Significance After Mitigation

With implementation of Mitigation Measure 3.3-5, it is reasonable to expect that impacts would be reduced to a less-than-significant level by land use and/or permitting agency conditions of approval; however, the potential for health risks associated with operation of small and medium composting facilities and operations under the program cannot be precluded as certain site-specific conditions and/or feasibility concerns associated with certain emission reductions may limit the ability to further reduce TAC emissions. Therefore and for the purposes of CEQA compliance, this impact would be considered **significant and unavoidable**.

Impact 3.3-6: Exposure of Sensitive Receptors to Odors

Adverse odors could be generated by activities performed at a new small or medium composting facility/operation, including odors emitted during handling of feedstock materials and the off-gassing of odors generated during the decomposition of organic materials. As a result, odor impacts would be **potentially significant**.

Discussion

Construction activities are not a substantial source of objectionable odors. Temporary exhaust emissions from construction equipment may be noticeable in the immediate vicinity of active construction areas, but such emissions would be localized and short-term in duration. Accordingly, construction-related odor impacts would be less than significant.

With respect to operation, composting facilities and operations have the potential to generate objectionable odors associated with feedstock handling, active composting, curing, screening, product storage, and other operational activities. The magnitude of potential odor impacts depends on facility size, composting technology, operating practices, meteorological conditions, and the proximity of sensitive receptors. Objectionable odors stem from emissions of VOCs and compounds high in nitrogen and/or sulfur emitted from the decomposition of food waste, liquid waste, manures, and biosolids. A common odor from composting activities is characterized as being similar to the smell of rotten eggs. In addition to the composition of feedstocks, the management and aeration of feedstocks affect the production of adverse odors. Properly aerated feedstock piles balance the carbon and nitrogen content of organics and ensure that particles are large enough to allow airflow, which mitigates the release of odors.

As noted in Section 3.3.1, Title 14 of CCR Section 17863.4 requires that an operator of an odor source (including composting facilities and operations) prepare an OIMP, which would serve to prevent odors from occurring and to plan in advance the appropriate mitigation measures required to reduce odor impacts. An OIMP also contains the site's complaint investigation procedures, notification to the LEA, and emergency procedures for the cease and desist of any operations that cause odor impacts (14 CCR Section 17863.4). Best Management Practices (BMPs) would be incorporated into the OIMP for each facility/operation to minimize odors. BMPs may also be incorporated into permit conditions by the air districts for permitted facilities or implemented voluntarily by a facility as a BMP to minimize odor impacts. Future facilities and operations would be subject to applicable local

plans, policies, regulations, and development standards, including any applicable setbacks or buffer zones for potentially odorous operations, as part of project approval and environmental review processes.

While proper site selection, implementation of the required OIMP, and adoption of the appropriate BMPs (either required by permit conditions or adopted voluntarily), would generally be expected to reduce odor impacts to a less-than-significant level, future facility locations, operational characteristics, proximity to sensitive receptors, and the need for and effectiveness of site-specific odor control measures cannot be determined at the program level. Therefore, the potential for significant odor impacts cannot be ruled out for all future facilities, and odor impacts are conservatively considered potentially significant.

Mitigation Measures

Mitigation Measure 3.3-6: Odor Impact Minimization Plan

Pursuant to 14 CCR 17863.4 and 17896.31, project proponents shall prepare an OIMP to mitigate adverse odor impacts as a condition of local agency approval. The OIMP shall evaluate and provide evidence as to the need and/or infeasibility of odor BMPs, including but not limited to the following:

- Site selection: Odor impacts can be minimized by ensuring that the site selected for a new compost facility/operation is sufficiently distant from potential receptors. The SJVAPCD GAMAQI recommends a setback distance of 1 mile for a compost facility/operation from potential receptors (SJVAPCD 2015a), which may be unreasonable for many potential compost sites. The GAMAQI has applied that setback distance for several decades, beginning when windrow technology dominated the composting industry, pre-dating modern ASP composting techniques. A modern ASP compost facility/operation would typically have 80% lower emission levels than a comparably sized windrow facility. Accordingly, a 1-mile setback distance may be appropriate for a windrow facility, but is unnecessary for an ASP facility. In its Rule 1133 staff report, the SCAQMD recommends a quarter-mile setback distance (SCAQMD 2011), which would be more appropriate for an ASP facility.
- Feedstock storage limitation: Although feedstock composition can determine odor to a large extent, management practices can also have a large impact, and in some cases mitigate odor production.
    - Offensive odors from manure, food, and liquid waste can be minimized by incorporating the waste into a compost pile on the same day they are received.
- Limiting feedstock storage of green waste and biosolids prior to introducing the material into the compost pile will reduce the occurrence of decomposition, reducing emissions and odors. The BACT standard in air districts that impose permit requirements on feedstock storage is two days.
- Develop a compost blend to optimize conditions. This will be based on the projected feedstocks and proportion of feedstocks for each operation.
    - Balancing the carbon and nitrogen of the initial feedstock, and mixing different types of organic material in quantities to achieve a carbon to nitrogen ratio at a range between 20:1 to 40:1;
    - Ensuring particle size is large enough to allow airflow. This can be accomplished by blending woodchips into dense feedstocks.
    - Add water to the feedstock, as needed, to maintain a moisture content between 40% to 60%.
- Well-constructed, properly aerated static compost piles produce fewer odors.

  - Forcing air through the piles, using either a positive aeration system (pushing air up through the pile) or negative aeration system (pulling air down through the pile) maintains aerobic conditions within the piles.
  - Turning or aerating a windrow at a frequency to maintain a center pile temperature between 110 °F to 140 °F or an oxygen content greater than 5% will minimize odor emissions.

- Covering piles using breathable fabrics (e.g., the Gore® system) or a finished compost biofilter layer reduces odors as well as VOCs and NH_3 emissions from the piles. The finished compost biofilter layer on compost piles for a positively aerated CASP, or a fixed bed biofilter (mulch, engineered fill, or other binding material) for negatively aerated ASP, further reduces emissions.
- Ensure that the biofilter layer (positive aeration) or the fixed bed biofilter (negative aeration) is properly wetted at all times using a sprinkler system.
- Aerate water retention basins to reduce the occurrence of strong odors (CIWMB 2007:27-38).

Significance After Mitigation

It is reasonable to expect that impacts would be reduced to a less-than-significant level through development and implementation of an OIMP for each composting facility/operation; however, the potential for odors associated with operation of small and medium composting facilities and operations under the program cannot be precluded as certain site-specific conditions and/or feasibility concerns may limit the ability to further reduce odor emissions such that they would not result in perceivable odors and odor complaints to the local agency. Therefore and for the purposes of CEQA compliance, this impact would be considered **significant and unavoidable**.

3.4 Archaeological, Historical, and Tribal Cultural Resources

This section analyzes and evaluates potential program impacts on known and unknown archaeological, historical, and Tribal cultural resources. Cultural resources include districts, sites, buildings, structures, or objects generally older than 50 years and considered to be important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. They include prehistoric resources and historic-period resources. Archaeological resources are locations where human activity has measurably altered the earth or left deposits of prehistoric or historic-period physical remains (e.g., stone tools, bottles, former roads, house foundations). Historical (or built environment) resources include standing buildings (e.g., houses, barns, outbuildings, cabins) and intact structures (e.g., dams, bridges, roads, districts), or landscapes. A cultural landscape is a geographic area (including both cultural and natural resources and the wildlife therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values.

Tribal cultural resources, as defined by Assembly Bill (AB) 52, Statutes of 2014, in Public Resources Code (PRC) Section 21074, are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a Tribe. A Tribal cultural landscape is defined as a geographic area (including both cultural and natural resources and the wildlife therein) associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values important to California Native American Tribes.

Two comment letters addressing archaeological, historical, and Tribal cultural resources were received in response to the Notice of Preparation. They requested evaluation of potential impacts in accordance with the requirements of AB 52 and encouraged contacting potentially interested Tribal representatives. In addition, the comments requested guidance to be provided in the EIR regarding unexpected discoveries of subsurface resources and Tribal coordination.

3.4.1 Regulatory Setting

Federal

National Register of Historic Places

The National Register of Historic Places (NRHP) is the nation's master inventory of known historic properties. It is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.

The formal criteria (36 Code of Federal Regulations 60.4) for determining NRHP eligibility are as follows:

1. The property is at least 50 years old (however, properties under 50 years of age that are of exceptional importance or are contributors to a district can also be included in the NRHP);
2. It retains integrity of location, design, setting, materials, workmanship, feeling, and associations; and
3. It possesses at least one of the following characteristics:

   Criterion A Is associated with events that have made a significant contribution to the broad patterns of history (events).

   Criterion B Is associated with the lives of persons significant in the past (persons).

Criterion C Embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant, distinguishable entity whose components may lack individual distinction (architecture).

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

For a property to retain and convey historic integrity it must possess most of the seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. Location is the place where the historic property was constructed or the place where a historic event occurred. Integrity of location refers to whether the property has been moved since its construction. Design is the combination of elements that create the form, plan, space, structure, and style of a property. Setting is the physical environment of a historic property that illustrates the character of the place. Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. This is an intangible quality evoked by physical features that reflect a sense of a past time and place. Association is the direct link between an important historic event or person and a historic property. Continuation of historic use and occupation help maintain integrity of association.

Listing in the NRHP does not entail specific protection or assistance for a property but it does guarantee consideration in planning for federal or federally assisted projects, eligibility for federal tax benefits, and qualification for federal historic preservation assistance. Additionally, project effects on properties listed in the NRHP must be evaluated under CEQA.

The National Register Bulletin series was developed to assist evaluators in the application of NRHP criteria. For example, National Register Bulletin #36 provides guidance in the evaluation of archaeological site significance. If a property cannot be placed within a particular theme or time period, and thereby lacks "focus," it will be unlikely to possess characteristics which would make it eligible for listing in the NRHP. Evaluation standards for linear features (such as roads, trails, fence lines, railroads, ditches, and flumes) are considered in terms of 4 related criteria that account for specific elements that define engineering and construction methods of linear features: (1) size and length, (2) presence of distinctive engineering features and associated properties, (3) structural integrity, and (4) setting. The highest probability for NRHP eligibility exists in the intact, longer segments, where multiple criteria coincide.

Secretary of the Interior's Standards

The *Secretary of the Interior's Standards for the Treatment of Historic Properties* (Secretary's Standards) provide guidance for working with historic properties. The Secretary's Standards are used by lead agencies to evaluate proposed rehabilitative work on historic properties. The Secretary's Standards are a useful analytic tool for understanding and describing the potential impacts of proposed changes to historic resources. Projects that comply with the Secretary's Standards benefit from a regulatory presumption that they would not result in a significant impact on a historic resource.

In 1992 the Secretary's Standards were revised so they could be applied to all types of historic resources, including landscapes. They were reduced to four sets of treatments to guide work on historic properties:

Preservation, Rehabilitation, Restoration, and Reconstruction. The four distinct treatments are defined as follows:

- **Preservation** focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time.
- **Rehabilitation** acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character.
- **Restoration** depicts a property at a particular period of time in its history, while removing evidence of other periods.
- **Reconstruction** re-creates vanished or non-surviving portions of a property for interpretive purposes.

State

California Register of Historical Resources

All properties in California that are listed in, or formally determined eligible for listing in the NRHP are also listed in the California Register of Historical Resources (CRHR). The CRHR is a listing of State of California resources that are significant in the context of California's history. It is a statewide program with a scope and with criteria for inclusion similar to those used for the NRHP. In addition, properties designated under municipal or county ordinances are also eligible for listing in the CRHR.

A historical resource must be significant at the local, state, or national level under one or more of the criteria defined in the California Code of Regulations Title 15, Chapter 11.5, Section 4850 to be included in the CRHR. The CRHR criteria are tied to CEQA because any resource that meets the criteria below is considered a significant historical resource under CEQA. As noted above, all resources listed in or formally determined eligible for listing in the NRHP are automatically listed in the CRHR.

The CRHR uses four evaluation criteria:

Criterion 1. Is 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 2. Is associated with the lives of persons important to local, California, or national history.

Criterion 3. Embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of a master; or possesses high artistic values.

Criterion 4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

Similar to the NRHP, a historical resource must meet one of the above criteria and retain integrity to be listed in the CRHR. The CRHR uses the same 7 aspects of integrity used by the NRHP.

California Environmental Quality Act

CEQA requires public agencies to consider the effects of their actions on "historical resources," and "unique archaeological resources." Pursuant to PRC Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the

environment." Section 21083.2 requires agencies to determine whether projects would have effects on unique archaeological resources.

Historical Resources

"Historical resource" is a term with a defined statutory meaning (PRC Section 21084.1; State CEQA Guidelines Sections 15064.5[a] and [b]). Under State CEQA Guidelines Section 15064.5(a), historical resources include the following:

1. A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the CRHR (PRC Section 5024.1).
2. A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g), will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3. Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be historically significant if the resource meets the criteria for listing in the CRHR (PRC Section 5024.1).
4. The fact that a resource is not listed in or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to PRC Section 5020.1[k]), or identified in a historical resources survey (meeting the criteria in PRC Section 5024.1[g]) and does not preclude a lead agency from determining that the resource may be a historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

Unique Archaeological Resources

CEQA also requires lead agencies to consider whether projects will affect unique archaeological resources. PRC Section 21083.2(g) states that "unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Public Resources Code Section 21083.2

Treatment options under PRC Section 21083.2(b) to mitigate impacts to archaeological resources include activities that preserve such resources in place in an undisturbed state. PRC Section 21083.2 states in pertinent part:

(a) As part of the determination made pursuant to Section 21080.1, the lead agency shall determine whether the project may have a significant effect on archaeological resources. If the lead agency determines that the project may have a significant effect on unique archaeological resources, the environmental impact report shall address the issue of those resources. An environmental impact report, if otherwise necessary, shall not address the issue of nonunique archaeological resources. A negative declaration shall be issued with respect to a project if, but for the issue of nonunique archaeological resources, the negative declaration would be otherwise issued.

(b) If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. Examples of that treatment, in no order of preference, may include, but are not limited to, any of the following:

  (1) Planning construction to avoid archaeological sites.

  (2) Deeding archaeological sites into permanent conservation easements.

  (3) Capping or covering archaeological sites with a layer of soil before building on the sites.

  (4) Planning parks, greenspace, or other open space to incorporate archaeological sites.

(c) To the extent that unique archaeological resources are not preserved in place or not left in an undisturbed state, mitigation measures shall be required as provided in this subdivision.

(d) Excavation as mitigation shall be restricted to those parts of the unique archaeological resource that would be damaged or destroyed by the project.

(e) In no event shall the amount paid by a project applicant for mitigation measures required pursuant to subdivision (c) exceed the following amounts:

  (1) An amount equal to one-half of 1 percent of the projected cost of the project for mitigation measures undertaken within the site boundaries of a commercial or industrial project.

  (2) An amount equal to three-fourths of 1 percent of the projected cost of the project for mitigation measures undertaken within the site boundaries of a housing project consisting of a single unit.

  (3) If a housing project consists of more than a single unit, an amount equal to three-fourths of 1 percent of the projected cost of the project for mitigation measures undertaken within the site boundaries of the project for the first unit plus the sum of the following:

    (A) Two hundred dollars ($200) per unit for any of the next 99 units.

    (B) One hundred fifty dollars ($150) per unit for any of the next 400 units.

    (C) One hundred dollars ($100) per unit in excess of 500 units.

(f) Unless special or unusual circumstances warrant an exception, the field excavation phase of an approved mitigation plan shall be completed within 90 days after final approval necessary to implement the physical development of the project or, if a phased project, in connection with the phased portion to which the specific mitigation measures are applicable. However, the project applicant may extend that period if he or she so elects. Nothing in this section shall nullify protections for Indian cemeteries under any other provision of law.

Tribal Cultural Resources

CEQA requires public agencies to consider the effects of their actions on "[T]ribal cultural resources." PRC Section 21084.2 establishes that "[a] project with an effect that may cause a substantial adverse change in the significance of a [T]ribal cultural resource is a project that may have a significant effect on the environment." PRC Section 21074 states:

a) "Tribal cultural resources" are either of the following:

1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are either of the following:

A) Included or determined to be eligible for inclusion in the CRHR.

B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American Tribe.

b) A cultural landscape that meets the criteria of subdivision (a) is a Tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a Tribal cultural resource if it conforms with the criteria of subdivision (a).

AB 52, signed by the California Governor in September of 2014, established a new class of resources under CEQA: "[T]ribal cultural resources," defined in PRC Section 21074. Pursuant to CEQA requirements, lead agencies undertaking CEQA review must, upon written request of a California Native American Tribe, begin consultation before the release of an EIR, negative declaration, or mitigated negative declaration.

Health and Safety Code, Section 7050.5

Section 7050.5 of the Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If they are determined to be those of a Native American, the coroner must contact the California Native American Heritage Commission (NAHC).

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act (PRC Section 5097.9) applies to both State and private lands. The act requires, upon discovery of human remains, that construction or excavation activity cease and that the county coroner be notified. If the remains are those of a Native American, the

coroner must notify the NAHC, which notifies (and has the authority to designate) the most likely descendants (MLD) of the deceased. The act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

Public Resources Code Section 5024

The California Legislature enacted PRC Sections 5024 and 5024.5 as part of a larger effort to establish a state program to preserve historical resources. These sections of the code require state agencies to take a number of actions to ensure preservation of state-owned historical resources under their jurisdiction. These actions include evaluating resources for NRHP eligibility and California Historical Landmark eligibility, maintaining an inventory of eligible and listed resources, and managing these historical resources so that they will retain their historic characteristics.

PRC Section 5024(f) requires state agencies to submit to the State Historic Preservation Officer (SHPO) for comment documentation for any project having the potential to affect historical resources under its jurisdiction listed in or potentially eligible for inclusion in the NRHP or are registered or eligible for registration as California Historical Landmarks. The SHPO has 30 days after receipt of the notice for review and comment.

Public Resource Code Section 5097

PRC Section 5097 specifies the procedures to be followed in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American human burials falls within the jurisdiction of the NAHC. Section 5097.5 of the Code states the following:

> *No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.*

Public Resources Code, Section 21080

AB 52, signed by the California Governor in September of 2014, established a new class of resources under CEQA: "Tribal cultural resources" defined in PRC 21074. Pursuant to PRC Sections 21080.3.1, 21080.3.2, and 21082.3, lead agencies undertaking CEQA review must, upon written request of a California Native American Tribe, begin consultation before the release of an environmental impact report, negative declaration, or mitigated negative declaration. PRC Section 21080.3.2 states:

> *Within 14 days of determining that a project application is complete, or to undertake a project, the lead agency must provide formal notification, in writing, to the tribes that have requested notification of proposed projects in the lead agency's jurisdiction. If it wishes to engage in consultation on the project, the tribe must respond to the lead agency within 30 days of receipt of the formal notification. The lead agency must begin the consultation process with the tribes that have requested consultation within 30 days of receiving the request for consultation. Consultation concludes when either: 1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a Tribal cultural resource, or 2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.*

If the lead agency determines that a project may cause a substantial adverse change to a Tribal cultural resource, and measures are not otherwise identified in the consultation process, provisions under PRC Section 21084.3(b) describe mitigation measures that may avoid or minimize the significant adverse impacts.

Local

Given its statewide extent and the possible number of local and regional responsible agencies, this EIR does not identify individual, potentially applicable local government plans, policies, and ordinances. Types of local regulations relevant to archaeological, historic, and Tribal cultural resources may include general plan policies and ordinances protective of these resources. This EIR assumes that implementation of the program would be consistent with local plans, policies, and ordinances to the extent that development of small and medium composting facilities and operations under the program are subject to them, because local land use and permit approvals are typically conditioned upon such consistency.

3.4.2 Environmental Setting

Pre-Contact Overview

California was occupied by different prehistoric cultures dating to at least 12,000 to 13,000 years ago. Evidence for the presence of humans during the Paleoindian Period prior to about 8,000 years ago is relatively sparse and scattered throughout the state; most surface finds of fluted Clovis or Folsom projectile points or archaeological sites left by these highly mobile hunter-gatherers are associated with Pleistocene lakeshores, the Channel Islands, or the central and southern California coast (Rondeau et al. 2007). Archaeological evidence from two of the Northern Channel Islands located off the coast from Santa Barbara indicates the islands were colonized by Paleoindian peoples at least 12,000 years ago, likely via seaworthy boats (Erlandson et al. 2007). By 10,000 years ago, inhabitants of this coastal area were using fishhooks, weaving cordage and basketry, hunting marine mammals and sea birds, and producing ornamental shell beads for exchange with people living in the interior of the state (Erlandson et al. 2007). This is the best record of early maritime activity in the Americas, and combined with the fluted points, indicates California was colonized by both land and sea during the Paleoindian period (Jones and Klar 2007).

With climate changes between 10,000 and 7,000 years ago at the end of the Pleistocene and into the early Holocene, Lower Archaic peoples adjusted to the drying of pluvial lakes, rise in sea level, and substantial alterations in vegetation communities. Approximately 6,000 years ago, vegetation communities similar to those of the present were established in the majority of the state, while the changes in sea level also affected the availability of estuarine resources (Jones and Klar 2007). The archaeological record indicates subsistence patterns during the Lower Archaic and subsequent Middle Archaic Period shifted to an increased emphasis on plant resources, as evidenced by an abundance of milling implements in archaeological sites dating between 8,000 and 3,000 years ago.

Approximately 3,000 years ago, during the Upper Archaic and Late Prehistoric Periods, the complexity of the prehistoric archaeological record reflects increases in specialized adaptations to locally available resources such as acorns and salmon, permanently occupied settlements, and the expansion of regional populations and trade networks (Moratto 1984: 226–227, Jones and Klar 2007). During the Upper Archaic, marine shell beads and obsidian continue to be the hallmark of long-distance trade and exchange networks developed during the preceding period (Hughes and Milliken 2007). Large shell midden/mounds at coastal and inland sites in central and southern California, for example, attest to the regular reuse of these locales over hundreds of years or more

from the Upper Archaic into the Late Prehistoric period. In the San Francisco Bay region alone, over 500 shell mounds were documented in the early 1900s (Moratto 1984: 226–227).

Changes in the technology used to pursue and process resources are some of the hallmarks of the Late Prehistoric period. These include an increase in the prevalence of mortars and pestles, a diversification in types of watercraft and fishhooks, and the earliest recordation of the bow and arrow occurred in both the Mojave Desert and northeast California nearly 2,000 years ago (Jones and Klar 2007). The period also witnessed the beginning of ceramic manufacture in the southeast desert region, southwest Great Basin, and parts of the Central Valley.

During the Late Prehistoric period, the development of social stratification and craft specialization accompanied the increase in sedentism, as indicated by the variety of artifacts, including bone tools, coiled and twined basketry, obsidian tools, marine shell beads, personal ornaments, pipes, and rattles, by the use of clamshell disk beads and strings of dentalium shell as a form of currency, and by variation in burial types and associated grave goods (Moratto 1984: 226–227, Jones and Klar 2007). Pictographs, painted designs that are likely less than 1,000 years old, and other nonportable rock art created during this period likely had a religious or ceremonial function (Gilreath 2007). Osteological evidence points to intergroup conflict and warfare in some regions during this period (Jones and Klar 2007), and there also appears to have been a decline or disruption in the long-distance trade of obsidian and shell beads approximately 1,200 years ago in parts of the state (Hughes and Milliken 2007).

Ethnographic Overview

At the time of European contact, California was the home of approximately 310,000 indigenous peoples with a complex of cultures distinguished by linguistic affiliation and territorial boundaries (Kroeber 1925, Cook 1978, Heizer 1978, Ortiz 1983, d'Azevedo 1986). At least 70 distinct native Californian cultural groups, with even more subgroups, inhabited the vast lands within the state. The groups and subgroups spoke between 74 and 90 languages, plus a large number of dialects (Shipley 1978: 80).

In general, these mainly sedentary, complex hunter-gatherer groups of indigenous Californians shared similar subsistence practices (hunting, fishing, and collecting plant foods), settlement patterns, technology, material culture, social organization, and religious beliefs (Kroeber 1925, Heizer 1978, Ortiz 1983, d'Azevedo 1986). Permanent villages were situated along the coast, interior waterways, and near lakes and wetlands. Population density among these groups varied, depending mainly on availability and dependability of local resources, with the highest density of people in the northwest coast and Santa Barbara Channel areas and the least in the state's desert region (Cook 1976: 4, 38, 43). Networks of foot trails were used to connect groups to hunting or plant gathering areas, rock quarries, springs or other water sources, villages, ceremonial places, or distant trade networks (Heizer 1978).

The social organization of California's native peoples varied throughout the state, with villages or political units generally organized under a headman who was also the head of a lineage or extended family or achieved the position through wealth (Bean 1978). For some groups, the headman also functioned as the religious ceremonial leader. Influenced by their Northwest Coast neighbors, the differential wealth and power of individuals was the basis of social stratification and prestige between elites and commoners for the Chilula, Hupa, Karok, Tolowa, Wiyot, and Yurok in the northwest corner of the state. Socially complex groups were also located along the

southern California coast where differential wealth resulted in hierarchical classes and hereditary village chiefs among the Chumash, Gabrielino, Juaneño, and Luiseño (Bean and Smith 1978, Arnold and Graesch 2004).

At the time of Spanish contact, religious practices among native Californian groups varied, but ethnographers have recognized several major religious systems (Bean and Vane 1978). Many of the groups in the north-central part of the state practiced the Kuksu cult, primarily a ceremonial and dance organization, with a powerful shaman as the leader. Log drums, flutes, rattles, and whistles accompanied the elaborate ceremonial dances. The World Renewal cult in the northwestern corner of the state extended as far north as Alaska, entailed a variety of annual rites to prevent natural disasters and maintain natural resources and individual health, and was funded by the wealthy class. The Toloache cult was widespread in central and southern California and involved the use of narcotic plant (commonly known as datura or jimsonweed) materials to facilitate the acquisition of power. On the southern coast among Takic-speaking groups, the basis of Gabrielino, Juaneño, and Luiseño religious life was the Chinigchinich cult, which appeared to have developed from the Toloache cult. Chinigchinich, the last of a series of heroic mythological figures, gave instruction on laws and institutions, taught people how to dance, and later withdrew into heaven where he rewarded the faithful and punished those who disobeyed his laws. The Chinigchinich religion seems to have been relatively new when the Spanish arrived and could have been influenced by Christianity.

Trade and exchange networks were a significant part of the economy and social organization among California's Native American groups (Heizer 1978). Obsidian, steatite, beads, acorns, baskets, animal skins, and dried fish were among the variety of traded commodities. Inland groups supplied obsidian from sources along the Sierra Nevada Mountains, in Napa Valley, and in the northeast corner of the state. Coastal groups supplied marine shell beads, ornaments, and marine mammal skins. In addition to trading specific items, clamshell disk beads made from 2 clam species available on the Pacific coast were widely used as a form of currency (Kroeber 1922). In northwestern California, groups used strings of dentalium shells as currency.

The effect of Spanish settlement and missionization in California marks the beginning of a devastating disruption of native culture and life ways, with forced population movements, loss of land and territory (including traditional hunting and gathering locales), enslavement, and decline in population numbers from disease, malnutrition, starvation, and violence during the historic period (Castillo 1978). In the 1830s, foreign disease epidemics swept through the densely populated Central Valley, adjacent foothills, and North Coast Ranges decimating indigenous population numbers (Cook 1978). By 1850, with their lands, resources, and way of life being overrun by the steady influx of nonnative people during the Gold Rush, California's native population was reduced to about 100,000; by 1900, there were only 20,000 or less than 7% of the precontact number. Existing reservations were created in California by the federal government beginning in 1858 but encompass only a fraction of native lands.

In 2004, the Native American population in California was estimated at over 383,000 (OPR 2005: 6). Although acknowledged as not being federally recognized California Native American Tribes on the contact list maintained by NAHC, many groups continue to await federal Tribal status recognition. As of 2005, there were 109 federally recognized Tribes within the state, along with dozens of Tribes that are not federally recognized. Members of these Tribes have specific cultural beliefs and traditions with unique connections to areas of California that are their ancestral homelands.

Historic Overview

Post-contact history for the state is generally divided into the Spanish period (1769 – 1822), Mexican period (1822 – 1848), and American period (1848 – present). The establishment of Fort Ross by Alaska-based Russian traders also influenced post-contact history for a short period (1809 – 1841) in the region north of San Francisco Bay. Although there were brief visits along the Pacific coast by European explorers (Spanish, Russian, and British) between 1529 and 1769 of the territory claimed by Spain, the expeditions did not journey inland.

Spanish Period (1769 – 1822)

Spain's colonization of California began in 1769 with the overland expeditions from San Diego to San Francisco Bay by Lt. Colonel Gaspar de Portolá, and the establishment of a mission and settlement at San Diego. Between 1769 and 1823, the Spanish and the Franciscan Order established a series of 21 missions paralleling the coast along El Camino Real between San Diego and Sonoma (Rolle 1969). Between 1769 and 1782, Spain built four presidios (San Diego, Monterey, San Francisco, and Santa Barbara) to protect the missions, and by 1871 had established two additional pueblos at Los Angeles and San José.

Under Spanish law, large tracts of land, including cattle ranches and farms, fell under the jurisdiction of the missions. Native Americans were removed from their traditional lands, converted to Christianity, concentrated at the missions, and used as labor on the mission farms and ranches (Castillo 1978). Since the mission friars had civil as well as religious authority over their converts, they held title to lands in trust for indigenous groups. The lands were to be repatriated once the native peoples learned Spanish laws and culture.

Russian Period (1809 – 1841)

In 1809, Alaska-based Russians started exploring the northern California coast with the goal of hunting otter and seal and feeding their Alaskan colonies. The first Russian settlement was established in 1811 – 1812 by the Russian-American Fur Company to protect the lucrative marine fur trade and to grow produce for their Alaskan colonies. In 1841, as a result of the decline in local sea otter population and the failure of their agricultural colony, combined with a change in international politics, the Russians withdrew from California (Schuyler 1978).

Mexican Period (1822 – 1848)

Following independence from Spain in 1822, the economy during the Mexican period depended on the extensive rancho system, carved from the former Franciscan missions and at least 500 land grants awarded in the state's interior to Mexican citizens (Beck and Haase 1974: 24; Staniford 1975: 98–103). Captain John Sutter, who became a Mexican citizen, received the two largest land grants in the Sacramento Valley. In 1839, Sutter founded the trading and agricultural empire named New Helvetia that was headquartered at Sutter's Fort, near the confluence of the Sacramento and American Rivers in today's City of Sacramento (Hoover et al. 2002).

Following adoption of the Secularization Act of 1833, the Mexican government privatized most Franciscan lands, including holdings of their California missions. Although secularization schemes had called for redistribution of lands to Native American neophytes who were responsible for construction of the mission empire, the vast mission lands and livestock holdings were instead redistributed by the Mexican government through several hundred land grants to private, nonindigenous ranchers (Castillo 1978; Hoover et al. 2002). Most Native American converts returned to traditional lands that had not yet been colonized or found work with the large cattle ranchos being carved out of the mission lands.

American Period (1848 – present)

In 1848, shortly after California became a territory of the United States with the signing of the Treaty of Guadalupe Hidalgo ending Mexican rule, gold was discovered on the American River at Sutter's Mill in Coloma. The resulting Gold Rush era influenced the history of the state, the nation, and the world. Thousands of people flocked to the gold fields in the Mother Lode region that stretches along the western foothills of the Sierra Nevada Mountains, and to the areas where gold was also discovered in other parts of the state, such as the Klamath and Trinity River basins (Caltrans 2008). In 1850, California became the 31st state, largely as a result of the Gold Rush.

Known Resources

A comprehensive inventory of archaeological, historical, or Tribal cultural resources within the state is not feasible within the context of this EIR due to the large geographic area (essentially statewide). Also, for this reason, a records search for known archaeological or historical resources and surveys was not conducted for this analysis. In a program-level analysis, the evaluation can provide meaningful information by focusing on types of cultural resources that may be affected. The following are general cultural resource types that may be present in areas where development could occur.

Pre-Contact Archaeological Resources

Different types of archaeological resources that may be present include the following features:

- Village Site: Locations of continuous and concentrated habitation that typically have a large, well-developed midden deposit containing abundant artifactual evidence. They may also contain burials, rock art, bedrock milling stations, or other features.
- Burial Site: A location where intentional human interments are found in large numbers and close concentration. These locations typically lack evidence of other prehistoric activities.
- Milling Site: A boulder or group of boulders or bedrock outcrops that contain at least one modified surface (mortar, slick, or metate) caused by the processing of food or other natural resources.
- Lithic Workshop: A lithic workshop is a distribution of stone flakes and tool fragments reflecting purposeful modification of parent stone through percussion and/or pressure detachment.
- Ceramic Scatter: A ceramic scatter consists of fragments of ceramic vessels and artifacts distributed over generally open, flat ground.
- Shell Middens: Locations with large amounts of marine shell that extend to an appreciable depth below ground surface. They are normally found in coastal contexts but have been found in the interior.
- Rock Art: Designs or design elements on rock surfaces created by surface applications (pictographs) or by etching (petroglyphs).
- Rock Shelters: Natural caves or crevices in rock outcrops in which human use has left artifactual remains.

Historical Resources

Historical resources may include one or more of the following features:

- Buildings: A structure created to shelter any form of human activity (e.g., house, barn, church, and hotel).

- Structure: Constructed for purposes other than human shelter, and often an engineering project or large in scale (e.g., bridges, dams, lighthouses, water towers, radio telescopes).
- Linear Resource: Mostly long, narrow constructions, generally consisting of any device constructed to transport water (e.g., flumes, pipes, canals, dams, and tunnels), corridors designed to facilitate the transportation of people or information (e.g., roads, trails, railroad grades, and telegraph/telephone lines), and barriers constructed to separate adjoining areas (e.g., stone fences, walls, and fences).
- Mine: Excavations and associated structures and tailings built into the earth to extract natural resources.
- Cemetery: Locations of human interment and include any single or multiple burials.
- Foundation: Structural footings to support a building or structure.
- Refuse Deposit: Discrete areas that contain artifact concentrations of glass, ceramic, metal, bone, or other material reflecting the purposeful discard of those materials (e.g., privies, dumps, trash scatters).

Tribal Cultural Resources

The definition of Tribal cultural resources in CEQA (PRC Section 21074) requires that the site, features, places, cultural landscapes, sacred places, and objects of cultural value are either included in or eligible to be included in the CRHR, included in a local register of historical resources, or determined by the lead agency to be significant based on criteria for resources eligible to the CRHR. They may include:

- Resource Collection Location: A location where Native Americans have historically gone, and are known or believed to go today, to collect resources in accordance with traditional cultural rules of practice.
- Spiritual Location: A location where Native American religious practitioners have historically gone, and are known or believed to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice.
- Traditional Location: A location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world.
- Cemetery: A location that has been selected for human burial or interment.

Tribal Consultation

CalRecycle sent letters to potentially interested Native American Tribal representatives on July 21, 2026, notifying them of the opportunity to consult with CalRecycle regarding the program and to inform them that preparation of the EIR has begun, as required by PRC Section 21080.3.1. Letters were sent to 335 Tribal representatives. Of that, 10 Native American Tribal representatives requested consultation. As of the writing of this Draft EIR, consultation with the consulting Tribes is ongoing. To date, no specific Tribal cultural resources have been identified.

3.4.3 Impacts and Mitigation Measures

Methodology

The analysis is informed by the provisions and requirements of federal, state, and local laws and regulations that apply to cultural resources. Section 15064.5 of the State CEQA Guidelines defines “substantial adverse change” as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such

that the significance of the resource would be materially impaired. Material impairment includes changes to the physical characteristics that make a historical resource eligible for listing in the CRHR such that the resource would no longer be eligible for the NRHP, CRHR, or local historical registers (State CEQA Guidelines Section 15064.5[b][2]).

PRC Section 21083.2(g) defines a "unique archaeological resource" as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following CRHR-related criteria: (1) that it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information; (2) that it as a special and particular quality, such as being the oldest of its type or the best available example of its type; or (3) that it is directly associated with a scientifically recognized important prehistoric or historic event or person. An impact on a resource that is not unique is not a significant environmental impact under CEQA (State CEQA Guidelines Section 15064.5[c][4]). If an archaeological resource qualifies as a resource under CRHR criteria, then the resource is treated as a unique archaeological resource for the purposes of CEQA.

In addition, according to State CEQA Guidelines Section 15126.4(b)(1), if a project adheres to the Secretary of the Interior's Standards for the Treatment of Historic Properties, the project's impact "will generally be considered mitigated below the level of a significance and thus is not significant."

Information related to Tribal cultural resources is based on findings reported in the NAHC Sacred Lands File database search, the records search results (Northwest Information Center File Number File no. 22-1582), and Native American consultation under AB 52. The analysis is also informed by the provisions and requirements of state and local laws and regulations that apply to cultural resources.

PRC Section 21074 defines "Tribal cultural resources" as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe" that are listed or determined eligible for listing in the CRHR, listed in a local register of historical resources, or otherwise determined by the lead agency to be a Tribal cultural resource.

For the purposes of the impact discussion, "historical resource" is used to describe built-environment historic-period resources. Archaeological and Tribal cultural resources, which may qualify as "historical resources" pursuant to CEQA, are analyzed separately from built-environment historical resources.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the program would result in a potentially significant impact on archaeological, historic, and/or Tribal cultural resources if it would:

- Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 of the State CEQA Guidelines, or
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the State CEQA Guidelines.
- Disturb any human remains, including those interred outside of dedicated cemeteries.
- Cause a substantial adverse change in the significance of a Tribal cultural resource, defined in PRC 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.

Issues Not Discussed Further

No issues related to archaeological, historical, and Tribal cultural resources are dismissed from further analysis.

Environmental Impacts and Mitigation Measures

Impact 3.4-1: Substantial Adverse Change in the Significance of Historical Resources

Development of small and medium composting facilities and operation could occur on lands that contain built historical resources. Because individual development projects have the potential to significantly affect historical resources on a regional and localized level, thereby eliminating important examples of periods of California's history, this impact would be **potentially significant**.

Discussion

The reasonably foreseeable development of small and medium composting facilities and operations could occur in areas with known historical sites or within communities that have established historic preservation programs. Development under the program could also involve activities that would introduce new visual elements or disturb the existing terrain. All of these potential conditions that could occur under the program have the potential to result in significant historic resource impacts.

The development of small and medium composting facilities and operations could reduce the aesthetic and physical integrity of historic districts and buildings. A higher incidence of conflict with historical sites is expected to occur in urban areas with buildings that are more than 45 years old than new development and/or undeveloped areas. Projects located in or traversing rural lands could also have impacts related to sites that are singular examples of a historical setting or structures whose historic value and significance have not been previously evaluated and recognized. Because development of small and medium composting facilities and operations has the potential to significantly affect historical resources on a regional and localized level, thereby eliminating important examples of periods of California's history, this impact would be potentially significant.

Mitigation Measures

Mitigation Measure 3.4-1: Avoid or Treat Adverse Changes to Significant Historical Resources

During project planning, the need for an inventory and significance evaluation of historical resources in the area of potential effect (APE) and vicinity shall be assessed by the project proponent and confirmed by the local agency with jurisdiction. As necessary, an inventory/assessment of potential historical resources in the vicinity of the proposed facility/operation will be conducted. The inventory/assessment shall be completed by, or under the direct supervision of, a qualified architectural historian, defined as one who meets the U.S. Secretary of the Interior's Professional Qualifications Standards for Architectural History or History. The following components shall be included as part of the inventory/assessment:

- Map(s) and verbal description of the APE that delineates both the horizontal and vertical extents of where a facility/operation could result in impacts, including both direct and indirect, on historical resources.

- A records search at the appropriate repository of the California Historical Resources Information System for the APE and vicinity (typically areas within 0.25 or 0.5 mile, based on setting) to acquire records on previously recorded historical resources in the APE and vicinity and previous historical resources studies conducted for the APE and vicinity.
- Background research on the history of the APE and vicinity for facilities determined to need additional historical and/or architecture assessment.
- If, after review, features of the built environment are determined to be less than 45 years old, a summary statement of their age and references for this determination will be included in the facility/operation area description. No further analysis is necessary.
- If historic-era built resources are determined likely to be present, and previous historical field surveys of the APE and vicinity have been conducted that are no more than 2 years old, a new field survey is not necessary.
- If historic-era built resources are determined likely to be present, and previous architectural field surveys of the APE and vicinity have not been conducted, a historical field survey of the APE and vicinity should be carried out. Any historical resources identified during the survey shall be recorded on the appropriate California Department of Parks and Recreation 523 forms.
- An evaluation of any historical resources identified in the APE for eligibility to the NRHP and/or the California Register of Historic Places (CRHR).
- An assessment of potential impacts on any historical resources identified in the APE and vicinity. This should include an analysis of whether the potential impacts on the historical resource would be consistent with the U.S. Secretary of the Interior's Standards for the Treatment of Historic Properties and applicable guidelines.
- A technical report meeting U.S. Secretary of the Interior's Standards for historical and architectural history technical reporting.

If it is determined that historic resources are present and could be affected by project implementation, the project proponent shall retain a qualified architectural historian and/or other qualified professional to develop an approach for reducing such impacts before the onset of construction and in coordination with interested parties, including the California Office of Historic Preservation. The agreed-upon measures shall be implemented, as appropriate, prior to or during construction. Typical measures for reducing impacts include:

- Modifying the design to avoid impacts on historical resources.
- Monitoring construction-related and operational vibrations at historical resources.
- Documentation of historical resources to the standards of the Historic American Building Survey, Historic American Engineering Record, or Historic American Landscapes Survey, as appropriate. The documentation shall be prepared by a qualified architectural historian and shall include large-format photography, measured drawings, written architectural descriptions, and historical narratives. The completed documentation shall be submitted to the U.S. Library of Congress.
- Relocation of historical resources in conformance with the U.S. Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings.

- For landscapes, preservation of the landscape's historic form, features, and details that have evolved over time, in conformance with the U.S. Secretary of the Interior's Guidance for the Treatment of Cultural Landscapes.
- Development and implementation of interpretive programs or displays, and community outreach.

Significance after Mitigation

Implementation of Mitigation Measure 3.4-1 would reduce impacts associated with historic resources because it would require the performance of professionally accepted and legally compliant procedures for the avoidance of known historic resources and the evaluation of previously undocumented historic resources. Although it is reasonable to expect that impacts to historical resources would be reduced to a less-than-significant level, it cannot be precluded that loss of eligible or listed historic resources may occur as a result of program implementation. Therefore, this EIR discloses, for CEQA-compliance purposes, that impacts on historical resources associated with the proposed regulation would be considered **significant and unavoidable**.

Impact 3.4-2: Substantial Adverse Change to the Significance of Archaeological Resources

The reasonably foreseeable development associated with the program could result in the disturbance of known or unknown archaeological resources, and ground-disturbing activities could result in discovery of or damage to previously undiscovered archaeological resources as defined in State CEQA Guidelines Section 15064.5. This impact would be **potentially significant**.

Discussion

The development of small and medium composting facilities and operations within the state could occur on properties that contain known or unknown archaeological resources. These resources may include village sites, milling sites, lithic scatters, rock art, building foundations, and refuse deposits, among others. Excavation, grading, or soil removal in previously undisturbed areas have the greatest likelihood of encountering archaeological resources that could represent important examples of periods of California's prehistory. Likewise, the establishment of staging areas and other temporary facilities necessary for construction activities has the potential to affect these cultural resources. If this occurred, it could cause a substantial adverse change in the significance of unique archaeological resources or subsurface historical resources. This impact would be potentially significant.

Mitigation Measures

Mitigation Measure 3.4-2: Avoid or Treat Adverse Changes to Significant Archaeological Resources

During project planning, the need for an inventory and significance evaluation of archaeological resources in the APE and vicinity shall be assessed. As necessary, an inventory/assessment shall be carried out and shall be completed by, or under the direct supervision of, a qualified archaeologist, defined as one who meets the U.S. Secretary of the Interior's Professional Qualifications Standards for Archaeology. The following components shall be included as part of the inventory/assessment:

- Map(s) and verbal description of the facility/operation APE for archaeological resources that delineate both the horizontal and vertical extents of where the facility/operation could result in impacts, including both direct and indirect, on archaeological resources.

- A records search at the appropriate repository of the California Historical Resources Information System for the APE and vicinity (typically areas within 0.25 or 0.5 mile, based on setting) to acquire records on previously recorded archaeological resources in the APE and vicinity and previous archaeological resources studies conducted for the APE and vicinity. This task can be performed by either the qualified archaeologist or the appropriate local California Historical Resources Information System center staff.
- Consultation with California Native American Tribes pursuant to PRC Section 21080.3 to determine whether any indigenous archaeological resource or Tribal cultural resources could be affected. Project proponents shall submit a Sacred Lands File and Native American Contacts List Request to the NAHC at the initial stage of development or as early as practicable to determine if a facility would have an impact on Native American cultural resources. Any Tribe identified by the NAHC will require notification of the proposed facility/operation by the lead agency as soon as practicable during early design. Tribes will be consulted if a request is received after initial notification. Consultation will include discussion regarding facility/operation design, cultural resource surveys, protocols for construction monitoring, and any other Tribal concern.
- If the APE is in or adjacent to navigable waterways, outreach to the California State Lands Commission to request a search of their Shipwrecks Database, to determine whether any submerged archaeological resources may be present in the APE or vicinity.
- Background research on the history, including ethnography and indigenous presence, of the APE and vicinity.
- An archaeological sensitivity analysis of the APE and vicinity based on mapped geologic formations and soils, previously recorded archaeological resources, previous archaeological studies, and Native American consultation.
- If an archaeological study is not warranted based on the above review, a summary of the assessment and justification of the determination will be prepared. No further study is needed.
- If previous archaeological field surveys no more than 2 years old have been conducted for the APE, a new field survey is not necessary, unless their field methods do not conform to those prescribed herein.
- If a study is warranted, an archaeological field survey of the APE will be conducted. The field survey shall include, at a minimum, a pedestrian survey. If the archaeological sensitivity analysis suggests a high potential for buried archaeological resources in the APE, a subsurface survey shall also be conducted. Any archaeological resources identified during the survey shall be recorded on the appropriate California Department of Parks and Recreation 523 forms.
- An evaluation of any archaeological resources identified in the APE for NRHP and/or CRHR eligibility as well as whether they qualify as unique archaeological resources, pursuant to PRC Section 21083.2. Such evaluations may require archaeological testing, potentially including laboratory analysis, and consultation with relevant Native American representatives.
- An assessment of potential impacts on any archaeological resources identified in the APE that is recommended as NRHP and/or CRHP eligible, and/or archaeologically unique (per PRC Section 21083.2).
- A technical report meeting U.S. Secretary of the Interior's Standards for archaeological technical reporting.

If it is determined that project implementation would affect eligible or unique archaeological resources, the qualified archaeologist shall develop and implement an approach for reducing such impacts in coordination with interested and consulting parties prior to initiation of construction. Typical measures for reducing impacts include:

- Modify the design to avoid impacts on archaeological resources.
- Plan green space or other open space to incorporate the resources.
- Develop and implement a detailed archaeological resources management plan to recover the scientifically consequential information from archaeological resources before any excavation at the resource's location. Treatment for most archaeological resources consists of (but is not necessarily limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the affected portion(s) of the resource.
- Develop and implement interpretive programs or displays and conduct community outreach.

Significance after Mitigation

Implementation of Mitigation Measure 3.4-2 would reduce potentially significant impacts on archaeological resources because discovered resources would be avoided, moved, recorded, or otherwise treated appropriately, in accordance with pertinent laws and regulations. Therefore, with implementation of Mitigation Measure 3.4-2, impacts would be reduced to **less than significant**.

Impact 3.4-3: Substantial Adverse Change to the Significance of Tribal Cultural Resources

Consultation with interested Native American Tribal representatives did not result in the identification of specific Tribal cultural resources pursuant to AB 52. However, it did result in the identification of general areas of sensitivity and the need for further coordination as development under the program is proposed due to the presence of Tribal cultural resources statewide. Because ground-disturbing activities associated with the development of small and medium composting facilities and operations could result in damage to Tribal cultural resources, this would be considered a **potentially significant** impact.

Discussion

The development of small and medium composting facilities and operations within the state could affect Tribal cultural resources. No information was received from Tribes regarding site-specific potential resources that could be affected, which is attributed to the programmatic and statewide nature of this EIR. The construction and operation of individual facilities/operations under the program has the potential to disturb previously undisturbed areas and/or native soils that may contain Tribal cultural resources. However, the exact details, including locations, of any such construction activities have yet to be determined. Accordingly, in the future, facilities/operations may be proposed in areas with known or previously unrecognized features of Tribal cultural significance or involving activities that would introduce new visual elements or disturb the existing terrain and have the potential to result in significant impacts to cultural landscapes. Identification of the degree and extent of impact would require additional analysis that includes a determination of the importance (i.e., the eligibility for local, state, or CRHR or NRHP listing) of any Tribal cultural resource recognized within the project site boundaries of a facility/operation to be developed under the program.

Construction activities for future small and medium composting facilities and operations, including earth-moving, excavation, and use of heavy equipment that may cause ground compaction, may disturb or destroy any previously undisturbed and significant Tribal cultural resources or deposits throughout the program area. Therefore, the program's impact on Tribal cultural resources is considered potentially significant.

Mitigation Measures

Mitigation Measure 3.4-3: Avoid or Treat Adverse Changes to Significant Tribal Cultural Resources

No less than 90 days prior to local agency approval of a small or medium composting facility or operation, the lead agency shall request a Sacred Lands File Check from the NAHC and notify local Native American Tribal representatives of the proposed facility/operation and invite them to participate in consultation. If the notified Tribes do not respond within 30 days and the NAHC Sacred Lands File Check is negative, it can be assumed that no Tribal cultural resources may be affected by the project. If either consultation or the Sacred Lands File Check identify Tribal cultural resources (as defined under CEQA) that could be affected by the proposed facility/operation, one or more of the following measures shall be implemented, as determined by the local agency through consultation with Native American Tribal representatives and implemented to avoid adverse effects. Consistent with CEQA requirements, the local agency is required to expend a reasonable effort to reach concurrence with Native American Tribal representatives prior to concluding consultation.

- A cultural resources respect training shall be provided to all construction personnel active on a given project site prior to implementation of earth moving activities. A representative or representatives from culturally affiliated Native American Tribe(s) that participated in consultation will be invited to participate in the development and presentation of the cultural resources awareness and respect training in coordination with a qualified archaeologist meeting the United States Secretary of Interior guidelines for professional archaeologists. The training will include relevant information regarding sensitive Tribal cultural resources, including protocols for resource avoidance, applicable laws and regulations, and the consequences of violating them. The training will also underscore the requirement for confidentiality and culturally-appropriate treatment of any find of significance to Native Americans and protocols, consistent, to the extent feasible, with Native American Tribal values.
- The project proponent shall retain the services of a Tribal monitor/consultant who has been approved by either a consulting or local Tribe (if no local Tribes participate in consultation). The project proponent shall contact the Tribal representative a minimum of 7 days before beginning earthwork or other ground-disturbing activities; construction activities will proceed if no response is received 48 hours before ground-disturbing activities begin. The Tribal monitor shall be present on-site only during the construction phases that involve ground-disturbing activities, including tree removal, boring, excavation, trenching, and demolition; monitoring shall be conducted in real time during these activities, with no stockpiling of soil permitted prior to hauling and disposal off-site. The Tribal monitor shall complete daily monitoring logs that provide details on each day's activities, including construction activities, locations, soil, and any cultural materials identified. The on-site monitoring shall end when the site grading and excavation activities are completed or when the Tribal representatives and monitor have determined that the site has a low potential for affecting Tribal cultural resources.

  If evidence of any Tribal cultural sites, features, or deposits is discovered during construction-related earth-moving activities, all ground-disturbing activity within 100 feet of the discovery shall be halted until a culturally affiliated Native American representative can assess the significance of the find. If, after

evaluation, a resource is considered to be a Tribal cultural resource, a treatment plan shall be developed with input from the consulting Tribe(s) and subsequently implemented. All preservation options shall be considered as required by CEQA (see PRC Section 21084.3), including possible data recovery, mapping, capping, or avoidance of the resource. If artifacts are recovered from significant Tribal cultural resources, the first option shall be to transfer the artifacts to an appropriate Tribal representative. If possible, accommodations shall be made to reinter the artifacts at the project site or, if requested by a Tribal Representative, another mutually agreed upon (with the Native American representative) location within the Master Plan Area. Only if no other options are available will recovered precontact archaeological material be housed at a qualified curation facility, if approved by the consulting Tribe.

Significance after Mitigation

Implementation of Mitigation Measures 3.4-3 would reduce potentially significant impacts to Tribal cultural resources because mitigation would be developed in coordination with the local agency, project proponent, and Tribe(s) to avoid, move, record, or otherwise treat Tribal cultural resources resource appropriately, in accordance with pertinent laws and regulations. However, because Tribal cultural resources may not be able to be avoided during construction of projects under the program, the potential for implementation of the program to adversely affect previously unknown Tribal cultural resources cannot be precluded. As such, this impact would be **significant and unavoidable.**

Impact 3.4-4: Substantial Adverse Change or Disturbance to Human Remains

Construction and excavation activities associated with project development could unearth previously undiscovered or unrecorded human remains if they are present. However, compliance with California Health and Safety Code Sections 7050.5 and PRC Section 5097 would make this impact **less than significant**.

Discussion

Prehistoric or historic-era marked or unmarked human interments are present throughout California. Ground-disturbing activities related to construction of a new small- or medium-sized compostable material handling facility or operation could uncover unmarked, previously unknown Native American or other graves, including those interred outside formal cemeteries.

California law protects Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. The procedures for the treatment of Native American human remains are contained in California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097. These statutes require that if human remains are discovered, potentially damaging ground-disturbing activities around the remains will be halted immediately, and the county coroner will be notified immediately. If the remains are determined by the coroner to be Native American, NAHC will be notified within 24 hours, and the guidelines of NAHC will be adhered to in the treatment and disposition of the remains. Following the coroner's findings, the archaeologist, the NAHC-designated MLD, and the landowner will determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments, if present, are not disturbed. If NAHC is unable to identify the MLD, the MLD fails to make a recommendation, or the landowner rejects the MLD's recommendation and mediation by NAHC fails to provide acceptable measures, the landowner will rebury the Native American remains and associated grave goods with appropriate dignity on the property in an area not subject to further disturbance in accordance with

State CEQA Guidelines Section 15064.5(e)(2). The responsibilities for acting upon notification of a discovery of Native American human remains are identified in PRC Section 5097.94.

California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097 require avoiding or minimizing disturbance of human remains and appropriately treating any remains that are discovered. Compliance with these code sections would ensure that this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

3.5 Biological Resources

This section describes the biological resources that are known or have the potential to occur within the program area (i.e. state of California.) Biological resources include vegetation and wildlife, sensitive plant communities, special-status plant and animal species, and biologically important lands. Regulatory requirements that pertain to biological resources are summarized. The analysis describes potential impacts from implementation of the program and identifies mitigation measures for those impacts determined to be significant.

Two comment letters regarding biological resources were received in response to the Notice of Preparation. The comments received requested consideration of the challenges of developing small and medium composting facilities and operations within the Coastal Zone and that the EIR identify common biological considerations and procedures for project proponents to follow as part of the entitlement and permitting process.

3.5.1 Regulatory Setting

Federal

Federal Endangered Species Act

Pursuant to the federal Endangered Species Act (ESA) (16 US Code Section 1531 et seq.), the U.S. Fish and Wildlife Service (USFWS) regulates the taking of species listed in the ESA as threatened or endangered. In general, persons subject to the ESA (including private parties) are prohibited from "taking" endangered or threatened fish and wildlife species on private property, and from "taking" endangered or threatened plants in areas under federal jurisdiction or in violation of state law. Under Section 9 of the ESA, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

Section 10 of the ESA applies if a non-federal agency is the lead agency for an action that results in take and no other federal agencies are involved in permitting the action. Section 7 of the ESA applies if a federal discretionary action is required (e.g., a federal agency must issue a permit), in which case the involved federal agency consults with USFWS.

In July 2026, USFWS and National Oceanic and Atmospheric Administration (NOAA) changed the longstanding interpretation of the definition of "harm" under the ESA. Previously, "harm" included significant habitat modification that could result in "take." As of September 14, 2026, habitat modification or degradation, standing alone, shall no longer be interpreted as "harm," and a prohibited "take" of listed wildlife. This means that activities that modify habitat but do not otherwise result in "take" of listed species may no longer require incidental-take authorization under ESA Section 7 or Section 10 (USFWS and NOAA 2026).

Clean Water Act

The Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 404 of the CWA requires a project proponent to obtain a permit before engaging in any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Fill material is material placed in waters of the United States that has the effect of replacing any portion of waters of the United States with dry land or changing the bottom elevation of any portion of waters of the United States. Waters of the United States include navigable waters; interstate waters; all other waters where the use, degradation, or destruction of the waters could affect interstate or

foreign commerce; and relatively permanent tributaries to any of these waters. Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Potentially jurisdictional wetlands typically must meet three wetland delineation criteria: hydrophytic vegetation, hydric soil types, and wetland hydrology. Wetlands that meet the delineation criteria may be jurisdictional under Section 404 of the CWA pending U.S. Army Corps of Engineers (USACE) verification. All federal agencies are to avoid impacts to wetlands whenever there is a practicable alternative.

Under Section 401 of the CWA, an applicant for a Section 404 permit must obtain a certificate from the appropriate State agency stating that the intended dredging or filling activity is consistent with the State's water quality standards and criteria. In California, the authority to grant water quality certification is delegated by the State Water Resources Control Board to the nine regional water quality control boards (RWQCBs). CWA guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA provides that it will be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. Under the MBTA, "take" is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities." The MBTA definition of take applies to the removal of nests (such as swallow nests on bridges) occupied by migratory birds during the breeding season. Take does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof. The current list of species protected by the MBTA can be found in Title 50 of the Code of Federal Regulations (CFR), Section 10.13. The list includes nearly all birds native to the United States.

State

California Environmental Quality Act

CEQA (Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations [CCR] Section 15000 et seq.) provide that public agencies whose activities may affect the environment shall prevent environmental damage. Rare, threatened, or endangered plant species, subspecies, and varieties are specifically considered in various sections of CEQA and the Guidelines. State CEQA Guidelines Section 15380(b) provides the criteria for endangered, rare, and threatened species. Section 15380(d) states that species that are not on State and federal lists but meet the criteria in Section 15380(b) "shall nevertheless be considered to be endangered, rare or threatened." This definition includes species with California Rare Plant Rank 1A, 1B, 2A, and 2B species as listed on the California Native Plant Society (CNPS) Rare Plant Inventory (RPI). Additionally, under Section 15380, species will be considered endangered, rare, or threatened if they are listed as such under the California Endangered Species Act (CESA) or the ESA. Species designated as candidates for listing by the California Fish and Game Commission under CESA also are "presumed to be endangered." CESA presumes that candidate species meet the criteria for listing as endangered, rare, or threatened.

California Endangered Species Act

Pursuant to CESA, a permit from California Department of Fish and Wildlife (CDFW) is required for projects that could result in the "take" of a plant or animal species that is listed by the state as threatened or endangered.

Under CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species but does not include "harm" or "harass." As a result, the threshold for take is higher under CESA than under the federal ESA. Authorization for take of state-listed species can be obtained through a California Fish and Game Code Section 2081 incidental take permit.

Native Plant Protection Act

The Native Plant Protection Act (NPPA) (California Fish and Game Code Section 1900 et seq.) was created in order to "preserve, protect and enhance rare and endangered plants in this State." The NPPA allows the California Fish and Game Commission to designate plants as rare or endangered. While CESA provided further protection for rare and endangered plant species, the NPPA remains part of the California Fish and Game Code. Sixty-four species, subspecies, and varieties of plants are protected as rare under the NPPA. The act prohibits take of endangered or rare native plants but includes exceptions for agricultural and nursery operations; for emergencies; and, after proper notification of CDFW, for vegetation removal from canals, roads, and other building sites, changes in land use, and other situations.

California Fish and Game Code

Lake and Streambed Alteration Agreements – Section 1602

Sections 1600 – 1616 of the California Fish and Game Code protect waters of the State. "Waters of the State" is defined as any surface water or groundwater, including saline waters, within the boundaries of the state. Section 1602 regulates any work that will: (1) substantially divert or obstruct the natural flow of any river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. CDFW's jurisdiction in altered or artificial waterways is based on the value of those waterways to fish and wildlife. For project activities that may affect stream channels and/or riparian vegetation regulated under Sections 1600 through 1603, CDFW authorization is required in the form of a LSAA.

Nesting Birds and Raptors – Section 3503

Section 3503 of the Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders *Falconiformes* and *Strigiformes*), including their nests or eggs. Typical violations include destruction of active nests as a result of tree removal or disturbance caused by project construction or other activities that cause the adults to abandon the nest, resulting in loss of eggs and/or young.

Fully Protected Species – Sections 3511, 4700, 5050, and 5515

Regulation of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act requires that each of the nine RWQCBs prepare and periodically update water quality control plans, known as basin plans. Each basin plan sets forth water quality standards for surface water and groundwater and actions to control nonpoint and point sources of pollution to achieve and

maintain these standards. Basin plans offer an opportunity to protect wetlands through the establishment of water quality objectives. The RWQCB's jurisdiction includes waters of the United States and waters of the State. The RWQCB has the discretion to take jurisdiction over areas not federally protected under CWA Section 404 provided they meet the definition of waters of the State. The State Water Resources Control Board published a new set of procedures for discharges of dredged or fill material into waters of the State on March 22, 2019. Mitigation requiring no net loss of wetlands functions and values of waters of the State typically is required by the RWQCB.

The State Water Resources Control Board identifies state-jurisdictional wetlands as areas which, under normal circumstances, (1) have continuous or recurrent saturation of the upper substrate caused by groundwater or shallow surface water or both; (2) experience saturation of sufficient duration to cause anaerobic conditions in the upper substrate; and (3) have vegetation dominated by hydrophytes or lack vegetation.

California Coastal Act

The California Coastal Act, administered by the California Coastal Commission, includes policies for development proposed within the Coastal Zone (defined in the following section) and recognizes California ports, harbors, and coastline beaches as important coastal-dependent uses and resources. The California Coastal Commission regulates all jurisdictional wetlands that are under the joint jurisdiction of USACE and the RWQCBs, as well as riparian habitat under the jurisdiction of CDFW. The California Coastal Act also defines Environmentally Sensitive [Habitat] Areas (ESHAs) as "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments" (Section 30107.5).

The California Coastal Act requires that ESHAs be protected and limits development within and adjacent to ESHAs to uses that are dependent on those resources, such as certain forms of public access, education, research, and habitat restoration. Development must avoid significant disruption of ESHA habitat values, and development adjacent to ESHAs must be designed to prevent degradation and remain compatible with the continued functioning of the habitat and associated recreation areas. Appropriate setbacks from ESHAs vary according to the resource involved and the type and intensity of the proposed disturbance; setbacks of approximately 100 to 500 feet are commonly applied depending on site-specific circumstances.

The Coastal Zone is defined as land and water area of the State of California from the Oregon border to the border of Mexico, extending 3 miles seaward to the state's outer limit of jurisdiction, including all offshore islands, and extending inland generally 1,000 yards from the mean high tide line of the sea, but is specifically designated on maps held by the Legislature. In significant coastal estuarine, habitat, and recreational areas it extends inland to the first major ridgeline paralleling the sea or 5 miles from the mean high tide line of the sea, whichever is less, and in developed urban areas the zone generally extends inland less than 1,000 yards. The Coastal Zone does not include the area of jurisdiction of the San Francisco Bay Conservation and Development Commission, nor any area contiguous thereto, including any river, stream, tributary, creek, or flood control or drainage channel flowing into such area.

Local

Given its statewide extent and the possible number of local and regional responsible agencies, this EIR does not identify individual, potentially applicable local government plans, policies, and ordinances. Types of local regulations relevant to biological resources may include general plan policies and ordinances protective of these

resources, as well as certified Local Coastal Plans and adopted habitat conservation plans. This EIR assumes that implementation of the program would be consistent with local plans, policies, and ordinances to the extent that development of small and medium composting facilities and operations under the program are subject to them, because local land use and permit approvals are typically conditioned upon such consistency.

3.5.2 Environmental Setting

California supports the highest biodiversity of any state, and is one of 36 global biodiversity hotspots, owing in part to the diversity of local climates and vegetation communities (California Natural Resources Agency 2026). The extreme biodiversity and heterogeneity of habitats in California is primarily driven by the range of physical geography and topography present. For example, the highest and lowers points in the contiguous United States, Mount Whitney (14,505 feet above sea level) and Death Valley (-282 feet below sea level), are both in California and lie only 80 miles from one another. California spans nearly 800 miles from north to south, encompassing climatic conditions that range from the temperate rainforests of the Pacific Northwest to the subtropical deserts near Mexico. Much of the state has a Mediterranean climate characterized by cool, wet winters and warm to hot, dry summers. In the eastern mountains and deserts, summer precipitation is influenced by the western extent of the North American monsoon. Along the northern coast, abundant rainfall and marine influences create cool, foggy, and moist conditions. Higher elevations experience colder temperatures and, during typical climate years, substantial winter snowpack. Arid desert conditions occur primarily in the rain shadows of California's major mountain ranges (CDFW 2025:2-3 – 2-5).

California is unique for having a convergence of Desert, Cool Interior, Highland, and Steppe climates in close proximity to the Mediterranean climate that covers most of the state. The Desert region, including the Mojave and Colorado Deserts, is typified by a wide range of elevation with more rain and snow in the high ranges, and hot, dry conditions in valleys. Plant biodiversity in the Desert area rivals that of the Mediterranean climate area. Cool Interior and Highland climates can be found on the Modoc Plateau, Klamath, Cascade, and Sierra ranges. Variations in slope, elevation, and aspect of valleys and mountains result in a range of microclimates for habitats and wildlife, producing biodiversity at a local scale. For example, the San Joaquin Valley, exhibiting a Mediterranean climate, receives sufficient springtime rain to support grassland habitats, while remaining hot and relatively dry in summer. Steppe climates include arid, shrub-dominated habitats that can be found in the Owens Valley, east of the Sierra Nevada, and San Diego, in coastal southern California (CDFW 2021:12).

California has the highest numbers of native and endemic plant species of any state, with approximately 6,500 species, subspecies, and varieties of plants (Jepson Flora Project 2012) representing approximately 30% of all vascular plants in the United States (California Natural Resources Agency 2026). Nearly one-third of the state's plant species are endemic. Within the California Floristic Province, which encompasses the Mediterranean area of Oregon, California, and northwestern Baja, 61% of the 3,500 species of native vascular plants are endemic, with approximately 52 endemic genera represented (Critical Ecosystem Partnership Fund 2025). Over 200 species, subspecies, and varieties of native plants are designated as rare, threatened, or endangered by State law, and over 2,000 more plant taxa are considered to be of conservation concern (CDFW 2025). In addition to diversity in topography due to rich geologic variety, California also contains a broad diversity of soils, including granite, gypsum, and serpentine derived soils. Soils are a primary driver in plant distribution. In particular, plants specializing in serpentine soils comprise up to 10% of the endemic plant species of the California Floristic Province (Critical Ecosystem Partnership Fund 2025), while total landcover of serpentine environments represents less than 1% of the state.

California supports an exceptionally diverse assemblage of wildlife, which represent a substantial share of the species found throughout the United States. The state's varied habitats and landscape provide a broad range of habitat conditions that support approximately 100 reptile species, 75 amphibian species, 650 bird species, and 220 mammal species. Of the 124 native freshwater breeding fish, 64% are endemic to the state (Moyle et al. 2015:4). California also hosts more than 30,000 species of insects, including 1,600 species of native bees (California Natural Resource Agency 2026), some of which are protected under state legislation.

California exhibits a wide range of aquatic habitats from the Pacific Ocean to isolated hillside seeps, to desert oases that both support water-dependent species and provide essential seasonal habitat for terrestrial species. (CDFW 2025:2-14) These aquatic habitats vary widely in their level of wetness, chemical harshness, seasonality, and function. While wetlands are highly diverse and productive habitats, they cover very little of the state, and it is estimated that approximately 90% of California's wetland and riparian habitats have been lost (CDFW 2021:58-60).

Aquatic habitats such as interior salt marshes, vernal pools, perennial and ephemeral rivers and streams, riparian areas, and coastal wetlands support a diverse array of flora and fauna, including 150 animal and 52 plant species that are designated special-status species (CDFW 2015). The CNDDB identifies 123 different aquatic habitat types in California, based on fauna. Of these, 78 are stream habitat types located in seven major drainage systems: Klamath, Sacramento-San Joaquin, North/Central Coast, Lahontan, Death Valley, South Coast, and Colorado River systems. These drainage systems are geologically separated and contain distinctive fishes and invertebrates (CDFW 2025:2-14). California has approximately 124 distinct native resident and anadromous fish species, subspecies, distinct population segments, and ecologically significant units, and 59 of these native fishes are either listed, are possible candidates for listing as threatened or endangered, or are extinct in California (Moyle et al. 1995, Moyle et al. 2015:4).

The following introduces the types of resources previously identified and summarizes the methods and data sources used to identify these resources.

Sensitive Biological Resources

Special-Status Species

Special-status species are species that are legally protected or otherwise considered sensitive by federal, state, or local resource agencies. Special-status species are derived from the CESA, the ESA, or other regulations, and may also include species considered sufficiently rare by the scientific community to qualify for such listing. Plants and animals may be protected as special-status species due to declining populations, vulnerability to habitat change, or restricted distributions. In this document, special-status species are defined as the following.

- species listed or proposed for listing as threatened or endangered under the ESA (50 CFR 17.12 for listed plants, 50 CFR 17.11 for listed animals, and various notices in the Federal Register for proposed species) or candidates for possible future listing as threatened or endangered under the ESA (75 CFR 69222);
- species listed or candidates for listing by the State of California as threatened or endangered under CESA (14 CCR Section 670.5);
- animals fully protected under the California Fish and Game Code (Section 3511 for birds, Section 4700 for mammals, Section 5050 for reptiles and amphibians, and Section 5515 for fish);

- plants listed as rare under the California NPPA (California Fish and Game Code Section 1900 et seq.);
- plants considered by CDFW to be "rare, threatened or endangered in California." This includes plants listed on the CNPS RPI with California Rare Plant Ranks of 1A, presumed extinct in California and either rare or extinct elsewhere; 1B, considered rare or endangered in California and elsewhere; 2A, presumed extinct in California but common elsewhere; and 2B, considered rare or endangered in California but more common elsewhere. While these rankings do not afford the same type of legal protection as the ESA or CESA, the uniqueness of these species requires special consideration under Section 15380 of the State CEQA Guidelines;
- animals identified by CDFW as species of special concern;
- species considered locally significant, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA Section 15125 [c]) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G); or
- species that otherwise meets the definition of rare or endangered under CEQA Section 15380.

The term "species of special concern" is applied by CDFW to animals not listed under the ESA or CESA, but that are considered to be declining at a rate that could result in listing, or that historically occurred in low numbers and have known threats to their persistence. CDFW's fully protected status was California's first attempt to identify and protect animals that were rare or facing extinction. Most species listed as fully protected were eventually listed as threatened or endangered under CESA; however, some species remain listed as fully protected but do not have simultaneous listing under CESA. Fully protected species may not be taken or possessed at any time and no take permits can be issued for these species except for scientific research purposes or for relocation to protect livestock.

Sensitive Habitats

Sensitive habitats in California include those that are of special concern to resource agencies or are afforded specific consideration through CEQA, Section 1602 of the California Fish and Game Code, Section 404 of the CWA, the Porter-Cologne Act, and the California Coastal Act. Sensitive natural communities or habitat may be of special concern to agencies and conservation organizations for a variety of reasons, including their locally or regionally declining status, or because they provide important habitat to common and special-status species.

A number of classification systems have been developed to describe habitats and vegetation communities in California, and each of these is unique in structure and purpose. One such system is the Survey of California Vegetation, the current CDFW framework for vegetation classification in the program area. The Survey of California Vegetation sets standards for vegetation classification in California, compliant with the requirements of the National Vegetation Classification System. A vegetation community, also referred to as a natural community or vegetation type, is a group of plant species that reliably occur together under similar environmental conditions. Vegetation communities are distinguished by characteristics such as species composition, growth form, and structural organization. Because plant communities vary across both space and time, they are best characterized by considering vegetation form and structure, biogeography, floristic composition, and the ecological processes that influence their distribution (USNVC 2025).

Under the Survey of California Vegetation framework, vegetation is grouped into different hierarchical levels. At a broader scale, vegetation is classified predominantly by the shared growth forms of plants present (e.g., "forest," or "grassland") and the climate and disturbance regime of the community. At finer levels, communities are classified based on dominant and constituent species present (e.g. *Atriplex polycarpa* Shrubland Alliance). Vegetation mapping and ongoing maintenance of vegetation community definitions is implemented by the CDFW Vegetation Classification and Mapping Program (CDFW n.d.).

Other classification systems used to classify habitat in California include the California Wildlife Habitat Relationship System (CWHR). The CWHR was developed to provide a systematic method for describing how the constituent stage classes and structures support California's regularly-occurring birds, mammals, reptiles, and amphibians. The CWHR is most equivalent to the association level of the Survey of California Vegetation. However, while the CWHR types are described in terms of vegetation and according to vegetative dominance, they are described in the context of distinguishing characteristics to which wildlife are thought to respond (Mayer and Laudenslayer 1988:9).

Sensitive natural communities are those native plant communities defined by CDFW as having limited distribution statewide or within a county or region and that are often vulnerable to environmental effects of projects (CDFW 2018:3–4). In addition to habitats officially identified by CDFW as sensitive natural communities or meeting the definition of waters of the State or waters of United States, other sensitive habitats include riparian habitats, oak woodlands, chaparral, and coastal sage scrub. When determining habitat suitability for special-status plant and animal species, vegetation type and quality is commonly used as a primary indicator of habitat condition and adequacy.

Sensitive Natural Communities

Sensitive natural communities or habitats are those that are of special concern to resource agencies or are afforded special consideration. This concern may be triggered by the locally or regionally declining extent of these habitats, or because they provide habitat important to common and special-status species. CDFW defines sensitive natural communities are those native plant communities having limited distribution statewide or within a county or region and that are often vulnerable to environmental effects of projects (CDFW 2018). Old records of these communities are tracked in the California Natural Diversity Database (CNDDB), maintained by the California Department of Fish and Wildlife, but no new occurrences have been added since the 1990s. Furthermore, the sensitive natural communities included in CNDDB are based on the 1986 Holland classification system, which is not fully consistent with the State's current vegetation mapping and classification system described.

Currently, sensitive natural community identification is not based primarily on existence of previous records of sensitive natural communities in the CNDDB, and instead relies on site assessment of vegetation communities, results of which are compared to the Manual of California Vegetation (MCV) Alliance and Association classification definitions. CDFW maintains a list of sensitive natural communities, following the definitions of those communities in the MCV, and designates sensitive natural communities based on their state rarity and threat ranking using NatureServe's Heritage Methodology. Natural communities with rarity ranks of S1 to S3, where S1 is critically imperiled, S2 is imperiled, and S3 is vulnerable, are considered sensitive natural communities to be addressed in the environmental review processes of CEQA and its equivalents (CDFW n.d.). CDFW's natural-community rarity rankings follow the 2009 NatureServe Conservation Status Assessments: Methodology for Assigning Ranks (Faber-Langendoen et al. 2012). Furthermore, vegetation types that are not on

the state's sensitive list but that may be considered rare or unique to the region under CEQA Guidelines Section 15125(c), are also required to be considered under CEQA analysis. Such vegetation communities may be defined in local jurisdiction planning documents, such as a general plan. Sensitive natural communities may or may not contain special-status plants or their habitat (CDFW 2018).

Environmentally Sensitive Habitat Areas

The California Coastal Act defines ESHAs as: "Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could easily be disturbed or degraded by human activities and developments." Therefore, to designate an ESHA, the following three elements must be evaluated:

- presence of species or habitats that are rare, or,
- presence of species or habitats that are valuable, and
- sensitivity of species or habitat to human disturbance or degradation.

Similar to CDFW's classification of sensitive natural communities, characteristics used to designate ESHAs generally include: (1) natural communities with NatureServe state or global rarity rankings of S1 or G1, S2 or G2, or S3 or G3; and (2) habitats that support rare or special-status plant or wildlife species. Special-status species may include species with state or global rarity rankings of S1/G1, S2/G2, or S3/G3; species listed or proposed for listing as threatened or endangered, or designated as candidates, under the federal ESA or CESA; California Fully Protected Species; California Species of Special Concern; and other species for which substantial evidence demonstrates rarity pursuant to CEQA Guidelines Section 15380(d). This latter category includes plants with a CNPS California Rare Plant Rank of 1B or 2, plants designated as rare under the NPPA, and plant or wildlife species identified as locally important under an applicable LCP.

Examples of habitats that may qualify as ESHAs include coastal sage scrub, maritime chaparral, coastal bluff and dune habitats, wetlands, riparian habitats, eucalyptus groves used by overwintering monarch butterflies, and tree stands that support nesting raptors. Under the Coastal Act, wetlands are defined as lands within the Coastal Zone that may be periodically or permanently covered by shallow water, including saltwater and freshwater marshes, brackish marshes, swamps, mudflats, and fens. In applying this definition, the Coastal Commission generally considers the presence of any one of the three wetland indicators (hydrophytic vegetation, hydric soils, or wetland hydrology) sufficient to identify a wetland, rather than requiring two of the three parameters as is generally required for federal wetland delineations under the CWA.

Wetlands and Other Waters of the United States and Waters of the State

Waters of the United States are defined as navigable waters of the United States, interstate waters, and all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce and tributaries to any of these waters. Waters of the United States also include wetlands that meet any of these criteria or that share a surface connection to any of the aforementioned waters or their tributaries. CWA jurisdictional wetlands are generally defined as areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, vegetation adapted to saturated soil conditions. Wetlands subject to federal jurisdiction are identified based on applicable hydrologic and jurisdictional criteria and generally exhibit two or more of the three wetland

characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. In California, federally regulated aquatic resources may include rivers and streams, lakes, and seasonal or perennial wetlands.

Waters of the State are defined as any surface water or groundwater, including saline waters, within the boundaries of the state. This definition encompasses all waters of the United States, however, some aquatic resources not covered by the federal definition of waters are claimed by the State. The State Water Resources Control Board defines an area as a wetland as follows:

> *"An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater or shallow surface water or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes the area lacks vegetation." (California Water Boards 2021:11)*

Wetlands provide numerous ecosystem services, including flood protection, water filtration, and recreation opportunities. Wetlands also support a wide range of plant and animal species, many of which are rare or have a commercial or recreational value. Approximately 50% of the species protected under the ESA depend on wetland habitats (USFWS 2024:10). It has been estimated that nearly 150 species of birds and more than 200 species of fish in in the United States depend on wetlands for their survival. The Pacific Coast region contains the largest number of at-risk species that depend on vulnerable aquatic areas (e.g., hydrologically isolated wetlands that may not be fully protected by existing federal policies). California has by far the largest number of at-risk plant species occurring within vulnerable wetlands (Technical Advisory Team 2012:2).

At the nationwide level, the National Wetland Inventory provides maps of wetlands throughout the United States which can be used to help identify aquatic habitats within the program area for this EIR; however, project-specific analysis is always necessary to determine whether wetlands are present within a project area because wetlands may be ephemeral, available data may not be mapped to a local scale, and resource agencies may differ in their definitions of protected wetlands. For example, vernal pools occur in many areas mapped as annual grasslands, and a site-specific analysis would be required to identify such conditions.

Riparian Habitats

Riparian habitats include the banks, floodplains, and terraces of rivers and streams where flooding occurs periodically or groundwater occurs near the surface. Riparian habitat may also be associated with lakes and other water bodies, and riparian vegetation may extend beyond areas of detectable surface water or shallow groundwater. The shade cast by riparian vegetation helps maintain cool water temperatures in streams and rivers, which are important to the health and productivity of aquatic species. Riparian vegetation also provides a rich source of food for many animal species.

Many species of amphibians, reptiles, birds, and mammals use riparian habitats for nesting, foraging, roosting, or basking. Riparian areas can also serve as important wildlife movement corridors, providing connectivity among areas of natural habitat and between wildlife populations. The CWHR identifies a total of 545 amphibians, reptiles, birds, and mammals in California that utilize riparian habitats, including 67 species that are listed as threatened or endangered under the ESA or CESA. Riparian woodland and scrub habitats provide important nesting habitat for numerous neotropical migrant bird species during the breeding season, as well as stopover habitat during spring and fall migration. Some special-status bird species, such as the yellow-billed cuckoo (*Coccyzus americanus*), least Bell's vireo (*Vireo bellii pusillus*), and willow flycatcher (*Empidonax traillii*), are highly restricted to riparian and freshwater wetland vegetation (CDFW 2021:58). The federally threatened

and CDFW Species of Special Concern foothill yellow-legged frog (*Rana boylii*) depends on riparian habitats for foraging and reproduction (Van Hattem et al. 2021:206).

Riparian habitats located along rivers, streams, and lakes are subject to regulation under Section 1602 of the California Fish and Game Code, even if they are not included on CDFW's list of special-status natural communities. These habitats also often support greater wildlife species diversity and abundance than surrounding upland habitats. Wetlands occurring within riparian areas may qualify as waters of the United States or waters of the State when they meet applicable wetland criteria and occur in a jurisdictional context. Modification of riparian habitat, including vegetation removal and channelization, has limited natural riparian processes, resulting in reductions in channel meandering, floodplain function, and riparian overstory vegetation (CDFW 2025:2-35).

Oak Woodlands

Oaks are woody shrubs and trees of the genus *Quercus* and are a ubiquitous component of the California landscape. Oaks are dominant or codominant in many vegetation communities across the state. Oaks occupy many habitats, from dry oak savannas to scrub-oak dominated chapparal, to lush riparian corridors dominated by valley oak (*Q. lobata*). Oak woodlands are among the most biologically diverse communities in the state, supporting 5,000 species of insects and more than 330 species of amphibians, reptiles, birds, and mammals. Oak woodlands also support more than 1,500 species of plants, nearly 500 of which are rare or of limited distribution (CDFW 2021:56). Because of the immense biodiversity contained within oak woodlands, oak woodland communities are considered sensitive habitats by USFWS and CDFW.

The importance of protecting oak woodlands is recognized in the Oak Woodlands Conservation Act and PRC Section 21083.4, which establishes requirements for county lead agencies to evaluate and mitigate significant impacts on oak woodlands through the environmental review process. Under PRC Section 12220(g), land is generally considered forest land when native trees provide at least 10% canopy cover, distinguishing it from primarily grassland or shrubland communities. Oak woodlands are similarly characterized by at least 10% tree canopy cover, with one or more oak species dominating the tree layer. Many California counties and local jurisdictions have adopted ordinances or other measures to protect oak woodlands. Some jurisdictions have also prepared Oak Woodlands Management Plans consistent with the Oak Woodlands Conservation Act, though preparation of such plans is not mandatory. These plans typically describe the extent and condition of oak woodlands within the jurisdiction, identify threats to those resources, and establish conservation strategies and best management practices.

Chaparral and Coastal Sage Scrub

Chaparral and coastal sage scrub are the broadly given names for California's two most predominant shrub dominated plant communities. Both communities tend to occur on hotter, drier west and south facing slopes. Chapparal consists of stiff stemmed, fire and drought adapted shrubs, usually with sclerophyllous (leathery) and waxy evergreen leaves. This plant community covers approximately 10% of the state in dry, lower elevation, and often inland areas (Ritter 2018:11). This plant community is dominated by shrubs including chamise (*Adenostoma fasciculatum*), redshank (*A. sparsifolium*), ceanothus (*Ceanothus* spp.), manzanita (*Arctostaphylos* spp.) and scrub oak species (*Quercus berberidifolia, Q. john-tuckeri, Q. dumosa*).

Coastal sage scrub consists of generally soft-stemmed, often aromatic, and drought deciduous shrubs, and occurs along the south and central coast of the state from coastal bluffs to inland canyons. Common

constituents of this community consist of California sagebrush (*Artemisia californica*), sticky monkeyflower (*Diplacus aurantiacus*), sages (*Salvia* spp.), and buckwheats (*Eriogonum* spp.). The CWHR groups this habitat as one broad type, while the MCV classifies these types of habitats into numerous groupings at the alliance level based on specific species composition.

Areas occupied by coastal scrub communities tend to be located in coastal locales which are attractive for development, and as such, this community type has become threatened through land conversion, with the species of plants and animals unique to this habitat disappearing completely from many locations in California (Ritter 2018:11). Many alliances and associations of coastal scrub are considered sensitive natural communities by CDFW.

3.5.3 Environmental Impacts and Mitigation Measures

Methodology

This section describes impacts on biological resources from implementation of the reasonably foreseeable development associated with the program. This analysis considers impacts of construction and operation of small and medium composting facilities and operations under the program on biological resources. If future projects covered under the program would affect sensitive biological resources, significance determinations assume that project proponents would comply with relevant federal, state, and local ordinances and regulations, including obtaining all applicable permits prior to the start of project activities.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the program would result in a potentially significant impact on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS.
- 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.
- 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.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Issues Not Discussed Further

No issues related to biological resources are dismissed from analysis.

Environmental Impacts and Mitigation Measures

Impact 3.5-1: Adversely Affect Special-Status Species, Either Directly or Through Habitat Modification

It is reasonably foreseeable to expect that small and medium composting facilities and operations under the program could intrude into or displace habitat supporting special-status species and result in the disturbance or loss of special-status plant and wildlife species and habitats. Potential localized effects on special-status species could occur, including the removal or conversion of vegetation and habitat necessary for species breeding, feeding, dispersal, or sheltering. Therefore, this impact would be categorized as **potentially significant**.

Discussion

Construction and operation of small and medium composting facilities and operations under the program could adversely affect special-status plant and wildlife species, either directly or through modification or loss of habitat. Although some facilities/operations may be developed on sites where suitable habitat for special-status species is absent, the program (as evaluated in this EIR) would apply throughout California, and special-status species may occur in specific project areas. Because the specific locations of facilities/operations that would be permitted under the program are not known, the presence or absence of special-status species and their habitats cannot be determined at the program level.

Development of small and medium composting facilities and operations could require vegetation removal, grading, excavation, construction of access roads and utility connections, installation of stormwater infrastructure, and construction of other supporting facilities. Construction could result in temporary or permanent removal or modification of habitat used by special-status species for breeding, nesting, foraging, dispersal, migration, or shelter. Construction could also result in direct mortality or injury of special-status plants or wildlife through vegetation removal, ground disturbance, vehicle or equipment operation, entrapment in excavations, or other construction activities. Construction-related noise, vibration, lighting, dust, and human activity could also disturb special-status wildlife occurring within or adjacent to individual facility sites. Dust deposition, erosion, sedimentation, changes in drainage patterns, or inadvertent introduction or spread of invasive plants could degrade habitat adjacent to construction areas. Depending on the location and configuration of an individual facility, development could also reduce habitat connectivity or interfere with local wildlife movement.

Operation of small and medium composting facilities and operations could result in additional disturbance associated with vehicle traffic, equipment operation, lighting, noise, and maintenance activities. These activities could adversely affect special-status wildlife if facilities/operations are located within or adjacent to occupied habitat. Operational activities could also indirectly degrade habitat through altered drainage, introduction or spread of invasive species, or other site-specific changes. The potential for these effects would vary depending on facility location and existing site conditions. Facilities/operations constructed entirely on developed or previously disturbed sites lacking suitable habitat for special-status species would generally have little or no potential to adversely affect such species. Facilities/operations proposed within or adjacent to natural habitats could result in direct or indirect effects on special-status plants or wildlife. Because future facility/operation locations are not known and development under the program could occur in areas supporting special-status

species or suitable habitat, adverse effects cannot be excluded at the program level. For the reasons described, this impact would be potentially significant.

Mitigation Measures

Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey

During the early planning stages of a small or medium composting facility/operation project under the program, the project proponent shall implement the following measures and demonstrate compliance prior to local agency approval:

- A data review and biological reconnaissance survey will be conducted within a project site by a qualified biologist retained by the project proponent prior to project activities (e.g., ground disturbance, vegetation removal, staging, construction) and will be conducted no more than one year prior to project implementation. The qualified biologist must be familiar with the life histories and ecology of species in the project area and must have experience conducting field surveys of relevant species or resources, including protocol-level surveys for individual species, if applicable. The data reviewed will include the best available, current data for the area, including vegetation mapping data, species distribution/range information, CNDDB, CNPS Inventory of Rare and Endangered Plants of California, and relevant general and regional plans.
- The qualified biologist will assess the habitat suitability of the project site for all special-status plant and wildlife species as well as sensitive habitats identified as having potential to occur in the project area and will identify any wildlife nursery sites (e.g., heron rookeries, bat maternity roosts, monarch butterfly overwintering colonies, deer fawning areas) within the project area and potential ESHAs within project sites. The qualified biologist will also conduct a preliminary delineation of sensitive habitats (e.g., wetlands, streams, seeps, sensitive natural communities, ESHAs) within the project site. The biologist will provide a report to the local agency and any subsequent permitting agencies with evidence to support a conclusion as to whether special-status species and sensitive habitats are present or are likely to occur within the project site.
- If the reconnaissance survey identifies no potential for special-status plant, wildlife species, or sensitive habitats to occur, the project proponent will not be required to apply any additional mitigation.
- If the qualified biologist determines that there is potential for special-status species or sensitive habitats to be present within the project site, the project proponent shall implement Mitigation Measures 3.5-1b and/or 3.5-1c, depending on whether special status plants or wildlife may occur, respectively.

Mitigation Measure 3.5-1b: Conduct Special-Status Plant Surveys and Implement Avoidance and Minimization Measures

If it is determined through implementation of Mitigation Measure 3.5-1a that habitat suitable for special-status plant species is present within a particular project site, the project proponent shall implement the following measures prior to initiation of construction:

- Prior to implementation of project activities and during the blooming period for the special-status plant species with potential to occur in a project site, as determined during implementation of Mitigation Measure 3.5-1a, a qualified botanist will conduct protocol-level surveys for special-status plants within the project site following survey methods from CDFW's Protocols for Surveying and Evaluating Impacts on Special-Status Native Plant Populations and Natural Communities (CDFW 2018 or most recent version). The qualified botanist will: 1) be knowledgeable about plant taxonomy, 2) be familiar with plants of the project region, including special-status plants and sensitive natural communities, 3) have experience conducting floristic botanical field surveys as described in CDFW 2018, 4) be familiar with the California Manual of Vegetation (Sawyer et al. 2009 or current version, including updated natural communities data on the California Native Plant Society website), and 5) be familiar with federal and state statutes and regulations related to plants and plant collecting.
- If special-status plants are not found, the botanist will document the findings in a report to local agency and any subsequent permitting agencies, and no further mitigation will be required.
- If special-status plant species are found, the plant will be avoided completely if avoidance would not prevent project objectives from being met. This may include establishing a no-disturbance buffer around the plants and demarcation of this buffer by a qualified biologist or botanist using flagging or high-visibility construction fencing. The size of the buffer will be determined by the qualified biologist or botanist and will be large enough to avoid direct or indirect impacts on the plant.
- If special-status plants are found during special-status plant surveys and cannot be avoided, the project proponent shall, in consultation with CDFW or USFWS as appropriate depending on the particular species, develop and implement a site-specific mitigation strategy to achieve no net loss of occupied habitat or individuals. Mitigation measures shall include, at a minimum, preserving and enhancing existing populations, establishing populations through seed collection or transplantation from the site that is to be affected, and/or restoring or creating habitat in sufficient quantities to achieve no net loss of occupied habitat or individuals. Potential mitigation sites could include suitable locations within or outside of the project area, with a preference for on-site mitigation. Habitat and individual plants lost shall be mitigated at a minimum 1:1 ratio, considering acreage as well as function and value. Success criteria for preserved and compensatory populations will include:
    - The extent of occupied area and plant density (number of plants per unit area) in compensatory populations will be equal to or greater than the affected occupied habitat.
    - Compensatory and preserved populations will be self-producing. Populations will be considered self-producing when:
        - plants reestablish annually for a minimum of five years with no human intervention such as supplemental seeding; and
        - reestablished and preserved habitats contain an occupied area and flower density comparable to existing occupied habitat areas in similar habitat types in the project vicinity.

- If off-site mitigation includes dedication of conservation easements, purchase of mitigation credits, or other off-site conservation measures, the details of these measures will be included in the mitigation plan, including information on responsible parties for long-term management, conservation easement holders, long-term management requirements, success criteria such as those listed and other details, as appropriate to target the preservation of long term viable populations.

Mitigation Measure 3.5-1c: Conduct Preconstruction Surveys for Special-Status Species and Implement Avoidance Measures

If it is determined through implementation of Mitigation Measure 3.5-1a that habitat suitable for special status wildlife is present within a particular project site, the project proponent shall implement the following measures prior to initiation of project construction:

- A qualified biologist familiar with the species in question will conduct preconstruction surveys within the project site. Preconstruction surveys for special-status species will be conducted throughout the project site and within a species-specific buffer around the project site. Surveys will consist of "walk and turn" surveys of areas beneath surface objects (e.g., rocks, leaf litter, moss mats, coarse woody debris) for salamanders, and visual searches for frogs. Preconstruction surveys will be conducted within the appropriate season to maximize potential for observation for each species, and appropriate surveys will be conducted for the applicable life stages (i.e., eggs, larvae, adults).
- If special-status species are not detected during the preconstruction survey, the qualified biologist will submit a report summarizing the results of the survey to the local agency and any subsequent permitting agencies, and further mitigation will not be required.
- If special-status species are detected during the preconstruction survey, the project proponent shall, in consultation with CDFW, develop and institute, at a minimum, project design modifications (e.g., specific building materials and surfacing requirements), relocation of individual animals, installation of exclusionary fencing, and/or other measures recommended by CDFW as necessary to ensure that no injury to or mortality of these species would occur.
- If "take" of species is unavoidable, the project proponent shall seek and obtain an incidental take permit from CDFW or other appropriate measure and implement any additional measures necessary to minimize, compensate for, and fully mitigate impacts on the species. These additional measures may include, at a minimum, some combination of the following measures: installation of exclusion fencing around project sites, purchase of credits at a conservation bank, creation of additional habitat, and/or adaptive management strategies.

Significance after Mitigation

Implementation of Mitigation Measure 3.5-1a, 3.5-1b, and 3.5-1c would require biological resources to be identified through a data review and biological reconnaissance survey and avoided to the extent feasible. The measure would also require identification of applicable resource agency requirements before program approval and completion of required permitting, consultation, and compensatory mitigation before the associated effects occur. Implementation of the mitigation measure at a project level would reduce the impacts on special-status species. Although the proposed mitigation measures would reduce impacts to special-status species to a less than significant level, because the locations of future proposed facilities and operations are unknown at this

time, disturbance of special-status species may not be possible to avoid or mitigate to a less than significant level even with implementation of all feasible mitigation. Therefore, this impact would be considered **significant and unavoidable.**

Impact 3.5-2: Adversely Affect Riparian Habitat, Aquatic Resources, or Other Sensitive Natural Communities through Direct Removal, Filling, Hydrological Interruption, Vegetation Modification, or Other Methods

Although the Composting General Order prevents the development of small and medium composting facilities and operations within 100 feet of aquatic resources, it is reasonably foreseeable to expect that small and medium composting facilities and operations under the program could intrude into riparian habitat or other sensitive natural communities. Potential impacts could include the disturbance or loss of sensitive habitats if those resources are located at future project sites. Therefore, this impact would be categorized as **potentially significant**.

Discussion

Facilities/operations could be developed anywhere within the program area, which encompasses the state of California, and would be subject to the eligibility requirements and mitigation measures established in this EIR and other regulations, including the Composting General Order. The specific locations of small and medium composting facilities and operations that would be permitted under the program are not known at this time. While it is reasonable to expect some new small or medium composting facilities and operations would be located at or near existing landfills, transfer stations or material recovery facilities or in urban locations zoned for agriculture, industrial or heavy commercial use, some proposed facilities/operations could be located on the urban/rural edge. In urban or previously developed settings, impacts to sensitive habitats are unlikely to occur. However, because projects may be sited throughout the program area, including undeveloped locations, impacts to sensitive natural communities and ESHAs could occur.

With respect to aquatic resources, the Composting General Order would prevent the development of small and medium composting facilities and operations within 100 feet of aquatic resources. In addition, small and medium composting facilities and operations (as noted in Section 3.10, “Hydrology and Water Quality”) would be required to implement site-specific best management practices as part of each facility/operation’s compliance with the National Pollutant Discharge Elimination System requirements. As a result, significant impacts with respect to aquatic resources are not anticipated. The remainder of this discussion focuses on the potential for the future development of small and medium composting facilities and operations to impact other sensitive habitats.

Small and medium composting facilities and operations under the program would occupy, on average, approximately five acres for a small-sized facility and approximately 11 acres for a medium-sized facility. Development could require vegetation removal, grading, excavation, grading, construction of utility connections, installation of stormwater treatment or detention facilities, and development of other components required for composting operations. If sensitive habitats are present within or adjacent to a future composting facilities and operations, these activities could result in temporary disturbance, permanent removal, or degradation of these resources.

Future facility sites could also contain sensitive natural communities identified by the CDFW. Construction within these communities could result in their permanent conversion or degradation through vegetation removal, grading, soil disturbance, introduction or spread of invasive species, or fragmentation. Because sensitive natural

communities are limited in distribution or otherwise vulnerable to loss or degradation, removal or substantial degradation of these communities could constitute an adverse effect on a sensitive habitat. The Coastal Zone also contains ESHAs protected pursuant to the California Coastal Act and applicable Local Coastal Programs. Because the program area encompasses the entire state, future facilities/operations could be proposed within the Coastal Zone. Depending on site-specific conditions, development within or adjacent to an ESHA could degrade such resources.

Although many future facilities/operations may be located on sites where sensitive habitats are absent, the locations and environmental conditions of future composting facilities and operations are presently unknown. Construction and operation of small and medium composting facilities and operations could result in the loss or degradation of wetlands, sensitive natural communities, ESHAs, or other sensitive habitats. Therefore, this impact would be potentially significant.

Mitigation Measures

Implement Mitigation Measure 3.5-1a.

Mitigation Measure 3.5-2a: Avoid Environmentally Sensitive Habitat Areas

During the early planning stages of a small or medium composting facility/operation under the program, the project proponent and local lead agency shall verify that project components do not extend into an ESHA as defined by the California Coastal Act. Should an ESHA be located within or overlap the project site, the project proponent shall revise the components of the project to avoid the placement of facilities/operations within the ESHA and otherwise comply with applicable California Coastal Act and Local Coastal Program requirements.

Mitigation Measure 3.5-2b: Avoid and Mitigate for Unavoidable Loss of Sensitive Natural Communities

The biological resources screening required pursuant to Mitigation Measure 3.5-1a shall identify whether CDFW-designated sensitive natural communities occur within a given project site or within adjacent areas that could be directly or indirectly affected by construction or operation of the facility. If no sensitive natural communities are present or could be affected, no additional mitigation for sensitive natural communities shall be required.

If a CDFW-designated sensitive natural community is identified within the project area and could be directly or indirectly affected by project implementation, such impacts to the community will be avoided completely, if feasible (i.e., project objectives can still be met). This may include establishing a no-disturbance buffer around the sensitive natural community and demarcation of this buffer by a qualified biologist or botanist using flagging or high-visibility construction fencing. The size of the buffer will be determined by the qualified biologist or botanist and will be large enough to avoid direct or indirect impacts on the sensitive natural community. If complete avoidance is infeasible, unavoidable permanent loss of a sensitive natural community shall be compensated using one or a combination of the following methods:

- If permanent loss of a sensitive natural community is unavoidable, the project proponent shall consult with CDFW to determine appropriate course of action and implement any additional measures necessary to minimize, compensate for, and fully mitigate impacts on the sensitive natural community. These additional measures may include, at a minimum, some combination of the following measures, to compensate fully for the acreage impacted:
    - **Habitat creation or restoration**. The project proponent shall create or restore the same sensitive natural community type at a minimum ratio of two acres created for each one acre

of sensitive natural community disturbed or destroyed. Where habitat creation or restoration is used, the project proponent shall prepare and implement a habitat mitigation and monitoring plan identifying the location of the mitigation site, restoration or creation methods, performance standards, maintenance requirements, monitoring methods, and corrective actions necessary to demonstrate successful establishment of the replacement community. Created or restored habitat shall consist of the same sensitive natural community type affected by the project and shall provide biological functions and values comparable to or greater than those of the affected habitat. Compensation shall be secured through an enforceable mechanism before vegetation removal or ground disturbance within the sensitive natural community occurs.

- **Habitat preservation or mitigation banking**. The project proponent shall permanently protect the same sensitive natural community type, in perpetuity, through purchase of credits from an approved conservation or mitigation bank where appropriate credits are available, at a minimum ratio of three acres preserved for each 1 acre of sensitive natural community disturbed or destroyed. Protected habitat shall consist of the same sensitive natural community type affected by the project and shall provide biological functions and values comparable to or greater than those of the affected habitat. Compensation shall be secured through an enforceable mechanism before vegetation removal or ground disturbance within the sensitive natural community occurs.

Significance after Mitigation

Implementation of Mitigation Measure 3.5-2a would avoid direct and indirect effects on ESHAs. For CDFW-designated sensitive natural communities outside of ESHAs, Mitigation Measure 3.5-2b would prioritize avoidance of sensitive natural communities. Where complete avoidance is infeasible, unavoidable permanent loss would be compensated through creation or restoration of the same sensitive natural community at a minimum 2:1 ratio or permanent protection of the same sensitive natural community at a minimum 3:1 ratio. While the proposed mitigation measures would likely reduce impacts to a less than significant level, the location of future proposed facilities/operations and availability of suitable compensatory habitat is unknown at this time. As a result, it is unknown if impacts to sensitive habitats can be fully avoided or mitigated to a less than significant level. Therefore, this impact would be considered **significant and unavoidable.**

Impact 3.5-3: Interfere With the Movement of Wildlife Species Through Established Wildlife Corridors, or Impede the Use of Wildlife Nursery Sites

The development and operation of small and medium composting facilities and operations could be located such that interference with the movement of wildlife through established wildlife corridors or use of wildlife nursery sites could be impeded. Therefore, this impact would be considered **potentially significant**.

Discussion

It is reasonable to expect some new small or medium composting facilities/operations permitted under the program would be located at or near existing landfills, transfer stations, material recovery facilities, or in urban locations zoned for industrial or heavy commercial use. In such settings, interference with fish or wildlife movement or wildlife nursery sites is unlikely to occur. However, small and medium composting facilities or operations could be located on the urban/rural edge or within undeveloped areas or in more rural locations

(e.g., dairies or other agricultural sites) where certain composting feedstocks originate or where finished compost products are in demand. While the potential to intrude into or displace natural habitats to some degree cannot be fully dismissed for future project sites within the edges of an urban community and natural areas, those edge locations are not anticipated to substantially change wildlife movement. In such locations, development would need to be of substantial size or extend substantially into the natural landscape to inhibit wildlife movement. The reasonable expectation for new small and medium composting facility and operations sites would not be sufficiently large to cause significant impacts to wildlife movement.

Wildlife nursery sites (e.g., heron rookeries, bat maternity roosts, monarch butterfly overwintering colonies, deer fawning areas) are locations where wildlife congregate to rear young, rest, or perform other important life history events, and usually contain habitat features conducive to supporting large numbers of a given species on a seasonal or permanent basis. The locations and environmental conditions of future composting facilities and operations are unknown, however, construction and operation of small and medium composting facilities and operations could result in the loss, degradation or impeded use of wildlife nursery sites. Therefore, this impact would be potentially significant.

Mitigation Measures

Implement Mitigation Measure 3.5-1a.

Mitigation Measure 3.5-3: Avoid Wildlife Nursery Sites

The data review and biological reconnaissance survey required pursuant to Mitigation Measure 3.5-1a shall identify wildlife nursery sites within a proposed project area. If no wildlife nursery sites are identified by the qualified biologist, no additional project modification is required. If the qualified biologist determines that there are wildlife nursery site(s) present in the project area, the project shall establish an activity-free buffer around the wildlife nursery site(s), the size of which will be determined by the qualified biologist based on the best available information on the species which utilize the site(s). No components of the small or medium composting facility or operation shall be conducted within the established buffer zone.

Significance after Mitigation

Projects proposed under the program are not expected to be sufficiently large to cause impacts to wildlife movement. Implementation of Mitigation Measure 3.5-3 would require proposed facilities and operations to avoid direct effects to wildlife nursery sites. Therefore, this impact would be **less than significant.**

Impact 3.5-4: Conflict with Adopted Local or Regional Conservation Plans

The development and operation of small and medium composting facilities and operations would not occupy sufficient natural landscape to substantially inhibit achievement of conservation objectives of local or regional plans. All future development projects would be required to follow city and county development requirements, including compliance with local policies, ordinances, and applicable permitting procedures related to protecting biological resources. Therefore, this impact would be **less than significant**.

Discussion

It is reasonable to expect some new small or medium composting facilities/operations permitted under the program would be located at or near existing landfills, transfer stations, or material recovery facilities, or in urban locations zoned for industrial or heavy commercial use. In such settings, conflicts with local or regional conservation plans and policies would not occur. Even if located on the urban/rural edge, it is likely

development of new composting facilities and operations associated with the program would not occupy sufficient natural landscape to substantially inhibit achievement of conservation objectives of local or regional plans.

Most counties and cities in the state have plans and/or local policies in place that protect native and non-native trees in urban landscapes, as well as in unincorporated county lands. These plans and policies vary in their definitions of protected trees (e.g., certain species, minimum diameter at breast height, trees that form riparian corridors) and in the requirements for ordinance or policy compliance. Land use changes and development could result in removal of trees that are protected by local policies or ordinances. Counties and cities also have general plan policies and ordinances protecting various types of biological resources such as special habitat types or specific species. Such policies, and compliance measures, vary between jurisdictions.

The development of small and medium composting facilities and operations under the program would comply with all local or regional conservation plans, including applicable habitat conservation plans, natural community conservation plans and all city and county development requirements, including compliance with local policies, ordinances, and applicable permitting procedures related to protecting biological resources. As projects would be required to demonstrate compliance with planning and regulatory requirements (including applicable habitat conservation plans and other local/regional requirements related to biological resources) imposed by the local agency during project planning, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

3.6 Energy

This section was prepared pursuant to CEQA Guidelines Section 15126 and Appendix F of the CEQA guidelines, which require that EIRs include a discussion of the potential energy impacts of projects. The analysis considers whether implementation of the Project would result in inefficient, wasteful, and unnecessary consumption of energy.

Project implementation would result in fuel and electricity consumption during construction and operation of the proposed compost facilities/operations. Indirect energy consumption would be associated with water supply and conveyance required to support facility operations. Transportation-related energy consumption would include employee travel, routine business travel, transport of organic feedstock to the facility, and transport of finished compost to customers. Energy would also be consumed by equipment and vehicles used during Project construction.

One comment letter pertaining to energy was received in response to the Notice of Preparation. The comment requested that the EIR identify typical energy needs for small and medium composting operations.

3.6.1 Regulatory Setting

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 U.S. Environmental Protection Agency's [EPA] EnergyStar™ program) and transportation (e.g., fuel efficiency standards). At the state level, Title 24 of the California Code of Regulations sets forth energy standards for buildings. California's Advanced Clean Cars / Advanced Clean Trucks Program sets aggressive vehicle standards requiring a rapid transition toward 100% zero-emission passenger car sales and incremental sales mandates for medium- and heavy-duty zero-emission commercial trucks. Further, the State provides rebates/tax credits for installation of renewable energy systems, and offers the Flex Your Power program that promotes conservation in multiple areas. At the local level, individual cities and counties establish policies in their general plans and climate action plans (CAPs) related to the energy efficiency of new development and land use planning and to the use of renewable energy sources.

Federal

Energy Policy and Conservation Act and CAFE Standards

The Energy Policy and Conservation Act of 1975 established nationwide fuel economy standards to conserve oil. Pursuant to this Act, the National Highway Traffic and Safety Administration, part of the U.S. Department of Transportation (DOT), is responsible for revising existing fuel economy standards and establishing new vehicle economy standards.

The Corporate Average Fuel Economy (CAFE) program was established to determine vehicle manufacturer compliance with the government's fuel economy standards. Compliance with the CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the country. EPA calculates a CAFE value for each manufacturer based on the city and highway fuel economy test results and vehicle sales. The CAFE values are a weighted harmonic average of the EPA city and highway fuel economy test results. Based on information generated under the CAFE program, DOT is authorized to assess penalties for noncompliance. Under the Energy Independence and Security Act of 2007, the CAFE standards were revised for the first time in 30 years.

The CAFE Standards, which were first enacted by Congress in 1975, set fleet-wide averages that must be achieved by each automaker for its car and truck fleet. The purpose of the CAFE Standards is to reduce energy consumption by increasing the fuel economy of cars and light trucks. Current CAFE standards continue to require improvements in the fuel economy of passenger vehicles and light-duty trucks, thereby reducing transportation-related fuel consumption associated with employee commuting, business travel, and other project-related vehicle trips.

While the CAFÉ standards remain on the books, the Trump administration and Congress effectively eliminated federal CAFE penalties for passenger cars and light trucks by reducing noncompliance fines to $0 and rolling back stringent Biden-era fuel efficiency targets. Legislative and regulatory actions reduced the civil fines for violating light-duty vehicle CAFE standards to $0, removing the threat of major financial penalties for automakers. The National Highway Traffic Safety Administration (NHTSA) issued rules shifting away from prior targets that mandated steep yearly efficiency increases. The administration moved to eliminate the inter-manufacturer credit trading program utilized by companies like Tesla to sell compliance credits to traditional automakers.

Energy Policy Act of 1992 and 2005

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are also included in EPAct. Federal tax deductions are allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs. The Energy Policy Act of 2005 provides renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 is designed to improve vehicle fuel economy and help reduce U.S. dependence on oil. It represents a major step forward in expanding the production of renewable fuels, reducing dependence on oil, and confronting global climate change. The Energy Independence and Security Act of 2007 increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly five-fold increase over current levels; and reduces U.S. demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020—an increase in fuel economy standards of 40%.

By addressing renewable fuels and the CAFE standards, the Energy Independence and Security Act of 2007 builds upon progress made by the Energy Policy Act of 2005 in setting out a comprehensive national energy strategy for the 21st century.

State

Renewables Portfolio Standard

The state passed legislation referred to as the Renewables Portfolio Standard that requires increasing use of renewable energy to produce electricity for consumers. California utilities are required to generate 33% of their

electricity from renewables by 2020 (Senate Bill [SB] X1-2 of 2011); 52% by 2027 (SB 100 of 2018); 60% by 2030 (also SB 100 of 2018); and 100% by 2045 (also SB 100 of 2018).

Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) requires that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50% by December 31, 2030. It also establishes energy efficiency targets that achieve statewide, cumulative doubling of the energy efficiency savings in electricity and natural gas end uses by the end of 2030.

California Energy Efficiency Action Plan

The 2019 California Energy Efficiency Action Plan has 3 primary goals for the state: double energy efficiency savings by 2030 relative to a 2015 base year (per SB 350), expand energy efficiency in low-income and disadvantaged communities, and reduce greenhouse gas (GHG) emissions from buildings. This plan provides guiding principles and recommendations on how the state would achieve those goals. These recommendations include:

- Identifying funding sources that support energy efficiency programs;
- Identifying opportunities to improve energy efficiency through data analysis
- Using program designs as a way to encourage increased energy efficiency on the consumer end;
- Improving energy efficiency through workforce education and training; and
- Supporting rulemaking and programs that incorporate energy demand flexibility and building decarbonization (CEC 2019).

Assembly Bill 1007: State Alternative Fuels Plan

Assembly Bill (AB) 1007 (Chapter 371, Statues of 2005) required the California Energy Commission (CEC) to prepare a state plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels Plan in partnership with the California Air Resources Board (CARB) and in consultation with other state, federal, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative nonpetroleum fuels in a manner that minimizes the costs to California and maximizes the economic benefits of in-state production. The plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuel use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Building Energy Efficiency Standards (Title 24, Part 6)

The energy consumption of new residential and nonresidential buildings in California is regulated by the California Energy Code. The code was established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy-efficiency standards for residential and nonresidential buildings. CEC updates the California Energy Code every 3 years, typically including more stringent design requirements for reduced energy consumption, which results in the generation of fewer GHG emissions.

The 2025 California Energy Code went into effect on January 1, 2026. The 2025 California Energy Code advances California's energy efficiency and building decarbonization objectives by encouraging electric heat pump technology and use, establishing electric-ready requirements, and strengthening ventilation standards to improve indoor air quality. The CEC estimates that implementation of the Building Energy Efficiency Standards will reduce energy consumption, lower utility costs, and support the State's greenhouse gas reduction goals through improved building efficiency and expanded electrification measures (CEC 2025).

California Green Building Standards (Title 24, Part 11)

The California Green Building Standards, also known as CALGreen, is a reach code (i.e., optional standards that exceed the requirements of mandatory codes) developed by CEC that provides green building standards for statewide residential and nonresidential construction. The current version is the 2025 CALGreen Code, which took effect on January 1, 2026. The 2025 CALGreen Code continues California's efforts to improve building sustainability by incorporating provisions related to electric vehicle (EV) charging infrastructure, water efficiency and conservation, material conservation and resource efficiency, construction waste reduction, and indoor environmental quality. The CALGreen Code sets design requirements equivalent to or more stringent than those of the California Energy Code for energy efficiency, water efficiency, waste diversion, and indoor air quality. These codes are adopted by local agencies that enforce building codes and used as guidelines by state agencies for meeting the requirements of Executive Order B-18-12.

Climate Change Scoping Plan

Reducing GHG emissions in California has been the focus of the state government for approximately two decades. GHG emission targets established by the state legislature include reducing statewide GHG emissions to 1990 levels by 2020 (AB 32 of 2006) and reducing them to 40% below 1990 levels by 2030 (SB 32 of 2016). Executive Order S-3-05 calls for statewide GHG emissions to be reduced to 80% below 1990 levels by 2050. This target was superseded by AB 1279, which codifies a goal for carbon neutrality and reduce emissions by 85% below 1990 levels by 2045. These targets are in line with the scientifically established levels needed in the United States to limit the rise in global temperature to no more than two degrees Celsius, the warming threshold at which major climate disruptions, such as super droughts and rising sea levels, are projected; these targets also pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.

CARB adopted the *Final 2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) on December 16, 2022, which traces the state's the pathway to achieve its carbon neutrality and an 85% reduction in 1990 emissions goal by 2045 using a combined top-down, bottom-up approach under various scenarios. It identifies the reductions needed by each GHG emission sector (e.g., transportation [including off-road mobile source emissions], industry, electricity generation, agriculture, commercial and residential, pollutants with high global warming potential, and recycling and waste) to achieve these goals.

As it pertains to energy consumption and the reduction in fossil fuel use, the 2022 Scoping Plan identifies 3 priority areas that local land use development should focus on, including the decarbonization of building-related energy (e.g., cleaning the grid), transportation-related energy (e.g., reducing fossil fuel use for transportation), and the reduction of vehicle miles traveled (i.e. reduces energy consumption in the transportation sector).

Legislation Associated with Greenhouse Gas Reduction

The State has passed legislation that aims to reduce GHG emissions. The legislation often has an added benefit of reducing energy consumption. SB 32 requires a Statewide GHG emission reduction of at least 40% below 1990

levels by no later than December 31, 2030. Executive Order S-3-05 sets a long-term target of reducing Statewide GHG emissions by 80% below 1990 levels by 2050.

SB 375 aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. The Advanced Clean Cars program, approved by CARB, combines the control of GHG emissions and criteria air pollutants and the increase in the number of zero-emission vehicles into a single package of standards. The program's zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15% of California's new vehicle sales by 2025. In August 2022, CARB adopted the ACC II program, which sets sales requirements to reach the goal of 100% ZEV sales in the State by 2035. Additionally, in April 2023, CARB adopted the Advanced Clean Fleets regulation, which sets a goal of achieving a fully zero-emission truck and bus fleet within the State by 2045. Implementation of the State's legislation associated with GHG reduction will have the co-benefit of reducing California's dependency on fossil fuel and making land use development and transportation systems more energy efficient.

More details about legislation associated with GHG reduction are provided in the regulatory setting of Section 3.8, "Greenhouse Gas Emissions and Climate Change."

Local

Cities and counties throughout California may adopt local plans, policies, ordinances, and programs that promote energy conservation and efficient energy use. These may include General Plan policies, CAPs, green building ordinances, EV infrastructure requirements, and local building energy standards that exceed the minimum requirements of the California Building Standards Code (Title 24), subject to approval by the CEC. Future composting facilities and operations developed under the program would be required to comply with all applicable local energy conservation requirements in effect at the time of project approval and construction.

Local utilities may also offer incentive programs, demand-response programs, energy efficiency rebates, and renewable energy programs that encourage reductions in electricity and natural gas consumption. Participation in such programs may further reduce operational energy demand at future compost facilities and operations developed under the program.

3.6.2 Environmental Setting

Energy Types and Sources

Electricity

In 2025, California was the nation's fourth-largest total electricity producer, after Texas, Florida, and Pennsylvania, and accounted for about 5% of all U.S. utility-scale (1-megawatt and larger) power generation. California gets its electricity from a mix of natural gas, solar, wind, hydroelectric power, nuclear energy, and other renewables. Natural gas provides around 35% to 40% of California's total electricity mix, making it the largest single source of thermal power. Solar power accounts for over 21% of the total power mix and is the fastest-growing clean energy source. Wind power generates roughly 11% to 12% of the state's electricity, with a mix of in-state farms and out-of-state imports. Hydroelectric power provides around 12% to 13%, fluctuating based on yearly rainfall and snowpack. Geothermal contributes about 4.6% of electric power, while biomass contributes nearly 2%. Nuclear power contributes roughly 10% of the total system power, primarily from the Diablo Canyon Power Plant (about 7%) and regional out-of-state imports (3%). Coal fuels a small amount of

California's in-state net generation, all of it from one 57-megawatt industrial cogeneration plant in San Bernardino County. California must import electricity to meet its power needs, and typically receives between one-fifth and one-third of its electricity supply annually from other states and Mexico. Although California consumes more electricity than all other states except Texas and Florida, it uses less electricity per capita than any other state (U.S. Energy Information Administration [EIA] 2026a).

According to the CEC, Statewide electricity consumption was more than 281,000 gigawatt hours (GWh) in 2024. Consumption is projected to reach nearly 417,000 GWh in 2045 in the mid baseline used in the planning forecast and 434,000 GWh in the high baseline used in the local reliability scenario (CEC 2026:54).

Transportation

California stretches two thirds of the way up the U.S. West Coast. At its greatest distances, it is about 1,040 miles long and 560 miles wide. With such great distances to travel, the transportation sector accounts for the largest share of the state's energy consumption. Californians have more registered motor vehicles and travel more vehicle miles than residents in any other state. California accounts for one-tenth of U.S. motor gasoline consumption and about one seventh of the nation's jet fuel consumption. Overall, the state's transportation sector accounts for 45% of California's total energy consumption. The industrial sector uses 21% of the state's total energy and the residential and commercial sectors each account for 17% (EIA 2026a).

California has led the states in the most EVs and EV charging locations every year since 2016. California is part of the West Coast Electric Highway, an extensive network of electric vehicle DC fast charging locations located along Interstate five and other major highways stretching from Canada's British Columbia to the Mexico border. The state has about 18,800 public charging locations, the most in the nation. In 2024, California had almost 1.5 million registered battery electric vehicles, the most of any state and about one-third of the U.S. total (EIA 2026a).

California consumes roughly 1.8 to 2 million barrels of oil per day, totaling around 659.9 million barrels per year according to the EIA. Transportation uses about 86% of the state's total petroleum, which includes motor gasoline and jet fuel. The industrial sector accounts for about 10% of petroleum use; commercial petroleum use accounts for 2%, while residential heating (mostly propane) accounts for about 1% (EIA 2026a).

According to the California Department of Tax and Fee Administration (CDTFA) approximately 2.9 billion gallons of diesel and 13.3 billion gallons of gasoline were sold in California in 2025 (CDTFA 2026).

Natural Gas

California consumed a record-low 4.8 billion cubic feet per day (Bcf/d) of natural gas in 2025, driven by declining use in the electric power sector as utility-scale solar and battery storage expand. The industrial section consumes roughly 31% of the state's delivered natural gas. The electric power sector accounts for about 27%, down significantly as solar output surges. Residential use makes up 23%, with about 60% of California households relying on gas for home heating. The commercial sector consumes roughly 17%. Transportation uses nearly 2% as compressed natural gas vehicle fuel. According to data from the EIA, solar and battery storage deployment have sharply cut fossil fuel demand during peak and midday hours, pushing power-sector gas burn to historic lows (EIA 2026a).

Alternative Fuels

A variety of alternative fuels are used to reduce demand for petroleum-based fuel. The use of these fuels is encouraged through various Statewide regulations and plans (e.g., Low Carbon Fuel Standard, AB 32 Scoping Plan). Conventional gasoline and diesel may be replaced (depending on the capability of the vehicle) with many transportation fuels, including:

- biodiesel
- electricity
- ethanol (E-10 and E-85)
- hydrogen
- natural gas
- propane
- renewable diesel (including biomass-to-liquid)
- synthetic fuels
- gas-to-liquid and coal-to-liquid fuels

California has a growing number of alternative fuel vehicles through the joint efforts of CEC, CARB, local air districts, federal government, transit agencies, utilities, and other public and private entities. As of August 2026, California contained approximately 69,700 alternative fueling stations (AFDC 2026).

3.6.3 Impacts and Mitigation Measures

Methodology

Construction of the representative small and medium composting facilities and operations would result in the consumption of gasoline and diesel fuel associated primarily with off-road construction equipment, construction worker trips, vendor trips, and material delivery activities. Construction fuel consumption estimates are based on 6 different facility/operation scenarios that were developed as part of the Air Quality and GHG Technical Report (Appendix B) prepared in support of the EIR. These scenarios evaluated three different types of small operations and three different types of medium facilities, using either windrows, covered aerated static pile (CASP), and negative aerated static piles (ASP) with filters. Although CalEEMod does not directly report fuel consumption, the model output includes sufficient equipment and activity data to calculate fuel use.

Employee commuting, routine business travel, feedstock deliveries, and transport of finished compost to end users would require the use of gasoline and diesel fuels. Off-road equipment used during facility operations may include front-end loaders and excavators used to manage feedstock and construct compost piles, windrow turners used to mix and aerate windrows, fuel trucks used to service on-site equipment, and water trucks used for dust suppression and moisture management. Stationary equipment may include grinders, screens, stackers, colorizers, emergency generators, and emergency fire pumps, which would typically be powered by diesel fuel. Electricity would be used to power aeration blowers associated with ASP systems, water supply infrastructure, and administrative office buildings.

Detailed energy consumption methodologies, assumptions, and supporting calculations are provided in Appendix C.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the project would result in a significant energy impact if it would:

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

Issues Not Discussed Further

No issues related to energy are dismissed from further analysis.

Environmental Impacts and Mitigation Measures

Impact 3.6-1: Wasteful, Inefficient, or Unnecessary Consumption of Energy during Project Construction or Operation

The development of small and medium composting facilities and operations would likely result in the use of fuels and electricity during construction and operation of new composting facilities and operations, including waste and finished compost hauling. The efficiency of equipment and vehicles consuming these energy resources is mandated by existing State laws and regulations. For these reasons, this impact would be **less than significant**.

Discussion

Construction

Construction of the representative small composting operation scenarios would consume approximately 207 gallons of gasoline and 24,217 gallons of diesel fuel. Construction of the representative medium composting facility scenarios would consume approximately 189 gallons of gasoline and 25,616 gallons of diesel fuel.

Fuel consumption associated with construction activities would be temporary and would occur over a finite construction period. The use of gasoline and diesel fuel for construction equipment, worker travel, vendor trips, and material deliveries is typical of development projects of a similar nature and would not constitute wasteful, inefficient, or unnecessary energy consumption.

Operations

Operational energy demands for the representative facility scenarios are summarized in Table 3.6-1.

Table 3.6-1. Operations Energy Consumption Summary by Type

Totals	Unit of Measure	Scenario 1 Small Windrow Operation	Scenario 2 Small CASP Operation	Scenario 3 Small Operation with Negative ASP with Filter	Scenario 4 Medium Windrow Facility	Scenario 5 Medium CASP Facility	Scenario 6 Medium Facility with Negative ASP with Filter
Gasoline	Gal/yr	2,235	2,235	2,235	3,353	3,353	3,353
Diesel	Gal/yr	192,155	160,272	160,272	242,863	210,979	210,979
Electricity	kW-hr/yr	36,544	101,869	101,869	85,753	281,726	281,726
Natural Gas	MMBtu/yr	4.3	4.3	4.3	4.3	4.3	4.3

Based on the calculations presented in Appendix C, Energy Impact Report, annual diesel fuel consumption for the representative composting facility/operation scenarios would represent approximately 0.00552% to 0.00836% of statewide annual diesel consumption, depending on the operating scenario under consideration.

Transportation of feedstock and finished compost would contribute to operational fuel consumption. Transportation costs represent a substantial operating expense for organic waste processing facilities/operations, creating an economic incentive for these facilities/operations to be located near feedstock sources and end users of compost products. Because finished compost is commonly applied on agricultural lands, facilities are generally expected to be located near agricultural areas where compost can be beneficially reused (CalRecycle 2019: 3.6-13). As a result, operation of future compost facilities and operations may reduce overall transportation-related fuel consumption associated with waste disposal and material handling compared to the conservative assumptions evaluated herein.

The annual gasoline consumption associated with the representative composting facility/operation scenarios would represent approximately 0.00002% to 0.00003% of statewide annual gasoline consumption, depending on the operating scenario under consideration.

Annual electricity demand associated with a representative composting facility or operation would represent approximately 0.00130% to 0.01003% of 2024 statewide electricity consumption, depending on the operating scenario under consideration.

In conclusion, operation of the proposed small and medium composting facility/operation scenarios would require fuel and electricity for transportation activities, mobile equipment, stationary equipment, and facility operations; however, energy consumption would be typical of facilities/operations of this type and scale and would occur in compliance with applicable state and federal energy-efficiency standards. In addition, compost production and use may reduce reliance on energy-intensive synthetic fertilizers, thereby offsetting a portion of the energy demand associated with fertilizer manufacturing and distribution. Accordingly, operation of the representative facilities and operations would not result in the wasteful, inefficient, or unnecessary consumption of energy, and impacts related to energy resources would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.5-2: Conflict with or Obstruction of a State Plan for Renewable Energy or Energy Efficiency

The small and medium composting facilities and operations that are anticipated to be constructed/operated under the program may include buildings, equipment, and vehicles that are required to comply with existing State regulations for energy efficiency. For these reasons, this impact would be **less than significant**.

Discussion

The construction and operation of small and medium compost facilities and operations would entail the use of buildings, equipment, and vehicles subject to State energy policies. The sustainable conversion of organic waste to compost would not conflict with or obstruct but rather would support State goals for renewable energy generation. Further, the establishment of additional facilities/operations that would reasonably be anticipated to be more proximate to feedstock sources and points of disposition would be consistent with State policies seeking to reduce energy consumption through efficiency and transition to energy generation with lower carbon intensities. The buildings, vehicles, and equipment used to process organic waste would conform to the energy efficiency standards set forth by the State. For these reasons, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

3.7 Geology and Soils

This section evaluates the potential impacts related to geology, soils, and mineral resources that could result from implementation of the program. It describes current conditions relative to geology, soils, and mineral resources within the state of California. Mitigation measures are presented to mitigate significant impacts, where applicable, for small and medium composting facilities and operations.

One comment regarding geology and soils was received in response to the Notice of Preparation and requested identification of basic soil and grading considerations to support safe and compliant operations (e.g., stable operating surfaces, proper slopes, stormwater controls, and erosion-prevention measures).

3.7.1 Regulatory Setting

Federal

National Earthquake Hazards Reduction Act

In October 1977, the U.S. Congress enacted the Earthquake Hazards Reduction Act (U.S. Code Title 42 Section 7704) to reduce the risks to life and property from future earthquakes in the U.S. To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). The mission of the NEHRP includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improved building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improved mitigation capacity; and accelerated application of research results. The NEHRP designates the Federal Emergency Management Agency as the lead agency of the program and assigns several planning, coordinating, and reporting responsibilities. Other supporting agencies include the National Institutes of Standards and Technology, the National Science Foundation, and U.S. Geologic Survey (USGS).

Paleontological Resources Preservation Act

The Paleontological Resources Preservation Act of 2002 (U.S. Code Title 16 Sections 470aaa – 470aaa-11) codifies the generally accepted practice of limited vertebrate fossil collection and limited collection of other rare and scientifically significant fossils by qualified researchers. Researchers must obtain a permit from the appropriate federal agency before collecting any paleontological resource on federal land and agree to donate any materials recovered to recognized public institutions, where they would remain accessible to the public and other researchers. Compliance with these federal requirements would be relevant only if a federal agency permit or approval, such as a Clean Water Act Section 404 permit, were needed to implement a project.

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (Public Resources Code [PRC] Sections 2621 – 2630) intends to reduce the risk to life and property from surface fault rupture during earthquakes by regulating construction in active fault corridors, and by prohibiting the location of most types of structures intended for human occupancy across the traces of active faults. The act defines criteria for identifying active faults, giving legal support to terms such as active and inactive, and establishes a process for reviewing building proposals in Earthquake Fault Zones. Under the Alquist-Priolo Act, faults are zoned and construction along or across these

zones is strictly regulated if they are "sufficiently active" and "well-defined." A fault is considered sufficiently active if one or more of its segments or strands shows evidence of surface displacement during Holocene time (defined for purposes of the act as within the last 11,000 years). A fault is considered well-defined if its trace can be clearly identified by a trained geologist at the ground surface or in the shallow subsurface, using standard professional techniques, criteria, and judgment (California Geological Survey 2018). Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, cities and counties must require a geologic investigation to demonstrate that new construction of structures for human occupancy would not be constructed across active faults. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards.

Seismic Hazards Mapping Act

The intention of the Seismic Hazards Mapping Act of 1990 (PRC Sections 2690 – 2699.6) is to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including ground shaking, liquefaction, and seismically induced landslides. The act's provisions are similar in concept to those of the Alquist-Priolo Act; the state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped Seismic Hazard Zones. Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development.

California Building Code

The California Building Code (CBC) (California Code of Regulations, Title 24) is based on the International Building Code. The CBC has been modified from the International Building Code for California conditions, with more detailed and/or more stringent regulations to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, means of egress to facilities (entering and exiting), and general stability of buildings. The provisions of the CBC apply to the construction, alteration, movement, replacement, location, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California. The 2025 CBC provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (such as wind loads) for inclusion into building codes. In accordance with the CBC, structures should be able to: (1) resist minor earthquakes without damage; (2) resist moderate earthquakes without structural damage but with some non-structural damage; and (3) resist major earthquakes without collapse, but with some structural as well as non-structural damage.

Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. The CBC identifies seismic factors that must be considered in structural design. Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, while Chapter 18A regulates construction on unstable soils, such as expansive soils and areas subject to liquefaction. Appendix J of the CBC regulates grading activities, including drainage and erosion control and accessibility. The CBC contains a provision that provides for a preliminary soil report to be prepared to identify "the presence of critically expansive soils or other soil problems which, if not corrected, would lead to structural defects" (CBC Chapter 18 Section 1803.1.1.1).

General Waste Discharge Requirements for Commercial Composting Operations

The State Water Resources Control Board (SWRCB) developed the General Waste Discharge Requirements for Composting Operations (Composting General Order) to support the diversion of organic material from landfills

to composting facilities/operations while providing requirements to protect water quality. SWRCB certified the associated EIR and adopted the Composting General Order on August 4, 2015 (Resolution No. 2015-0054, Order WQ 2015-0121-DWQ). A revision to the Composting General Order was adopted and a supplemental EIR was certified on April 7, 2020 (Resolution No. 2020-0007) that allowed manure to be included as agricultural feedstock. Revisions were incorporated into General Waste Discharge Requirements for Commercial Composting Operations (Order WQ 2020-0012-DWQ). Order WQ 2020-0012-DWQ amends Order WQ 2015-0121-DWQ (SWRCB 2020).

The General Order focuses on the protection of groundwater and surface water and imposes specific requirements on composting facilities/operations (taking into consideration the types of feedstocks used, the volume of materials on-site at one time, and hydrogeologic site conditions). The order creates two tiers of facilities based on those conditions. These include:

- Design of facilities and operations to manage a 25-year, 24-hour peak storm event at a minimum to prevent or limit sediment-laden stormwater run-on and/or run-off.
- Grade working surfaces to facilitate drainage and minimize ponding by sloping or crowning composting pads to reduce infiltration.
- For Tier one composting activities, meet the soil percolation rate and minimum depth to groundwater criteria.
- For Tier two composting activities, surfaces and drainage ditches to be constructed of compacted fine-grained soil (like clay), asphaltic concrete, or equivalent.
- Requires routine inspection and monitoring of all facility and operation drainage systems and engineered working surfaces.

These Composting General Order requirements address the risk to soil by requiring adequate facility drainage to minimize ponding on composting pads to limit the infiltration of leachate into the subsurface, ensuring facilities can handle stormwater run-on and run-off from a moderately-sized precipitation event, and establishing minimum soil and depth to groundwater criteria that must be met to demonstrate low risk. If the minimum soil and depth to groundwater criteria cannot be met, then an engineered surface with low percolation rates must be constructed.

NPDES General Permit for Stormwater Discharges Associated with Construction Activity

SWRCB adopted the 2022 Construction Stormwater General Permit, Order 2022-0057-DWQ (General Order 2022-0057-DWQ), on September 8, 2022, and it went into effect on September 1, 2023. The state requires that projects disturbing more than 1 acre of land during construction file a Notice of Intent with the RWQCB to be covered under this permit, which requires the preparation of a stormwater pollution prevention plan (SWPPP) for discharges regulated under the SWRCB program. Construction activity subject to this permit includes, but is not limited to, clearing, demolition, grading, excavation, and other land disturbance activities. As part of a SWPPP, implementation of Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology is required to reduce or eliminate pollutants in stormwater runoff. The National Pollutant Discharge Elimination System (NPDES) permit must also include any additional requirements necessary to achieve applicable water quality standards through treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

California Public Resources Code Sections 5097.5 and 30244

State requirements for paleontological resource management are included in PRC Sections 5097.5 and 30244. PRC Section 5097.5 states that "a person shall not knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands" and identifies violations as a misdemeanor. This section defines public lands as "lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof." PRC Section 30244 states that "where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required."

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 (PRC Section 2710 et seq.) (SMARA) requires that the California State Geologist implement a mineral land classification system to identify and protect mineral resources of regional or statewide significance in areas where urban expansion or other irreversible land uses may occur, thereby potentially restricting or preventing future mineral extraction on such lands. As mandated by SMARA, aggregate mineral resources within the state are classified by the State Mining and Geology Board through application of the Mineral Resource Zone (MRZ) system. The MRZ system defines four zones based on the degree of available information characterizing the area and the presumed significance of the resource.

These zones are described as follows:

- MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- MRZ-2: Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
- MRZ-3: Areas containing mineral deposits for which the significance cannot be determined from available data.
- MRZ-4: Areas where available information is inadequate for assignment of any other MRZ category.

Local

Given its statewide extent and the possible number of local and regional responsible agencies, this EIR does not identify individual, potentially applicable local government plans, policies, and ordinances. Types of local regulations relevant to geology and soils may include general plan policies and ordinances protective of these resources. This EIR assumes that the reasonably foreseeable compliance responses with implementation of the program would be consistent with local plans, policies, and ordinances to the extent that development of small and medium composting facilities and operations under the program are subject to them, because local land use and permit approvals are typically conditioned upon such consistency.

3.7.2 Environmental Setting

Topography and Climate

California's topography is highly varied and includes 1,340 miles of seacoast, as well as high mountains, expansive valleys, and deserts. Elevations in California range from 282 feet below sea level in Death Valley to 14,494 feet at the peak of Mount Whitney.

The mean elevation of California is approximately 2,900 feet. The climate of California is as highly varied as its topography. Depending on elevation, proximity to the coast, and altitude, climate types include temperate oceanic, highland, subarctic, Mediterranean, steppe, and desert (USGS 1995). The average annual precipitation across all California climate types is approximately 23.5 inches and approximately 75% of the state's annual precipitation falls between November and March, primarily in the form of rain, with the exception of high mountain elevations (OEHHA 2022). The average annual precipitation varies greatly among California's 11 climate regions (as defined by the Western Regional Climate Center): from 4.7 inches in the Sonora Desert to 67.8 inches in the North Coast. Overall, northern California is wetter than southern California with the majority of the state's annual precipitation occurring in the northern coastal region.

Geomorphic Provinces

California is divided into 11 geomorphic provinces, which are naturally defined geologic regions that display a distinct landscape or landform. These provinces consist of the following (California Geological Survey 2002):

- Modoc Plateau – This province lies in the northeast corner of California, as well as in parts of Oregon and Nevada, and is bound by the Cascade Range on the west and the Basin and Range on the east and south. It is comprised of volcanic table land (elevation 4,000 – 6,000 feet above sea level) consisting of a thick accumulation of lava flows and tuff beds along with many small volcanic cones. Occasional lakes, marshes, and low-gradient streams meander across the plateau. The plateau is cut by many north-south faults.
- Cascade Range – This province is bound by the Modoc Plateau to the east, the Sierra Nevada Mountains to the south, and the Great Valley and Klamath Mountains to the west. It is comprised of a chain of active volcanic cones extending from Washington and Oregon into California and is dominated by Mt. Shasta, a glacier-mantled volcanic cone, rising 14,162 feet above sea level. The southern termination of this province is Lassen Peak, which last erupted in the early 1900s. The Cascade Range is transected by deep canyons of the Pit River, which discharges to the Sacramento River.
- Klamath Mountains – This province is situated in the northwest corner of the state. The Klamath Mountains have rugged topography with prominent peaks and ridges reaching 6,000 – 8,000 feet above sea level. In the western Klamath Mountains, an irregular drainage is incised into an uplifted plateau called the Klamath peneplain. The Klamath River follows a circuitous course from the Cascade Range through the Klamath Mountains.
- Coast Ranges – These northwest-trending mountain ranges (typically between 2,000 to 4,000 feet above sea level) and valleys extend from the southern and western edges of the Klamath Mountains near the Oregon border to the Transverse Ranges in southern California. The northern and southern portions of the Coast Ranges are separated by a depression containing the San Francisco Bay. The northern Coast Ranges are dominated by irregular, knobby, landslide-topography of the Franciscan Complex. The Coast

Ranges are subparallel to the active San Andreas Fault, which is more than 600 miles long, extending from Point Arena to the Gulf of California. West of the San Andreas is the Salinian Block, a granitic core extending from the southern extremity of the Coast Ranges to the north of the Farallon Islands.

- Great Valley – This province consists of an alluvial plain about 50 miles wide and 400 miles long in the central part of California. Its northern part consists of the Sacramento Valley, drained by the Sacramento River, and its southern part consists of the San Joaquin Valley, drained by the San Joaquin River. The Great Valley is a trough in which sediments have been deposited almost continuously since the Jurassic (about 160 million years ago). In the Sacramento Valley, the Sutter Buttes, the remnants of an isolated Pliocene volcano, rise above the valley floor.
- Sierra Nevada – This province consists of a tilted fault block nearly 400 miles long that is comprised of mostly granitic rock that formed during the Mesozoic Era. Its east face consists of a high, rugged, multiple scarp, contrasting with the gentle western slope that dips under sediments of the Great Valley. Deep river canyons are cut into the western slope.
- Basin and Range – This province is characterized by interior drainage with lakes and playas, and the typical horst and graben structure (subparallel, fault-bounded ranges separated by down-dropped basins). Death Valley, the lowest area in the United States (282 feet below sea level at Badwater Basin), is one of these grabens.
- Transverse Ranges – These ranges consist of an east-west trending series of steep mountain ranges and valleys. The east-west structure of the Transverse Ranges is oblique to the normal northwest trend of coastal California, hence the name "Transverse." The province extends offshore to include San Miguel, Santa Rosa, and Santa Cruz islands. Its eastern extension, the San Bernardino Mountains, has been displaced to the south along the San Andreas Fault. Intense north-south compression is squeezing the Transverse Ranges. As a result, this is one of the most rapidly rising regions on earth.
- Mojave Desert – This province consists of a broad interior region of isolated mountain ranges separated by expanses of desert plains. It has an interior enclosed drainage and many playas. There are two important fault trends that control topography: a prominent northwest-southeast trend and a secondary east-west trend (apparent alignment with Transverse Ranges is significant). The Mojave province is wedged in a sharp angle between the Garlock Fault (southern boundary Sierra Nevada) and the San Andreas Fault, where it bends east from its northwest trend. The northern boundary of the Mojave is separated from the prominent Basin and Range by the eastern extension of the Garlock Fault.
- Peninsular Ranges – This province consists of a series of ranges that are separated by northwest trending valleys, subparallel to faults branching from the San Andreas Fault. The trend of topography is similar to the Coast Ranges, but the geology is more like the Sierra Nevada, with granitic rock intruding the older metamorphic rocks. The Los Angeles Basin and the island group (Santa Catalina, Santa Barbara, and the distinctly terraced San Clemente and San Nicolas islands), together with the surrounding continental shelf (cut by deep submarine fault troughs), are included in this province.
- Colorado Desert – This low-lying barren desert basin, about 245 feet below sea level in part, is dominated by the Salton Sea. The province consists of a depressed block between active branches of alluvium-covered San Andreas Fault with the southern extension of the Mojave Desert on the east. It is characterized by the ancient beach lines and silt deposits of extinct Lake Cahuilla.

Geology

Plate tectonics and climate have played major roles in forming California's dramatic landscape. California is located on the active western boundary of the North American continental plate in contact with the oceanic Pacific Plate and the Gorda Plate. The junction of the three plates occurs approximately 115 miles south of the Oregon border just offshore of Cape Mendocino. The dynamic interactions between these three plates and California's climate are responsible for the unique topographic characteristics of California, including rugged mountain ranges, long and wide flat valleys, and dramatic coastlines (Harden 2004). Tectonics and climate also have a large effect on the occurrence of natural environmental hazards, such as earthquakes, landslides, and volcanic formations. This section discusses the general characteristics of natural hazards associated with the varied geology of California, including landslides, earthquakes, and active faults**.**

Landslides

Landsliding or mass wasting is a common erosional process in California and has played an integral part in shaping the state's landscape. Typically, landslides occur in mountainous regions of the state, but they can also occur in areas of low relief, including coastal bluffs, along river and stream banks, and inland desert areas.

Landsliding is the gravity-driven downhill mass movement of soil, rock, or both and can vary considerably in size, style and rate of movement, and type depending on the climate of a region, the steepness of slopes, rock type and soil depth, and moisture regime (Harden 2004:504). Geologists and engineers have classified different types of landslide features based on the depth and type of material that fails, the amount of water involved, rate of movement, and the type of movement involved (e.g., rockslides, rock falls, block topples, debris slides, debris flows, and soil creep). Landslide classification is important because different types of landslides pose different risks (Harden 2004).

The triggering mechanisms for mass wasting are varied and can be grouped into three general types: geological, morphological (e.g., tectonic uplift, fluvial erosion, vegetation removal, and freeze-thaw), and anthropogenic (e.g., slope excavation, slope loading, deforestation, irrigation, and reservoir drawdown) (USGS 2004). By far, the most common causes of the most damaging landslides include slope saturation from excessive rainfall or snowmelt, seismic activity, and volcanic activity. During the winter months severe winter storms contribute excessive precipitation to coastal and mountainous areas of California. Excessive rainfall or snowmelt can result in major changes in surface runoff and groundwater levels, resulting in saturated slopes that are prone to failure. Landslides can also result in flooding because both are triggered by similar mechanisms, such as intense rainfall or snowmelt events, high peak runoff, and groundwater saturation. Landslides can create sediment dams that block valleys and stream channels.

Many mountainous areas in California are susceptible to seismic activity. The seismicity associated with the numerous active faults and volcanoes, coupled with weakened rock materials and steep slopes, are contributing mechanisms for earthquake-induced landslides. Uplifted naturally weakened rocks, such as poorly consolidated sediments or marine deposits of mudstone or siltstone, are highly susceptible to slope failure due to ground shaking. Furthermore, folding and faulting of geologic materials during geologic periods of subduction and accretion, along with shearing along active fault zones, can result in weakened earthen materials that are prone to landsliding. Finally, landslides associated with volcanic activity can be regionally devastating. Volcanic lava and steam eruptions can melt snowpack at very high rates resulting in volumetrically large rock, soil, and ash flows that travel at high velocities down hillslopes and stream channels eroding the underlying topography. Mount

Shasta, located in northern California, experienced a very large debris avalanche associated with the collapse of the volcano approximately 350,000 years ago, as well as smaller events in historic times.

Active Faults

A fault is a fracture or zone of closely associated fractures along rocks that on one side have been displaced with respect to those on the other side. Most faults are the result of repeated displacement that may have taken place suddenly or by slow creep. A fault is distinguished from fractures or shears caused by landsliding or other gravity-induced surficial failures. A fault zone is a zone of related faults that commonly are braided and subparallel but may be branching and divergent. A fault zone has significant width (with respect to the scale of the fault being considered, portrayed, or investigated), ranging from a few feet to several miles.

In the state of California, earthquake faults have been designated as being active through a process that has been described in the 1972 Alquist-Priolo Earthquake Fault Zoning Act. An active fault is defined by the State as one that has "had surface displacement within Holocene time (about the last 11,000 years)" (California Geological Survey 2018:9). This definition does not, of course, mean that faults lacking evidence for surface displacement within Holocene time are necessarily inactive. A fault may be presumed to be inactive based on satisfactory geologic evidence; however, the evidence necessary to prove inactivity sometimes is difficult to obtain and locally may not exist.

Earthquakes

Earthquakes are a common and unpredictable occurrence in California. The tectonic development of California began millions of years ago by a shift in plate tectonics that converted the passive margin of the North American plate into an active margin of compressional and translational tectonic regimes. This shift in plate tectonics continues to make California one of the most geomorphically diverse, active, and picturesque locations in the United States. However, the tectonic processes that have made California what it is today are the same processes that disrupt our lives when the ground shakes in an earthquake.

While some parts of California, such as northern, central, and southern coastal areas, are more prone to earthquakes than others, all of California is prone to earthquakes. Scientists have made substantial progress in mapping faults where earthquakes are likely to occur and predicting the potential magnitude of an earthquake in any particular region. However, they have been unable to precisely predict where or when an earthquake will occur and what its magnitude will be.

The intensity of seismic shaking, or strong ground motion, during an earthquake is dependent on the distance and direction from the epicenter of the earthquake, the magnitude of the earthquake, and the geologic conditions of the surrounding area. Seismic shaking could result in the damage or collapse of buildings and other structures.

The San Andreas Fault is one of the most significant and famous faults in California. With its southern terminus south of California, in the Gulf of California, the San Andreas Fault trends northwesterly through the Salton Trough and continues north until it reaches the Transverse Ranges, where the fault takes a bend and trends in an east-west direction. North of the Transverse Ranges, the San Andreas Fault again trends northwest, until it is truncated at the Mendocino Triple Junction off the coast of Humboldt County. Some of the most significant California earthquakes have occurred on the San Andreas Fault, including the 1857 Fort Tejon earthquake (magnitude 7.9), the 1906 San Francisco earthquake (magnitude 7.7 to 8.3), and the 1989 Loma Prieta earthquake (magnitude 6.9).

Large earthquakes have also occurred on other major faults in California, an example being the March 26, 1872, Lone Pine earthquake (magnitude 7.4) on the Owens Valley Fault, located on the east side of the Sierra Nevada. The 1992 Landers earthquake (magnitude 7.3) ruptured the Johnson Valley, Landers (Kickapoo), Homestead Valley, Emerson, and Camp Rock faults in the Mojave Desert. Earthquakes above magnitude 7.0 are relatively rare but historically catastrophic, often accompanied by aftershocks and secondary hazards like fires, landslides, and tsunamis.

Seismic hazards resulting from earthquakes include surface fault rupture, ground shaking, and liquefaction. Each of these potential hazards is discussed in the following section.

Surface Fault Rupture

Surface rupture is the surface expression of movement along a fault. Structures built over an active fault can be torn apart if the ground ruptures. The potential for surface rupture is based on the concepts of recency and recurrence. Surface rupture along faults is generally limited to a linear zone a few meters wide. The Alquist-Priolo Act (see the "Regulatory Setting" section) was created to prohibit the location of structures designed for human occupancy across, or within 50 feet of, an active fault, thereby reducing the loss of life and property from an earthquake.

Ground Shaking

The intensity of seismic shaking, or strong ground motion, during an earthquake is dependent on the distance and direction from the epicenter of the earthquake, the magnitude of the earthquake, and the geologic conditions of the surrounding area. Ground shaking could result in damage or collapse of buildings and other structures. Using information from recent earthquakes, improved mapping of active faults, and new modeling for estimating earthquake probabilities, the 2014 Working Group on California Earthquake Probabilities updated the 30-year earthquake forecast for California (Field and 2014 WGCEP 2015). This has provided the basis for updating building codes, earthquake insurance products, emergency plans, and other risk-mitigation efforts in California.

Liquefaction and Lateral Spreading

Liquefaction is a phenomenon in which loose, saturated, granular soil deposits lose a significant portion of their shear strength because of excess pore water pressure buildup. As a result, these soils behave like a liquid during seismic shaking and re-solidify when shaking stops. The potential for liquefaction is highest in areas with high groundwater and loose, fine, sandy soils at depths of less than 50 feet.

Liquefaction may also lead to lateral spreading. Lateral spreading (also known as expansion) is the horizontal movement or spreading of soil toward an "open face," such as a streambank, the open side of fill embankments, or the sides of levees. It often occurs in response to liquefaction of soils in an adjacent area. The potential for failure from lateral spreading is highest in areas where there is a high groundwater table, where there are relatively soft and recent alluvial deposits, and where creek banks are relatively high.

Soils

Soil conditions in California are extremely variable and reflect a diversity of geologic, topographic, climatic, temporal, and vegetative conditions that influence soil formation and composition. Soils can be classified using a variety of methods depending on the application of the information. Engineers use classification methods that evaluate the engineering properties of a soil (e.g., Unified Soil Classification System). Soil scientists typically use

classification methods that group soils by their intrinsic properties, geologic origin, and soil behavior in different conditions. The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service uses the USDA soil taxonomy system for the classification of soils. This classification is based on chemical, biological, and physical characteristics of soils, including soil color, texture, structure, mineralogy, salt content, and depth. Soils are not unique to specific regions and as a result, a regional evaluation of soils is not informative or useful in the context of a program EIR. Rather, a general discussion of soil properties and potential soil hazards that could be relevant to projects implemented under the proposed regulation is provided.

Erosion

Erosion is the process by which surface soils are detached and transported by water and/or wind. Erosion has a detrimental effect on soil productivity because erosion begins with the upper horizons of a soil profile, which contain organic matter and microbial communities vital to supporting plant growth. Factors that influence the erosion potential of a soil include vegetative cover; soil properties such as soil texture, structure, rock fragments and depth; steepness and slope length; and climatic factors such as the amount and intensity of precipitation. Soil erosion can also be caused by wind in areas with a combination of high winds, removed or disturbed vegetation, fine sandy or silty textures, and low organic matter content. The erosion rate of a particular soil in the absence of human activities is referred to as the natural (background) or geologic erosion rate. Soil erosion in excess of the natural erosion rate is called accelerated soil erosion and is usually caused by human activities such as cultivation, grazing, timber harvesting, poor road construction practices, grading, and other land disturbing activities.

Expansive Soils

Expansive soils (also known as shrink-swell soils) are soils that contain expansive clay minerals that can absorb significant amounts of water. The presence of these clay minerals makes the soil prone to large changes in volume in response to changes in water content. When an expansive soil becomes wet, water is absorbed and it increases in volume, and as the soil dries it contracts and decreases in volume. This repeated change in volume over time can produce enough force and stress on buildings, underground utilities, and other structures to damage foundations, pipes, and walls. Shrink and swell of expansive soils can also cause soil fissures that allow deeper penetration of water during wet conditions. Expansive soils are common throughout California, especially along the coast and coastal mountains extending the entire length of the state.

Liquefaction and Lateral Spreading

Liquefaction is a phenomenon in which loose, saturated, granular soil deposits lose a significant portion of their shear strength because of excess pore water pressure buildup. An earthquake typically causes an increase in pore water pressure and subsequent liquefaction. These soils behave like a liquid during seismic shaking and re-solidify when shaking stops. The potential for liquefaction is highest in areas with high groundwater and loose, fine, sandy soils at depths of less than 50 feet.

Liquefaction may also lead to lateral spreading. Lateral spreading (also known as expansion) is the horizontal movement or spreading of soil toward an “open face,” such as a streambank, the open side of fill embankments, or the sides of levees. It often occurs in response to liquefaction of soils in an adjacent area. The potential for failure from lateral spreading is highest in areas where there is a high groundwater table, where there are relatively soft and recent alluvial deposits, and where creek banks are relatively high.

Paleontological Resources

Paleontology is the study of life forms in past geologic time, specifically through the study of plant and animal fossils. Paleontological resources represent a small, non-renewable, and impact-sensitive scientific and educational resource. Paleontological resources are sites or geologic deposits that consist of unique and unusual individual fossils or assemblages of fossils, diagnostically or stratigraphically important, and add to the existing body of knowledge in particular areas (e.g., stratigraphically, taxonomically, or regionally). Fossil remains such as bones, teeth and claws, eggs, embryos, nests, skin, and muscles are found in places where they were originally buried in geologic deposits (rock formations). Fossils can be used to determine the geological events and relative ages of depositional layers to better understand the development of the region and area. The age, abundance, and distribution of fossils depend on the topography of the area and geologic formation in which they occur. In California, these resources (e.g., vertebrate, invertebrate, and plant fossils) are generally found in sedimentary and metasedimentary deposits (Caltrans 2026).

Mineral Resources

Statewide Nonfuel Mineral Production

Based on the U.S. Geological Survey data for 2023, California ranked fifth after Arizona, Minnesota, Nevada, and Texas in the value of nonfuel mineral production, accounting for approximately 4.85% of the nation's total (Marquis 2025). The market value of nonfuel mineral production for California was $5.6 billion. California produced more than two dozen different industrial minerals during that year. California led the nation in the first and only production of rare earth elements and boron, and ranked first in gypsum. The state ranked second for construction sand and gravel, third for Portland cement, and fourth for gemstones. Other minerals produced commercially include industrial sand and gravel, cement (masonry), clays (ball clay, bentonite, kaolin, montmorillonite), clays (common), diatomite, feldspar, lime, magnesium compounds, perlite (crude), pumice and pumicite, salt, soda ash, and zeolites. There were about 586 active mines in California producing nonfuel minerals during 2023 (Marquis 2025).

Statewide Oil, Gas, and Geothermal Production

Crude Oil

In 2025, California was the eighth-largest producer of crude oil among the 50 states, and ranked third in crude oil refining capacity (United States Energy Information Administration [EIA] 2026). California hosts some of the country's largest fields and produced approximately 93,858 barrels of oil in 2025 (EIA 2026). Reservoirs along California's Pacific Coast, including in the Los Angeles basin and the Central Valley, contain major crude oil reserves, and the state holds about 2% of the nation's total proved crude oil reserves (EIA 2026).

Natural Gas

According to the California Energy Commission (CEC), the state produces about 10% of the total natural gas consumed in the state (CEC 2026a). The other natural gas consumed in California comes from out-of-state production basins and is delivered into California via the interstate natural gas pipeline system. Approximately 45% of the natural gas consumed in California is used for electricity generation and the remainder is consumed in the residential (21%), industrial (25%), and commercial (9%) sectors (CEC 2026a).

Geothermal

Geothermal energy is produced by the heat of the Earth and is often associated with volcanic and seismically active regions. In 2023, California's geothermal power plants produced about 5.1% of the state's total electricity (CEC 2026b). The world's largest geothermal field, the Geysers, is located in California and extends across portions of Sonoma, Lake, and Mendocino counties. Other major geothermal locations include the Salton Sea area in Imperial County, the Coso Hot Springs area in Inyo County, and the Mammoth Lakes area in Mono County (CEC 2026c).

3.7.3 Environmental Impacts and Mitigation Measures

Methodology

The examination of geology and soils is based on information obtained from reviews of available literature and technical guides pertaining to general soil effects and geologic hazards, regulations and planning documents, environmental impact reports, background reports prepared for plans, and other statewide projects and published and unpublished geologic literature. These sources were reviewed and summarized to understand the types of existing conditions that composting facilities and operations could encounter in California and to identify potential environmental effects, based on the thresholds of significance. In determining the level of significance, the analysis assumes that site specific facilities would comply with relevant federal, state, and local laws, regulations, and ordinances.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the program would result in a potentially significant impact related to geology and soils if it would:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure (including liquefaction), or landslides.
- Result in substantial soil erosion or the loss of topsoil.
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse, or be located on expansive soil, as defined in the Uniform Building Code, creating substantial direct or indirect risks to life or property.
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.
- Directly or indirectly destroy a unique paleontological resource or site or unique geological feature.
- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

Issues Not Discussed Further

No issues related to geology, soils, and mineral resources are dismissed from further analysis.

Environmental Impacts and Mitigation Measures

Impact 3.7-1: Potential Substantial Adverse Effects Involving Rupture of a Known Earthquake Fault, Strong Seismic Ground Shaking, or Other Seismic Effects

Small and medium composting facilities and operations developed under this program could be located in seismically active areas where strong seismic shaking could damage project structures, cause liquefaction in susceptible soils, and create a safety risk for people in the area. However, the potential for risk to people and structures would be addressed through the seismic design and geotechnical investigation requirements of the CBC and enforced through local permit mechanisms. Therefore, this impact would be **less than significant.**

Discussion

New small and medium composting facilities could be located in seismically active areas or near active faults capable of producing large earthquakes. A large earthquake could generate strong seismic shaking, which could rupture faults, damage project structures and infrastructure, cause liquefaction in susceptible soils, and create a safety risk for people in the area.

The potential risk to persons and property associated with seismic shaking would be mitigated through compliance with the seismic design requirements of the CBC. As required by State law, any future structures would be designed to resist stresses produced by lateral forces caused by wind and earthquakes and would meet the minimum seismic safety and structural design requirements described in Chapter 16 of the California Building Standards Code. Additionally, the geotechnical investigations and foundation studies for future projects would identify and address potential liquefaction risks or other seismic effects and would ensure that structures and foundations are designed to protect life and property. The requirements of the CBC would be enforced through permitting processes at the local level. In addition, faults are zoned and construction along or across these zones is strictly regulated under the Alquist-Priolo Act, if they are “sufficiently active” and “well-defined,” and the Seismic Hazards Mapping Act provides for local regulation of development to protect against seismic risks. The potential for risk to people and structures would thus be addressed through the seismic design and geotechnical investigation requirement of the California Building Standards Code and enforced through local permit systems. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.7-2: Substantial Erosion or Loss of Topsoil

The development of small and medium composting facilities and operations under this program would involve earthwork activities such as grading, cut and fill, and excavation for utilities that could result in soil erosion or the loss of topsoil. Projects that disturb 1 acre or more of soil are subject to both the SWRCB’s Phase II Final Rule, which applies to clearing, grading, excavation, stockpiling, and re-construction involving removal and replacement of soil, as well as the conditions of the General Order 2022-0057-DWQ. Both require the incorporation of BMPs to control erosion and sedimentation. In addition, the SWRCB General Order for Commercial Composting Operations regulates grading and risk to soils, establishing minimum drainage, soil and depth to groundwater criteria. As a result, this impact would be **less than significant**.

Discussion

Construction activities stemming from implementation of the program and associated with small and medium composting facilities and operations would involve earthwork activities such as grading, cut and fill, and excavation for utilities, both on site and potentially off site for utilities and transportation improvements. Once vegetation is removed, soils could become exposed to winds and water flows that could result in soil erosion or the loss of topsoil.

As detailed in Section 3.10, "Hydrology and Water Quality," each project would be required to adhere to the conditions of General Order 2022-0057-DWQ. As part of the permit requirements, the contractor would be required to include construction BMPs, as detailed in a SWPPP, for all construction activities. The SWPPP and BMPs would be developed on a project-specific basis and would contain the specific criteria for construction activities that would be required to minimize the potential for off-site transport of potential pollutants, including sediment. In addition, the SWPPP would address grading and slope stabilization methods. Typical temporary BMPs include properly installed silt fences, sediment logs, detention basins, and inlet protection. Temporary BMPs would be installed before site grading begins and would be maintained throughout construction until permanent erosion control features are functioning. Following completion of construction activities, disturbed areas would be either revegetated or covered by impervious surfaces, such as asphalt or buildings, which limit the potential for erosion.

For projects located under the jurisdiction of small municipal separate storm sewer systems (MS4s), SWRCB's Phase II Final Rule requires MS4 permittees to have a Construction Site Runoff Control program. The municipality (MS4 permittee) would administer local ordinances, inspections, enforcement, and oversight of construction activities. The construction site operator must obtain coverage under and comply with General Order 2022-0057-DWQ.

Construction-period BMPs installed as permit conditions have proven effective in controlling site runoff and sediment in stormwater. With adherence to the required BMPs, potential construction-related erosion would be controlled. For the reasons discussed, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.7-3: Placement of Small and Medium Composting Facilities and Operations in Areas of Expansive or Unstable Soils, or Creation of Instability as a Result of the Program

Implementation of the program would facilitate the development of up to 40 new small and medium organic waste recovery facilities and associated infrastructure by 2034. New facilities could be located in a variety of geologic, soil, and slope conditions with varying soil stability risks. However, per State requirements, site-specific projects would be required to prepare a geotechnical report and meet CBC Title 24 conditions related to unstable soils. Therefore, this impact would be **less than significant.**

Discussion

Implementation of the program would facilitate the development of up to 40 new small and medium compost facilities/operations and associated infrastructure by 2034. These facilities would most likely be located in rural agricultural areas throughout the state or be co-located at existing solid waste-handling facilities or wastewater

treatment plants in urban areas; however, the exact locations of potential new compost facilities and operations are unknown.

Potential new compost facilities and operations could be located in a variety of geologic, soil, and slope conditions with varying soil stability risks. Expansive soils (shrink–swell clays) change volume with moisture changes, causing heave, cracking, and differential movement. This can damage foundations and embankments, leading to structural failure or reduced service life, depending on what facilities are developed. In organic waste facilities, where moisture content can fluctuate with waste loading and weather, these movements can compromise containment integrity and increase maintenance needs.

However, any new compost facility/operation with proposed buildings, retaining walls, roadways, or significant grading would be required to comply with the CBC, including the need to perform geotechnical investigations to identify expansive and unstable soils and geologic units, and comply with industry standard measures to minimize risks (such as measures related to foundation design, treatment of soils, and engineered fills). The CBC requires a site-specific foundation study and report for each new construction site. If poor soils are present, these studies ensure appropriate construction measures such as over-excavation, ground improvement, deep foundations, or specialized foundation systems are used. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.7-4: Have Soils Incapable of Adequately Supporting the Use of Septic Tanks or Alternative Wastewater Disposal Systems

Site specific projects anticipated within this program could be located in rural areas where municipal sewer systems are not available to serve on-site restrooms. Septic systems installed in soils that cannot effectively filter effluent can result in groundwater contamination or adverse human health effects. However, existing regulations are in place to prevent inappropriate siting of septic and alternative wastewater disposal systems. Therefore, this impact would be **less than significant.**

Discussion

The project anticipates up to 40 new small and medium composting facilities and operations with on-site staff that would require restroom facilities. Some of these projects are anticipated to occur in rural areas where municipal sanitary sewer systems are not accessible. Generally organic waste recovery facilities/operations do not employ many personnel, and some may be able to rely on above-ground portable restrooms. Other projects may require the installation of septic systems to serve offices and restroom facilities for personnel. Septic systems installed in soils that cannot effectively filter effluent can result in groundwater contamination or adverse human health effects.

Where public sewer systems are not available, the CBC allows for the construction of private sewer systems, including septic tanks or alternative wastewater disposal systems. Applicable standards are included in California Code of Regulations Title 24, Part 5 and include restrictions for proximity to groundwater and soil absorption rate standards. Where local soils do not meet standards, the CBC provides guidance on excavation of soil materials and replacement with materials that meet the standards. Each future project that requires a septic system would be required to demonstrate compliance with the CBC through the project permitting process with enforcement by the local permitting agency. Because existing regulations are in place to prevent inappropriate siting of septic and alternative wastewater disposal systems, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.7-5: Destruction of a Unique Paleontological Resource or Site

Many unique and important fossils have been found in California. Development that may occur under this program would require ground disturbance, which could harm or destroy unique paleontological resources (depending on the depth of ground disturbance and potential for paleontological resources in the area of development). Therefore, this impact would be **potentially significant**.

Discussion

The value or importance of different fossil groups varies depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions (such as for a research project).

Marine invertebrates are generally common; the fossil record is well developed and well documented, and generally they would not be considered a unique paleontological resource. Identified vertebrate marine and terrestrial fossils are generally considered scientifically important because they are relatively rare. More than 100,000 vertebrate fossils have been documented in California. Dense clusters of fossil sites have been found near Sacramento, Redding, San Jose, Los Angeles, and San Diego and between Fresno and Bakersfield (UCMP 2026).

Site specific projects anticipated within this program would require ground disturbance, which could harm or destroy paleontological resources in the disturbance area depending on the depth of construction and the underlying geology. Projects could be located in previously disturbed areas and areas zoned for industrial or solid waste-handling activities or in undeveloped and undisturbed areas. Encountering unique resources in a previously disturbed site is unlikely; however, the potential for unique paleontological or geologic resources to be present on a project site would need to be assessed on a site-specific basis during project-level environmental review. This review would consider the local geology that underlays a project site, the level of existing disturbance, and the likelihood of encountering unique paleontological resources.

Because individual development projects have the potential to alter or destroy unique paleontological resources, this impact would be potentially significant.

Mitigation Measures

Mitigation Measure 3.7-5: Conduct Site-Specific Evaluation and Redesign or Avoid Significant Paleontological Resources

Prior to local agency approval of a small or medium composting facility/operation under the program and where native soils may be present, the applicants shall retain a qualified geologist or paleontologist to identify and evaluate the potential unique paleontological resources to be present within the project site. The level of screening or identification efforts and the resulting documentation should consider the type and extent of excavation and proximity to fossil bearing strata.

During construction all ground-disturbing activity in the area of the discovery shall be halted and the county shall be notified immediately if evidence of any paleontological features or deposits (e.g., vertebrate, invertebrate, or plant fossils, traces, and/or trackways) are discovered during construction-related earth-moving

activities. A qualified paleontologist shall be retained by the project applicant to assess the significance of the find prior to reinitiation of construction activities. If the paleontologist determines that the find does not constitute a significant or unique resource, construction may proceed. If the paleontologist determines that further information is needed to evaluate significance, a data recovery plan shall be prepared. If the find is determined to be significant by the qualified paleontologist, they shall work with the applicant to avoid disturbance to the resources. If complete avoidance is not feasible in light of project design, economics, logistics, or other factors, accepted professional standards for documentation of any find and recovery of important fossils shall be followed.

Significance after Mitigation

Implementation of Mitigation Measure 3.7-5 would reduce potentially significant impacts to paleontological resources because discovered resources would be avoided, moved, recorded, or otherwise treated appropriately, in accordance with pertinent laws and regulations. As a result, impacts would be reduced to a level of **less than significant**.

Impact 3.7-6: Loss of Availability of a Known Valuable Mineral Resource or a Locally Important Mineral Resource Recovery Site

Mineral resources are abundant in California, and it is possible that site specific projects anticipated within this program could be located in or near areas with important mineral resources. Because new small and medium composting facilities and operations would be required to evaluate potential effects on mineral resources through local permitting in accordance with Section 2762 of SMARA, this impact would be **less than significant**.

Discussion

Mineral resources are abundant in California, and it is possible that future projects implemented in response to the proposed regulation could be located in or near areas with important mineral resources. Areas of statewide and regional importance are determined by the State Geologist, protected through the mineral resource management policies developed by local jurisdictions and lead agencies, and enforced through project permitting in accordance with Section 2762 of SMARA. Although SMARA provides oversight, the protection of MRZ-2 zones or the investigation of the potential for important mineral resources in MRZ-3 and MRZ-4 zones would require site specific review which is not assured and relies on the discretion of the local approving authorities. However, the small size of a proposed composting facility/operation (5 to 11 acres) and small permanent buildings would not directly significantly impact subsurface mineral resources during construction, if found to be present, and may not represent an irreversible commitment to an alternative use.

If a jurisdiction wishes to permit a project that would limit mineral extraction in a protected area, the project may be required to prepare an evaluation of the significance of the specific mineral deposit that would be affected for submission to the State Geologist. Before a use that would threaten potential mineral extraction in an area of regional or state importance is permitted, the lead agency must prepare a statement specifying its reasons and demonstrating that the agency has balanced mineral values against alternative land uses and considered the importance of the minerals to the market region as a whole and not just their importance to the lead agency's jurisdiction.

Because new small and medium composting facilities would be required to evaluate potential effects on mineral resources through local permitting in accordance with Section 2762 of SMARA, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

3.8 Greenhouse Gas Emissions and Climate Change

This section presents a summary of regulations applicable to greenhouse gas (GHG) emissions; an overview of climate change science; GHG emission sources and inventories; quantification of construction-related GHG emissions and GHG emission reductions associated with program implementation; and an analysis of program impacts related to climate change and consistency with applicable GHG reduction goals, policies, and regulations.

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code Section 38505(g), for purposes of administering many of the state's GHG emissions reduction programs, GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride. Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are the predominant GHGs emitted as the result of human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases such as HFCs, PFCs, and SF_6 (IPCC 2021). Refer to Section 3.8.3, "Environmental Setting," for further information.

One comment letter regarding GHGs was received in response to the Notice of Preparation. The comment requested that the EIR outline general statewide assumptions about GHG reductions and identify typical sources of emissions for small and medium composting facilities and operations.

3.8.1 Regulatory Setting

Federal

In a 2007 Supreme Court ruling, Massachusetts v. EPA, the Supreme Court ruled that CO_2 and other GHGs fit the Clean Air Act's broad definition of an air pollutant and that the EPA had the statutory authority to regulate them. The EPA issued a formal Endangerment Finding in 2009 determining that GHGs endanger public health and welfare, which served as the legal foundation for federal climate regulations. In response, the EPA developed regulations implementing federal policy to address global climate change. In 2009, the EPA issued a Final Rule for mandatory reporting of GHG emissions, which applies to fossil fuel and industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles. The rule does not regulate the emission of GHGs; it only requires the monitoring and reporting of GHG emissions for those sources emitting GHGs above certain thresholds.

On February 12, 2026, the EPA finalized the rescission of the 2009 Endangerment Finding and repealed federal GHG emission standards for motor vehicles. The agency concluded that the Clean Air Act does not grant it the authority to implement broad regulatory programs aimed at global climate change, shifting the legal landscape as ongoing challenges move through the federal courts. The EPA proposed a rule to permanently eliminate reporting obligations for most source categories under the GHG Reporting Program. However, because the repeal is not yet finalized, the existing reporting requirements remain in effect.

State

Statewide GHG Emission Targets and Climate Change Scoping Plan

Reducing GHG emissions in California has been an objective of the State government for approximately two decades. GHG emission targets established by the State legislature include reducing statewide GHG emissions to 1990 levels by 2020 (AB 32 of 2006) and reducing GHG emissions to 40% below 1990 levels by 2030 (SB 32 of 2016). Executive Order (EO) S-3-05 calls for statewide GHG emissions to be reduced to 80% below 1990 levels by 2050. This target was superseded by AB 1279, which codifies a goal for carbon neutrality and emission reductions of 85% below 1990 levels by 2045. These targets are in line with the scientifically established levels needed in the U.S. to limit the rise in global temperature to no more than two degrees Celsius, the warming threshold at which major climate disruptions, such as super droughts and rising sea levels, are projected; these targets also support efforts to limit the temperature increase even further to 1.5 degrees Celsius (United Nations 2015).

California Air Resources Board adopted the *Final 2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) on December 16, 2022, which outlines the State's pathway to achieve its carbon neutrality and an 85% reduction in 1990 emissions goal by 2045 using a combined top-down and bottom-up approach under various scenarios. It identifies the reductions needed by each GHG emission sector (e.g., transportation [including off-road mobile source emissions], industry, electricity generation, agriculture, commercial and residential, pollutants with high global warming potential, and recycling and waste) to achieve these goals (CARB 2022).

California established a Cap-and-Invest Program under AB 32 which sets a declining statewide limit on major GHG sources such as refineries and power plants and requires emitters to purchase allowances at auction (CARB 2026a).

The State has also passed more detailed legislation addressing GHG emissions associated with transportation, electricity generation, and energy consumption, as summarized in the following.

Transportation-Related Standards and Regulations

California's Advanced Clean Cars/Advanced Clean Trucks Program sets aggressive vehicle standards requiring a rapid transition toward 100% zero-emission passenger car sales and incremental sales mandates for medium- and heavy-duty zero-emission commercial trucks. As part of its Advanced Clean Cars program, CARB established more stringent GHG emission standards and fuel efficiency standards for fossil fuel-powered on-road vehicles than did the EPA. In August 2022, CARB adopted the Advanced Clean Cars II (ACC II) regulation, which requires increasing percentages of new passenger cars, pickup trucks, and sport utility vehicles sold in California to be zero-emission vehicles, ultimately reaching 100% of new vehicle sales by model year 2035. CARB has also adopted the Advanced Clean Trucks regulation, which establishes increasing sales requirements for zero-emission medium- and heavy-duty vehicles. Together, these programs are intended to reduce transportation-related GHG emissions, improve air quality, and accelerate the transition to zero-emission transportation (CARB 2025a, 2025b).

Executive Order B-48-18, signed into law in January 2018, requires all State entities to work with the private sector to have at least 5 million zero emission vehicles on the road by 2030, as well as 200 hydrogen-fueling stations and 250,000 EV-charging stations installed by 2025. It specifies that 10,000 of these charging stations must be direct-current fast chargers (State of California 2018). As of 2026, California has surpassed 2.5 million

cumulative sales of new zero-emission vehicles (including battery-electric, plug-in hybrid, and fuel cell vehicles), and has about 200,000 public EV charging stations.

California's Short-Lived Climate Pollutant (SLCP) regulations, primarily driven by SB 1383, aim to slash methane and other potent greenhouse gas emissions by targeting organic waste and edible food disposal. The program aims to cut statewide disposal of organic waste (food scraps, yard trimmings, paper) by 75% below 2014 levels, and recover at least 20% of commercial edible food that would otherwise go to landfills so it can feed people in need. The program seeks to achieve a 40% reduction in statewide methane and HFC emissions, and a 50% reduction in black carbon emissions by 2030. The regulation establishes the requirement for cities and counties to provide automatic organic waste collection services to all residents and businesses. Businesses and public entities must place color-coded or labeled containers next to trash bins to separate organic and recyclable materials, and large commercial food generators (like supermarkets, hotels, and large restaurants) must partner with food recovery organizations to donate surplus edible food. Local jurisdictions are required to buy back a designated share of recycled organic products, such as compost, mulch, or renewable natural gas.

CARB adopted the Low Carbon Fuel Standard (LCFS) in 2007 to reduce the carbon intensity (CI) of California's transportation fuels. The LCFS is a market-based rule designed to reduce GHG emissions and air pollution from the state's transportation sector by lowering the CI of fuels over time. The program measures the CI of the fuel based on the lifecycle GHG emissions of the fuel, including extraction, production, distribution, and final combustion. CARB sets strict CI benchmarks that become more demanding every year. Providers of high-carbon, petroleum-based fuels generate "deficits" and must comply by balancing their portfolios. Providers of cleaner alternatives, such as electricity, hydrogen, renewable natural gas, and sustainable biofuels, generate tradable "credits." Petroleum importers and refiners buy credits from clean-fuel producers. This creates a financial incentive for innovation and investment in low-carbon energy infrastructure without relying directly on public tax funds. Regulated fuels include gasoline and diesel, along with alternatives like corn-derived ethanol, biomass-based diesel, propane, natural gas, electricity, and hydrogen. EV charging station operators and hydrogen refueling networks can earn credits based on the clean energy they dispense. The program targets continuous reductions through 2045, aiming for deep decarbonization of the state's transportation fuel mix. Updated amendments took effect in mid-2025 to tighten benchmarks further and align with the state's broader climate goals, though the program continues to navigate debates regarding its impact on fuel prices (CARB 2026b).

In addition to regulations that address tailpipe emissions and transportation fuels, the state legislature has passed regulations to address the vehicle miles traveled (VMT) by on-road vehicles. Since passage of SB 375 in 2008, CARB requires metropolitan planning organizations to develop and adopt sustainable communities strategies as a component of the federally-prepared regional transportation plans to show reductions in GHG emissions from passenger cars and light-duty trucks in their respective regions for 2020 and 2035 (CARB 2026c).

Legislation Associated with Electricity Generation

The State has passed legislation requiring the increasing use of renewables to produce electricity for consumers. California utilities are required to generate 33% of their electricity from renewables by 2020 (SB X1-2 of 2011); 52% by 2027, 60% by 2030, and 100% by 2045 (SB 100 of 2018). These targets were superseded by SB 1020, which promulgated the State's renewable energy targets to meet 95% of retail electricity by 2035, 95% by 2040, and 100% by 2045, working in tandem with AB 1279's goals of achieving carbon neutrality by 2045.

Local

Air emission sources in California are regulated locally by 35 individual air districts. However, regulation of GHG emissions in California is primarily conducted at the state level by CARB through a variety of statewide programs, regulations, and policies. While some local air districts have adopted GHG-related CEQA guidance, thresholds, climate action plan guidance, or permitting requirements, GHG regulation in California is generally implemented through CARB-administered programs.

3.8.2 Environmental Setting

The Physical Scientific Basis of Greenhouse Gas Emissions and Climate Change

Certain gases in the earth's atmosphere, referred to collectively as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the atmosphere from space. Most solar radiation passes through the earth's atmosphere; a portion of the radiation is absorbed by the earth's surface, and a portion of this radiation is reflected toward space. The absorbed radiation is then emitted from the earth as low-frequency infrared radiation.[6] Infrared radiation is absorbed by GHGs in the atmosphere. As a result, infrared radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. However, as GHG concentrations in the atmosphere increase, a larger portion of the infrared radiation is absorbed, intensifying the greenhouse effect.

Prominent GHGs contributing to the greenhouse effect are CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6. Human-caused emissions of these GHGs in excess of natural ambient concentrations are found to be responsible for intensifying the greenhouse effect and have led to unnatural warming of the earth's climate, known as global climate change or global warming. The Intergovernmental Panel on Climate Change (IPCC's) Sixth Assessment Report contains the strongest warnings to date on the causes and impacts of climate change. The IPCC has concluded that limiting future climate change will require deep, rapid, and sustained reductions in GHG emissions, as well as transformative changes in energy systems, transportation, land use, industrial processes, and patterns of consumption (IPCC 2023).

GHGs are global pollutants, unlike criteria pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas most pollutants with localized air quality effects have relatively short atmospheric lifetimes (several hours to several days), GHGs have long atmospheric lifetimes (one year to several thousand years). GHGs persist in the atmosphere long enough to be dispersed around the globe. Although the atmospheric lifetime of any GHG molecule depends on multiple variables and cannot be determined with any certainty, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Land and ocean sinks absorb a substantial portion of anthropogenic CO_2 emissions, while the remainder accumulates in the atmosphere and contributes to increasing atmospheric GHG concentrations and climate change (IPCC 2023).

A sub-category of GHGs are known as short-lived climate pollutants. SLCPs are powerful climate-warming gases and particles, including methane, HFCs, tropospheric ozone, and black carbon that stay in the atmosphere for a much shorter time than CO_2. Though they have short lifetimes (days to about 12 years), they have global

[6] The frequency at which bodies emit radiation is proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency infrared radiation than does the sun.

warming potentials tens to thousands of times stronger per molecule than CO_2. Because they leave the atmosphere quickly, reducing SLCP emissions produces an immediate brake on global warming (potentially slowing warming by 0.6 °C by 2050). Many SLCPs (like black carbon and ground-level ozone) are also dangerous air pollutants; cutting emissions of them potentially saves millions of lives and improves overall health and crop yields.

Effects of Climate Change on the Environment

According to IPCC, continued GHG emissions will result in further warming of the global climate system, with the magnitude of future temperature increases dependent on future emission pathways and mitigation efforts (IPCC 2023). Temperatures throughout California are projected to continue increasing through the end of the century, with the magnitude of warming dependent on future GHG emission scenarios (Bedsworth et al. 2024).

Temperatures in California have risen almost 3 °F since the beginning of the 20th century. In the 126-year period of record (1895 – 2020), the 6 warmest years have all occurred since 2014 (2014, 2015, 2016, 2017, 2018, and 2020). The 2015 – 2020 period saw the highest number of extremely hot days, slightly exceeding the record set in the early 1930s, and included the years with the second- and third-highest temperatures (2017 and 2020). The greatest number of very warm nights has occurred since 2005, including the 6 years with the highest values (2006, 2013, 2015, 2017, 2018, and 2020). The number of cold nights has been below average since 1995 (NOAA 2022).

Other environmental resources could be indirectly affected by the accumulation of GHG emissions and resulting rise in global average temperature. In recent years, California has been marked by extreme weather and its effects. Climate model projections for California demonstrate that impacts will vary throughout the state and show a tendency for the northern part of the state to become wetter and the southern part of the state to become drier (Pierce et al. 2018). California has experienced increasing temperatures, more frequent and severe drought conditions, declining snowpack, extreme precipitation events, and other climate-related changes that are consistent with observed and projected climate trends (Bedsworth et al. 2024). Climate model projections included in California's Fourth Climate Change Assessment demonstrate that seasonal summer dryness in California may be prolonged due to earlier spring soil drying and would last longer into the fall and winter rainy season. Increases in temperature are also predicted to result in changes to California's snowpack. Climate model projections indicate that rising temperatures are expected to substantially reduce Sierra Nevada snowpack over time, resulting in diminished snow water storage and altered runoff patterns throughout California (Bedsworth et al. 2024).

Climate model projections demonstrate that California will experience variation in precipitation patterns as well. With a shifting climate, California has been more susceptible to the adverse effects of atmospheric rivers, which are large-scale, high-precipitation events that deposit above-average levels of rainfall within a short duration. These events have the capacity to overwhelm existing stormwater systems leading to localized flooding.

Climate change is also projected to result in tertiary impacts on energy infrastructure throughout California. Changes in temperature, precipitation patterns, extreme weather events, and sea-level rise have the potential to affect and decrease the efficiency of thermal power plants and substations, decrease the capacity of transmission lines, disrupt electrical demand, and threaten energy infrastructure with the increased risk of flooding (CNRA 2018).

According to California's Fourth Climate Change Assessment, climate change will create impacts on the state's transportation network that will have 'ripple effects,' including direct and indirect impacts on inter-dependent infrastructure networks as well as negative impacts on the economy. Sea level rise, storm surge, and coastal erosion are imminent threats to highways, roads, bridge supports, airports, transit systems and rail lines near sea level and seaports. Shifting precipitation patterns, increased temperatures, wildfires, and increased frequency in extreme weather events also threaten transportation systems across the state. Temperature extremes and increased precipitation can increase the risk of road and railroad track failure, decrease transportation safety, and increase maintenance costs. Sea level rise, storm surge, increased precipitation intensity, and inland flooding are expected to place portions of California's transportation network at greater risk of disruption and damage (Bedsworth et al. 2024).

Water availability and changing temperatures affect the prevalence of pests, disease, and invasive species, which will directly impact crop development, forest health, and livestock production. Other environmental concerns include decline in water quality, groundwater security, and soil health. Vulnerabilities of water resources also include risks to degradation of watersheds, alteration of ecosystems and loss of habitat (Bedsworth et al. 2024).

California's Fourth Climate Change Assessment also identifies the impacts climate change will have on public health and social systems. Average temperature increases in California are estimated to have impacts on human mortality, with 6,700 to 11,300 additional annual deaths in 2050, depending on higher or lower emissions scenarios (Ostro et al. 2011). Climate change can also have indirect impacts on public health through increases in vector-borne diseases, stress and mental trauma due to extreme events, economic disruptions, and residential displacement (McMichael and Lindgren 2011, Gould and Dervin 2012).

Greenhouse Gas Emission Sources

GHGs include but are not limited to CO_2, CH_4, N_2O, fluorinated gases (HFCs, PFCs, SF_6, and nitrogen trifluoride [NF_3]), chlorofluorocarbons, and hydrochlorofluorocarbons. Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Of these, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as HFCs, PFCs, and SF_6, which are associated with certain industrial products and processes.

CO_2 enters the atmosphere through the burning of fossil fuels, solid waste, trees, and wood products and other chemical reactions, such as those that occur in cement manufacturing. Globally, the largest source of anthropogenic CO_2 emissions is the combustion of fossil fuels in power plants, automobiles, industrial facilities, and other similar sources. CH_4 is emitted from a variety of both natural and human-related sources, including fossil fuel production, animal husbandry, and waste management. N_2O is emitted during agricultural and industrial activities, combustion of fossil fuels and solid waste, and wastewater treatment (USEPA 2025). HFCs, PFCs, and SF_6 are synthetic, powerful GHGs emitted from a variety of industrial processes and the production of chlorodifluoromethane.

Construction and operation of composting projects would not include any processes that would emit PFCs or SF_6, and chlorodifluoromethane has been mostly phased out of use in the United States (USEPA 2025). However, refrigerant GHGs (e.g., HFCs, CFCs, HCFCs, etc., abbreviated to "R" in the model and calculations in Appendix B) associated with vehicle air conditioning systems, some of which are HFCs, were quantified where applicable as a part of the impact analysis. Other HFC emissions are not expected to occur and are not discussed further.

Individual GHGs have varying heat-trapping properties and atmospheric lifetimes. "Carbon dioxide equivalent" (CO_2e) is a consistent methodology for comparing GHG emissions because it normalizes various GHG emissions to a consistent measure based on their global warming potential. Each GHG is compared to CO_2 with respect to its ability to trap infrared radiation, its atmospheric lifetime, and its chemical structure. For example, the global warming potential for CH_4 is 28, which means that emissions of 1 metric ton of CH_4 has the same global warming potential as 28 metric tons CO_2e of CO_2.

Greenhouse Gas Emission Inventories

To evaluate the potential adverse impact of climate change, federal and state organizations compiled GHG inventories to estimate levels of and trends in GHG emissions and removals. The following summarizes these GHG inventories.

Federal

In 2022, total gross U.S. GHG emissions were 6,343.2 million metric tons (MMT) CO_2e. Total gross U.S. emissions decreased by 3.0% from 1990 to 2022, down from a high of 15.2% above 1990 levels in 2007. Gross emissions increased from 2021 to 2022 by 0.2% (14.4 $MMTCO_2e$). Net emissions (including sinks) were 5,489.0 $MMTCO_2e$ in 2022. Overall, net emissions increased by 1.3% from 2021 to 2022 and decreased by 16.7% from 2005 levels. Between 2021 and 2022, the increase in total GHG emissions was driven largely by an increase in CO_2 emissions from fossil fuel combustion across most end-use sectors due in part to increased energy use from the continued rebound of economic activity after the height of the COVID-19 pandemic. In 2022, CO_2 emissions from fossil fuel combustion increased by 1.0% compared to the previous year and were 1.1% below emissions in 1990. Carbon dioxide emissions from natural gas use increased by 5.2% (84.8 $MMTCO_2e$) from 2021, while CO_2 emissions from coal consumption decreased by 6.1% (58.6 $MMTCO_2e$) from 2021 to 2022. The increase in natural gas consumption and associated emissions in 2022 is observed across all sectors except U.S. Territories, while the coal decrease is due to reduced use in the electric power sector. Emissions from petroleum use also increased by 0.9% (19.0 $MMTCO_2e$) from 2021 to 2022. Carbon sequestration from the Land Use, Land Use Change, and Forestry (LULUCF) sector offset 14.5% of total emissions in 2022 (USEPA 2026).

California

In 2023, emissions from GHG emitting activities statewide were 360.4 $MMTCO_2e$. This is 11.2 $MMTCO_2e$ (3.0%) lower than in 2022 (371.6 $MMTCO_2e$). Emissions in 2023 were the lowest of any point between 2000 and 2023. The transportation sector showed the largest decrease in emissions of 6.5 $MMTCO_2e$ (4.6%), compared to 2022. On-road transportation emissions decreased 5.3 MMTCO2e (4.1%). The decrease in on-road transportation emissions was due in large part to reduced use of fossil distillate (27.4%) because of continued growth in renewable diesel. Industrial sector emissions decreased by 3.4 $MMTCO_2e$ (4.8%) compared to 2022. The decrease is driven primarily by lower emissions in the oil and gas production and processing sector, the liquid fuels refining and hydrogen production sector, and the cement sector. Electricity sector emissions decreased by 2.5 $MMTCO_2e$ (4.2%) compared to 2022. Total electricity generation decreased by 1.8 trillion watt hours (TWh) (0.6%) and the carbon intensity of generation decreased by 3.6%. Solar power generation increased by 4.5 TWh (6.9%), incentivized by California's clean energy policies. As a result, fossil fuel-powered electricity generation decreased by 5.0 TWh (3.9%) (CARB 2025c).

3.8.3 Environmental Impacts and Mitigation Measures

Methodology

Analysis of impacts related to GHG emissions requires modeling GHG emissions under a series of scenarios that reflect the different sizes and methods of composting that may be implemented as part of the program. Because this is a program-level EIR, GHG emissions were estimated for composting facilities and operations of different sizes and utilizing different operations systems.

Construction

Construction of new compost facilities and operations would generate GHG emissions from exhaust from off-road equipment, construction-related haul truck trips to and from sites of new compost facilities, and workers' commutes. As described in Section 3.3.3, construction GHG emissions were modeled using CalEEMod Version 2022.1.1.45 for (1) a small composting operation on a 5 acre site, and (2) a medium composting facility on an 11-acre site.

Attachment 1 of Appendix B provides additional detail on CalEEMod inputs, assumptions, and results. Maximum construction GHG emissions, including total and amortized annual emissions, are summarized in Table 3.8-1. Because construction emissions occur over a finite construction period (less than a year) while operational emissions occur annually, construction GHG emissions are typically amortized over the anticipated project operational life and added to annual GHG emissions for significance evaluation.

Table 3.8-1. Construction Greenhouse Gas Emissions Summary for Representative Facilities/Operations

Greenhouse Gas	Small Operation Emissions ($MTCO_2e$)	Medium Facility Emissions ($MTCO_2e$)
CO_2	256	271
CH_4	<1	<1
N_2O	<1	<1
R	<1	<1
Total CO_2e	257	272
Amortized CO_2e (30 Years)	9	9

Note: Construction-related GHG emissions were amortized over a 30-year operational life and added to annual operational GHG emissions, consistent with applicable air district guidance (SCAQMD 2008).
Source: CalEEMod Version 2022.1.1.45.

Operations

Operation of new compost facilities/operations would result in emissions of GHGs from electricity consumption, use of diesel-powered equipment to process feedstocks and products, increased vehicle travel to and from these facilities, and indirect emissions from water consumption (electricity required for pumping, treatment, and distribution). However, by diverting organic waste from landfills, composting facilities and operations would reduce fugitive methane emissions associated with the anaerobic decomposition of organic materials in landfills.

As mentioned in Section 3.3, "Air Quality," six scenarios were evaluated to determine operating GHG emissions, representing small and medium composting facilities and operations utilizing windrow, positive covered aerated static piles (CASP), and negative aerated static piles (ASP) systems. The scenarios and associated operating

assumptions are included in Appendix B. Simplified descriptions of the scenarios are listed in Section 3.3.3, Table 3.3-5 of this EIR.

GHG emissions are lower on a per-ton feedstock basis when composted when compared to landfilling (CARB 2017). CARB developed a lifecycle method to quantify the California-specific GHG emission reductions from using compost as well as the GHG emissions associated with compost management and landfill avoidance. By diverting organic waste from landfills to composting facilities and operations, methane emissions from landfills are avoided. Additionally, compost application to agricultural fields increases soil health while providing multiple co-benefits such as carbon sequestration, reducing the amount of synthetic fertilizer needed, decreasing soil erosion, and reducing the use of herbicides. Although not quantified in the CARB Compost Emission Reduction Factor (CERF) methodology, other composting application benefits include the energy saved through reduced water use, increased crop yield, and healthier soils due to increased microbial activity.

The management of compost material also results in GHG emissions. These emissions occur during the hauling of the feedstock from waste generators to a composter and delivery of the finished compost to end users, the use of energy and water to manage the compost piles, and as microorganisms convert the initial feedstock to compost. CARB's lifecycle methodology assesses the following factors to derive the CERF in units of $MTCO_2e$/ton of feedstock:

- Emission reductions associated with the avoidance of methane emissions at landfills.
- Emission reductions associated with decreased soil erosion.
- Reduced fertilizer use.
- Reduced herbicide use.
- Emissions due to the composting process.

CERFs were generated using this lifecycle approach for the two types of organic compostable waste proposed by projects under this program: green waste and mixed organics (a combination of food waste and green waste). The resulting CERF values are 0.44 $MTCO_2e$/ton of feedstock for green waste, and 0.56 $MTCO_2e$/ton of feedstock for mixed organics. Using CARB's lifecycle approach avoids the need to characterize GHG emissions from each individual activity (e.g., engines, composting, landfilling). GHG emission reductions resulting from composting green material and food material in composting facilities/operations under the proposed program are summarized in Table 3.8-2.

Table 3.8-2. Summary Greenhouse Gas Emissions for Composting Relative to Landfill Disposal

Parameter	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Feedstock	Green Waste	Green Waste	Green Waste	Green Waste + Food Waste	Green Waste + Food Waste	Green Waste + Food Waste
GHG Emissions Relative to Landfill Disposal ($MTCO_2e$/Ton Feedstock)[1]	-0.44	-0.44	-0.44	-0.56	-0.56	-0.56
Throughput (TPY, wet weight)	10,000	10,000	10,000	25,000	25,000	25,000

Parameter	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Net Emission Change[1] ($MTCO_2e$/Year)	-4,400	-4,400	-4,400	-14,000	-14,000	-14,000

Note: A negative value indicates an emission reduction.

Issues Not Discussed Further

No issues related to GHG emissions and climate change are dismissed from further analysis.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the program would result in a potentially significant impact related to GHG emissions and climate change if it would:

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

The quantity of GHGs in the atmosphere responsible for climate change is not precisely known, but it is substantial. No single project alone would measurably contribute to an incremental change in the global average temperature or to global or local climates or microclimates. Multi-agency consensus and guidance documents have established that GHG impacts relative to global climate change are exclusively and inherently cumulative from the standpoint of CEQA. For example:

- In its 2008 white paper (CEQA and Climate Change), CAPCOA explicitly stated: "GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective."
- When adopting the landmark CEQA Guidelines amendments for GHG pursuant to Senate Bill 97 (effective March 18, 2010), the California Natural Resources Agency and the Governor's Office of Land Use & Climate Innovation (formally known as Governor's Office of Planning and Research) relied on the principle that a single project's emissions cannot change global temperatures independently, meaning analysis must focus on whether a project makes a "cumulatively considerable" contribution to a global cumulative effect.
- The Bay Area Air District and South Coast Air Quality Management District (SCAQMD) routinely treat climate change in their CEQA significance threshold reports as an inherently cumulative condition, noting that an individual project's operational and amortized construction emissions must be evaluated against aggregate statewide reduction targets rather than as isolated local events.

GHG emissions would be evaluated against the thresholds shown in Table 3.8-3.

Table 3.8-3. GHG Significance Thresholds

Air District	Significance Threshold
Bay Area Air District	• Consistent with applicable statewide GHG reduction plans, regulations, and targets • Implement project's "fair share" of GHG reductions necessary to achieve statewide climate goals

Air District	Significance Threshold
San Joaquin Valley Air Pollution Control District	• Implement Best Performance Standards (BPS) • Reduce Project GHG Emission by 29% over Business as Usual
South Coast Air Quality Management District	• 10,000 MT/yr CO_2e for industrial facilities
San Diego County Air Pollution Control District	• Climate Action Plan consistency

Source: SCAQMD 2008; San Joaquin Valley Air Pollution Control District 2009a, b; San Diego County 2018; Bay Area Air District 2022.

Environmental Impacts and Mitigation Measures

Impact 3.8-1: Conflict with Applicable Plans, Policies, or Regulations of an Agency Adopted for the Purpose of Reducing Emissions of GHGs

The development of small and medium composting facilities and operations would be consistent with applicable plans, policies, and regulations aimed at reducing GHG emissions, including the 2022 Scoping Plan, SLCP Reduction Strategy, and the State's natural and working lands policies and initiatives that support carbon sequestration and achievement of the State's long-term climate goals. The operation of small and medium composting facilities and operations would reduce fugitive methane emissions from landfills through the diversion of organics to composting facilities/operations. Additionally, finished compost would be applied within the agricultural sector, resulting in improved soil health and expanded carbon sequestration. This impact would be **less than significant**.

Discussion

Regulations, plans, and policies aimed at reducing GHG emissions from landfills and the disposal of organic materials include the 2022 Scoping Plan and the SLCP Reduction Strategy. As described in Section 3.8.2, "Regulatory Setting," the 2022 Scoping Plan lays out the framework for achieving compliance with statewide GHG targets mandated by SB 32 (i.e., 40% reductions from 1990 levels by 2030) and AB 1279 (i.e., carbon neutrality and an 85% reduction below 1990 levels by 2045). The construction and operation of new compost facilities and operations are consistent with actions identified in the 2022 Scoping Plan, which acknowledges that the state must decrease landfill emissions of methane—an SLCP— to meet its long-term GHG reduction goals. The program is also considered a component of the SLCP Reduction Strategy, which CARB indicates will provide significant reductions with a focus on methane and hydrofluorocarbon gases (CARB 2017).

The development and operation of new small and medium composting facilities and operations would facilitate methane reductions through the diversion of organic waste to new composting facilities/operations; thus, it would be consistent with the goals of the SLCP Reduction Strategy. The program would also support the goals of the 2022 Scoping Plan by increasing the diversion of organic waste from landfills and promoting the beneficial use of compost, which can enhance soil health and increase carbon sequestration in California's natural and working lands. The 2022 Scoping Plan recognizes that carbon sequestration in natural and working lands are important components of achieving the State's long-term GHG reduction and carbon neutrality goals.

The primary objective of the program and SB 1046 is to facilitate the construction and operation of new small and medium composting facilities and operations to provide management options for organic waste that is diverted from landfills and to assist the State in achieving SB 1383 waste reduction goals. This objective supports the State's GHG emissions goals established by AB 32 and SB 32 through waste disposal reduction and edible

food recovery goals set forth by SB 1383. The program, as defined in this EIR, would facilitate reductions in fugitive methane emissions from landfills, as well as reductions in petroleum-fuel used for the production of synthetic fertilizers. It is also reasonable to infer that the program would enhance the state's capacity to sequester carbon. For these reasons, the program would be consistent with applicable plans, policies, and regulations pertaining to GHG emissions reductions. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.8-2: Short-term Construction-Related and Long-Term Operation-Related GHG Emissions

The development and operation of small and medium composting facilities and operations could result in GHG emissions from construction activities and could result in increases in statewide and regional VMT associated with the collection of organic waste from organic waste generators, the shipment of organic waste to a composting facility/operation, and the distribution of finished compost to end users. Although there is potential for an increase in operation- and transportation-related GHG emissions associated with changes in VMT, including travel required for delivery of finished compost, the GHG reductions achieved through implementation of the program would be substantially greater than construction and operational GHG emissions, so a net reduction in overall GHG emissions is expected. This impact would be **less than significant**.

Discussion

The development of new small and medium composting facilities and operations to process organic waste diverted from landfills would result in GHG emissions associated with fuel combustion in off-road construction equipment, materials transport, and worker commute trips for the duration of the construction phase. However, construction-related GHG emissions would be short term and limited in amount.

The method of estimating and evaluating a project's contribution to global climate change during construction periods varies throughout the State's 35 air districts. For example, the SCAQMD recommends that construction emissions be quantified and amortized over 30 years (the average lifespan of a project) and added to estimated operational emissions. SCAQMD developed this approach as a mechanism for projects to implement operational mitigation measures that could additionally minimize construction emissions (SCAQMD 2008). Conversely, many air districts do not have guidance or recommendation on estimating or mitigating construction emissions.

As noted earlier, GHG impacts are considered to be exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective. Construction of a small or medium composting facility/operation would occur to support the processing of organic waste; construction would not occur as a stand-alone activity. Thus, each small or medium composting facility/operation involves both construction of the facility and operation of the facility. For this reason, it is appropriate to add construction emissions to operating emissions when evaluating significance. As shown in Table 3.8-1, construction emissions, amortized over the 30-year project life represent a very small increase in GHG emissions compared to the large annual GHG emission reductions realized by operating the facilities (Table 3.8-2).

During operation, GHGs are emitted from mobile sources, such as on-road vehicles and off-road equipment, burning fuels, such as gasoline, diesel, biodiesel, propane, or natural gas. Indirect GHG emissions result from electric power generated elsewhere (i.e., power plants) used to operate process equipment, lighting, and utilities at a facility. Also included in a GHG emission inventory would be GHGs from electric power used to pump the water supply (e.g., aqueducts, wells, and pipelines). Operational GHG emissions may occur due to the

fuel combustion in off-road equipment (e.g., front-end loaders and forklifts) used to manage waste on-site, fuel combustion in haul trucks used to deliver organic feedstock to the facility and deliver finished compost to the end user, and fuel used in worker commute vehicles.

However, diversion of organic waste from landfills to composting facilities and operations (including under the program) would result in an overall net decrease in GHG emissions. Organic waste decomposes in landfills to form CH_4, a potent GHG. Although most landfills have landfill gas collection systems which collect and combust CH_4, a portion of the CH_4 (typically 25% of the CH_4 produced) is emitted from landfills as fugitive emissions. By diverting organic waste from landfills to composting facilities and operations, those fugitive CH_4 emissions are avoided. Additionally, compost application to agricultural fields increases soil health while providing multiple co-benefits such as carbon sequestration, decreasing soil erosion, and reducing the use of herbicides. The net GHG emission reductions are summarized in Table 3.8-2.

Operations of the proposed composting facilities and operations would also displace some amount of petroleum-based fertilizers as compost materials become increasingly available. Over the past decade, the average annual amount of petroleum-derived nitrogen fertilizer purchased for use in California was approximately 600,000 tons. The application of these fertilizers is a notable contributor to global emissions of nitrogen dioxide (NO_2), which has a global warming potential of 265 over a 100-year time horizon. Moreover, the production of nitrogen-rich fertilizers requires the combustion of natural gas. To produce, transport, and apply one ton of nitrogen fertilizer requires an amount of energy equal to almost 2 tons of gasoline. Compost materials generated under the proposed program would reduce overall reliance on petroleum-based fertilizers.

While the development of new small and medium composting facilities and operations may result in increases in GHG emissions from construction activities, increased VMT of waste and compost haul trucks, fuel used in equipment used onsite to manage compost, and energy produced to supply water and electricity to each facility/operation, the further development of small and medium composting facilities and operations would facilitate GHG emission reductions through landfill diversion, provide an alternative to petroleum-based fertilizers, and sequester carbon in the soil. Because there would be a net reduction in GHGs resulting from the program compared to baseline, business-as-usual landfill disposal practices for the organic waste, impacts would be **less than significant**.

Mitigation Measures

No mitigation is required.

3.9 Hazards and Hazardous Materials

This section describes the potential impacts of the program related to hazards and hazardous materials. Hazards evaluated include those associated with identified existing or suspected sites of contamination and potential exposure to hazardous materials used, stored, or transported during composting operations. This analysis also reflects preliminary research regarding potential hazards as determined through a statewide risk assessment (Appendix D) prepared by CalRecycle for small and medium composting facilities and operations. Potential risks associated with toxic air contaminant emissions are discussed in Section 3.3, "Air Quality." Impacts associated with exposing people or structures, either directly or indirectly, to risks associated with wildland fires are evaluated in Section 3.16, "Wildfire."

One comment regarding hazards and hazardous waste was received in response to the Notice of Preparation and requested identification of acceptable feedstocks, load-checking requirements, and minimum fire-prevention measures.

3.9.1 Regulatory Setting

Federal

Management of Hazardous Materials

Various federal laws address the proper handling, use, storage, and disposal of hazardous materials, as well as requiring measures to prevent or mitigate injury to health or the environment if such materials are accidentally released. The U.S. Environmental Protection Agency (EPA) is the agency primarily responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. Applicable federal regulations pertaining to hazardous materials are primarily contained in Code of Federal Regulations (CFR) Titles 29, 40, and 49. Hazardous materials, as defined in the Code, are listed in 49 CFR 172.101. Management of hazardous materials is governed by the following laws:

- The Toxic Substances Control Act of 1976 (15 US Code [USC] Section 2601 et seq.) regulates the manufacturing, inventory, and disposition of industrial chemicals, including hazardous materials. Section 403 of the Toxic Substances Control Act establishes standards for lead-based paint hazards in paint, dust, and soil.
- The Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.) is the law under which EPA regulates hazardous waste from the time the waste is generated until its final disposal ("cradle to grave").
- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (also called the Superfund Act or CERCLA) (42 USC 9601 et seq.) gives EPA authority to seek out parties responsible for releases of hazardous substances and ensure their cooperation in site remediation.
- The Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499; USC Title 42, Chapter 116), also known as SARA Title III or the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA), imposes hazardous materials planning requirements to help protect local communities in the event of accidental release.
- The Spill Prevention, Control, and Countermeasure (SPCC) rule includes requirements for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters and adjoining

shorelines. The rule requires specific facilities to prepare, amend, and implement SPCC plans. The SPCC rule is part of the Oil Pollution Prevention regulation, which also includes the Facility Response Plan rule.

Transport of Hazardous Materials

The U.S. Department of Transportation (DOT) regulates transport of hazardous materials between states and is responsible for protecting the public from dangers associated with such transport. The federal hazardous materials transportation law, 49 USC 5101 et seq. (formerly the Hazardous Materials Transportation Act 49 USC 1801 et seq.) is the basic statute regulating transport of hazardous materials in the United States. Hazardous materials transport regulations are enforced by the Federal Highway Administration, the U.S. Coast Guard, the Federal Railroad Administration, and the Federal Aviation Administration.

Worker Safety

The federal Occupational Safety and Health Administration (OSHA) is the agency responsible for assuring worker safety in the handling and use of chemicals identified in the Occupational Safety and Health Act of 1970 (Public Law 91-596; 29 USC 651 et seq.). OSHA has adopted numerous regulations pertaining to worker safety, contained in CFR Title 29. These regulations set standards for safe workplaces and work practices, including standards relating to the handling of hazardous materials and those required for excavation and trenching.

Solid Waste Facilities near Airports

CFR Title 40, Part 258, Subpart 10 provides criteria for the location of existing, new, and laterally expanding municipal solid waste landfills within 10,000 feet of a public-use runway end that services jet aircraft and 5,000 feet of a public-use runway end that services piston aircraft. Municipal solid waste landfill facilities (MSWLFs) within these separation distances must show that they do not create a wildlife attractant that creates a hazard to aircraft. This section also requires proponents of new MSWLFs or proposed lateral expansion of existing facilities within a 5-mile radius of a public-use airport to notify the airport and the Federal Aviation Administration (FAA).

Federal statutes (49 USC Section 44718[d]) prohibit new “municipal solid waste landfills” within 6 miles of airports that (1) receive FAA grants, and (2) primarily serve general aviation aircraft and scheduled air carrier operations using aircraft with less than 60 passenger seats. A landfill can only be built within 6 miles of this class of airports if the FAA concludes that it would have no adverse effect on aviation safety.

FAA Advisory Circular No. 150/5200-33B (FAA 2007) provides guidance regarding hazardous wildlife attractants near airports. Separation distances depend on the type of airport (serving piston vs. turbine powered aircraft) and the proposed land use.

Guidance applies to composting facilities and operations, transfer stations, other municipal solid waste facilities and associated stormwater detention facilities. Exceptions to separation criteria for waste facilities include off-airport property-based composting facilities and operations and fully enclosed transfer stations. Off-airport property composting facilities/operations that do not accept food material or other municipal solid waste (green material only) are permissible at distances no closer than 1,200 feet from the airport operations area. Transfer stations are compatible with safe airport operations provided these facilities (1) are not located on airport property or in the runway protection zone, and (2) meet the FAA’s definition of a fully enclosed trash transfer station. Facilities not meeting these requirements are subject to greater separation distances.

State

Management of Hazardous Materials

In California, both federal and state community right-to-know laws are coordinated through the Governor's Office of Emergency Services. The federal law, SARA Title III or EPCRA, described in the previous section, encourages and supports emergency planning efforts at the state and local levels and to provide local governments and the public with information about potential chemical hazards in their communities. Because of the community right-to-know laws, information is collected from facilities that handle (e.g., produce, use, store) hazardous materials above certain quantities. The provisions of EPCRA apply to four major categories:

- Emergency planning
- Emergency release notification
- Reporting of hazardous chemical storage
- Inventory of toxic chemical releases

The corresponding state law is Chapter 6.95 of the California Health and Safety Code (Hazardous Materials Release Response Plans and Inventory). Under this law, qualifying businesses are required to prepare a Hazardous Materials Business Plan, which would include hazardous materials and hazardous waste management procedures and emergency response procedures, including emergency spill cleanup supplies and equipment. At such time as the applicant begins to use hazardous materials at levels that reach applicable state and/or federal thresholds, the plan is submitted to the administering agency.

The Department of Toxic Substances Control (DTSC), a division of the California Environmental Protection Agency, has primary regulatory responsibility over hazardous materials in California, working in conjunction with EPA to enforce and implement hazardous materials laws and regulations. As required by Section 65962.5 of the California Government Code, DTSC maintains a hazardous waste and substances site list for the state, known as the Cortese List. Individual regional water quality control boards (RWQCBs) are the lead agencies responsible for identifying, monitoring, and cleaning up leaking underground storage tanks.

Transport of Hazardous Materials and Hazardous Materials Emergency Response Plan

The State of California has adopted DOT regulations for the movement of hazardous materials originating within the state and passing through the state; state regulations are contained in 26 California Code of Regulations (CCR). State agencies with primary responsibility for enforcing state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation. Together, these agencies determine container types used and license hazardous waste haulers to transport hazardous waste on public roads.

California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local governments and private agencies. Response to hazardous materials incidents is one part of the plan. The plan requires unified program agencies to establish area plans for emergency response to a release of hazardous materials and the immediate reporting of a release or threatened release of hazardous materials. Considerations and recommendations for response training, public outreach programs, and coordination with State agencies are outlined in the plan. The plan is managed by the Governor's Office of Emergency Services, which coordinates the responses of other agencies in the project area.

Management of Construction Activities

Through the Porter-Cologne Water Quality Control Act and the National Pollutant Discharge Elimination System (NPDES) program, RWQCBs have the authority to require proper management of hazardous materials during project construction. For a detailed description of the Porter-Cologne Water Quality Act, the NPDES program, and the role of the RWQCB, see Section 3.10, "Hydrology and Water Quality."

The State Water Resources Control Board (SWRCB) adopted the statewide NPDES General Permit (2009-0009 DWQ) in August 1999. The state requires that projects disturbing more than 1 acre of land during construction file a Notice of Intent with the RWQCB to be covered under this permit. Construction activities subject to the General Permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. A stormwater pollution prevention plan (SWPPP) must be developed and implemented for each site covered by the permit. A SWPPP must include best management practices (BMPs) designed to prevent construction pollutants from contacting stormwater and keep products of erosion from moving off site into receiving waters throughout the construction and life of the project; the BMPs must address source control and, if necessary, pollutant control.

General Waste Discharge Requirements for Commercial Composting Operations

The SWRCB developed the General Waste Discharge Requirements for Composting Operations (Composting General Order) to support the diversion of organic material from landfills to composting facilities/operations while providing requirements to protect water quality. SWRCB certified the associated EIR and adopted the Composting General Order on August 4, 2015 (Resolution No. 2015-0054, Order WQ 2015-0121-DWQ). Approximately five years later, the SWRCB adopted a revision to the Composting General Order to include manure as agricultural feedstock, and a supplemental EIR was certified on April 7, 2020 (Resolution No. 2020-0007). Revisions were incorporated into General Waste Discharge Requirements for Commercial Composting Operations (Order WQ 2020-0012-DWQ). Order WQ 2020-0012-DWQ amends Order WQ 2015-0121-DWQ (SWRCB 2020). CCR Title 27 established a waste classification system. Allowable compostable materials per the Composting General Order meet the definition of a nonhazardous solid waste under CCR Title 27, Section 20220. CCR Title 27 regulations include requirements for containing nonhazardous waste that is disposed of in facilities such as landfills. Because composting facilities and operations do not operate like disposal facilities, CCR Title 27 regulations for landfills do not apply to compost operations enrolled under the Composting General Order so long as the discharger continues to meet the requirements of the Composting General Order (SWRCB: 20-21).

The Composting General Order focuses on the protection of groundwater and surface water and imposes specific requirements on composting operations (taking into consideration the types of feedstocks used, the volume of materials on-site at one time, and hydrogeologic site conditions). The Composting General Order creates two tiers of facilities based on those conditions. The Composting General Order requires biosolids that are used as a feedstock for composting to comply with ceiling concentration limits for metals, pollutants, and pathogens established in 40 CFR Part 503. Additional requirements of the General Composting Order include:

- Design of facilities and operations to manage a 25-year, 24-hour peak storm event at a minimum to prevent or limit sediment laden stormwater run-on and/or run-off.
- Grade working surfaces to facilitate drainage and minimize ponding by sloping or crowning composting pads to reduce infiltration.

- For Tier one composting activities, meet the soil percolation rate and minimum depth to groundwater criteria.
- For Tier two composting activities, surfaces and drainage ditches to be constructed of compacted fine-grained soil (like clay), asphaltic-concrete, or equivalent.
- Requires routine inspection and monitoring of all facility and operation drainage systems and engineered working surfaces.

These General Composting Order requirements require adequate facility drainage and the construction of suitable working surfaces to eliminate the uncontrolled release of potentially hazardous materials from composting operations.

Management of Solid Waste and Compostable Materials

Regulations regarding solid waste facilities and compostable materials handling, operations, and regulatory requirements are established in CCR Title 14. These regulations are overseen by the California Department of Resources Recycling and Recovery (CalRecycle) and its designated Local Enforcement Agencies (LEAs). These regulations include, but are not limited to, the following for compost facility operations:

- Establishes permitting and inspection requirements;
- Prohibits acceptance of hazardous wastes, liquids and sludges;
- Outlines general operating standards;
- Establishes concentration limits of physical contaminants, including microplastics, in compostable materials and outlines minimum verification sampling requirements;
- Provides for removal of contaminants from compost and feedstock;
- Requires materials handling in a manner that minimizes vectors and prevents unauthorized access by individuals and animals;
- Outlines pathogen reduction procedures and sampling requirements; and
- Establishes recordkeeping and facility closure requirements.

The following specific regulations provide LEAs the means to address issues regarding vectors, odor, pathogens, physical contaminants, and other nuisances that could be associated with composting facilities and operations:

- Minimize vectors, odor impacts, litter, hazards, nuisances, and noise impacts and minimize human contact with, inhalation, ingestion, and transportation of dust, particulates, and pathogenic organisms (Composting Operating Standards under Title 14 of the CCR Section 17867).
- Design the operation or facility to restrict the unloading area to a small area to provide adequate control of windblown material, minimize the propagation or attraction of flies, rodents or other vectors, and the creation of nuisances from the solid wastes being handled (14 CCR Sections 17406.2–17).
- Compost operations shall comply with maximum acceptable pathogen concentrations and operating requirements that limit pathogen generation. Compost that contains any pathogens in amounts that exceed these pathogen reduction requirements shall be designated for additional processing, disposal, or other use as approved by local, State or federal agencies having appropriate jurisdiction (14 CCR Section 17868.3).

- Compost operations shall comply with maximum acceptable physical contaminant concentrations, including microplastics. Compost shall not contain more than 0.5% by dry weight of physical contaminants greater than 4 millimeters, and no more than 20% of this 0.5% shall be plastics greater than 4 millimeters (14 CCR Sections 47862.1, 17868.3.1, and 17896.61).

LEAs perform routine inspections to certify compliance with permit conditions to ensure that State programs are effectively implemented. CalRecycle can also initiate enforcement actions in addition to, or in lieu of, the LEA.

Worker Safety

The California Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within the state. Cal/OSHA standards are typically more stringent than federal OSHA regulations and are presented in Title 8 of the CCR. Cal/OSHA conducts on-site evaluations and issues notices of violation to enforce necessary improvements to health and safety practices.

Title 8 of the CCR also includes regulations that provide for worker safety when blasting and explosives are utilized during construction activities. These regulations identify licensing, safety, storage, and transportation requirements related to the use of explosives in construction.

Certified Unified Program Agency Program

In the 1990s, the regulation of hazardous materials and local emergency response was spread across more than 1,000 local and state agencies in California alone. The Certified Unified Program Agency (CUPA) Program was created by Senate Bill 1082 in 1993 to consolidate, coordinate, and make consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency management programs (CalCUPA Forum 2023). The CUPA Program is intended to provide relief to businesses complying with the overlapping and sometimes conflicting requirements of formerly independently managed programs. Cities and counties can apply to become a CUPA and receive delegated authority from state agencies to enforce laws in their jurisdiction.

Local

Given its statewide extent and the possible number of local and regional responsible agencies, this EIR does not identify individual, potentially applicable local government plans, policies, and ordinances. Types of local regulations relevant to hazards and hazardous materials issues may include general plan policies and ordinances, local hazard mitigation plans, community wildfire protection plans, emergency response/operations plans, and emergency evacuation plans. This EIR assumes that the reasonably foreseeable condition associated with implementation of the program would be consistent with local plans, policies, and ordinances to the extent development of compost facilities under the program are subject to the anticipated organic waste recovery infrastructure projects, because local land use and permit approvals are typically conditioned upon such consistency.

3.9.2 Environmental Setting

Definition of Terms

For purposes of this section, the term “hazardous materials” refers to both hazardous substances and hazardous wastes. A “hazardous material” is defined in the CFR as “a substance or material that…is capable of posing an

unreasonable risk to health, safety, and property when transported in commerce" (49 CFR 171.8). California Health and Safety Code Section 25501 defines a hazardous material as follows:

> *"Hazardous material" means any material that, because of its quantity, concentration, or physical, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.*

"Hazardous wastes" are defined in California Health and Safety Code Section 25141(b) as wastes that:

> *because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause, or significantly contribute to an increase in mortality or an increase in serious illness [or] pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.*

Potential Existing Hazards and Contamination

Hazardous materials, if present in soils, can be disturbed and dispersed by ground- disturbing activities, particularly those using heavy equipment. Soil contamination generally occurs in areas that are or have been previously developed, especially with industrial-type uses. Soil contamination can also occur in areas where pesticides have been historically applied, as well as in areas that have historically been mined or used for defense activities (e.g., an air force base). Contamination can also be associated with leaking utilities (e.g., leaking petroleum or gas pipelines, or leaking transformers on utility poles), or accidental spills. Lists of hazardous waste facilities are compiled by State agencies as required by Government Code Section 65962.5(a) (i.e., Cortese List) that are made available through such resources as the DTSC EnviroStor database and the SWRCB GeoTracker database. Many hazardous waste sites in varying stages of assessment and remediation are located throughout the state.

Most composting facilities and operations are often co-located at or near facilities, such as landfills, wastewater treatment plants, dairies (for manure composting only), or other waste management sites or in areas zoned for industrial or solid waste handling facilities. Food recovery facilities and community-scale composting facilities and operations would more likely be located in urban areas. The locations of these facilities and operations may contain limited remnant contamination from previous defense, agricultural, or pesticide use; contamination from nearby urban areas; or may have been exposed to leaks from pipelines, transformers, or utility poles.

Composting Facility and Operations Hazards

A variety of common hazardous materials are associated with maintenance and use of mechanical equipment and vehicles associated with composting activities. Operations of existing compost facilities/operations, such as windrow composting, include the use and maintenance of vehicles and mechanical equipment, such as compost windrow turners, dump trucks, and front loaders. Aerated static piles can be placed over a network of pipes that deliver air into or draw air out of the pile. These blowers can be activated by a timer or a temperature sensor and connected to mechanical equipment to operate. Chip and grind operations use chippers and grinders that

may be stationary or mobile. Equipment and vehicles associated with food recovery programs include refrigerated vehicles, refrigerators, forklifts, and golf carts. This equipment may use hazardous materials such as household cleaning products, fuels, oils, lubricants, solvents, and detergents for equipment and vehicle use and maintenance.

Additionally, microplastics are an emerging issue regarding physical contaminants in compostable material and can be introduced from a variety of sources including the acceptance of plastic-coated paper products as feedstock (Brinton et al. 2018: 2-3). California currently includes limitations on the composition of finished compost through implementation of 14 CCR Sections 47862.1, 17868.3.1, which requires that finished compost shall not contain more than 0.5% by dry weight of physical contaminants greater than 4 millimeters, and no more than 20% by dry weight of this 0.5% shall be film plastic greater than millimeters (). Microplastics were recently (as of June 2026) added by DTSC to the State's Candidate Chemicals List; and, as of June 2020, the California State Water Resources Control Board adopted the definition of microplastics in drinking water (per SB 1422), which states:

> solid polymeric materials to which chemical additives or other substances may have been added, which are particles which have at least three dimensions that are greater than 1 nm and less than 5,000 micrometers (µm). Polymers that are derived in nature that have not been chemically modified (other than by hydrolysis) are excluded.

With the adoption of the definition of Microplastics (first of its kind within the nation) and potential listing on the Candidate Chemicals List, associated impacts will continue to be evaluated as to whether future regulatory actions/restrictions are needed.

Asbestos

Asbestos, a naturally occurring fibrous material, was used as a fireproofing and insulating agent in building construction before such uses were largely banned by EPA in the 1970s. Because it was widely used prior to the discovery of its health effects, asbestos is found in a variety of building materials, including sprayed-on acoustic ceiling texture, floor tiles, and pipe insulation. Asbestos exposure is a human respiratory hazard when it becomes friable (easily crumbled) because inhalation of airborne fibers is the primary mode of asbestos entry into the body. Asbestos-related health problems include lung cancer and asbestosis. Asbestos-containing building materials are considered hazardous by Cal-OSHA when bulk samples contain more than 0.1 percent asbestos by weight. These materials must be handled by a qualified contractor.

Naturally occurring asbestos was identified as a toxic air contaminant (TAC) in 1986 by the California Air Resources Board. Naturally occurring asbestos is located in many parts of California and is commonly associated with ultramafic rocks and serpentinite, according to a special publication published by the California Geological Survey (Churchill and Hill 2000:2-3).

Ultramafic rocks form in high-temperature environments well below the surface of the earth. By the time they are exposed at the surface by geologic uplift and erosion, ultramafic rocks may be partially to completely altered into a type of metamorphic rock called serpentinite. Sometimes the metamorphic conditions are right for the formation of chrysotile asbestos or tremolite-actinolite asbestos in the bodies of these rocks, along their boundaries, or in the soil. Except for a few counties in the southeast portion of the state, most counties in California contain some amount of ultramafic rock.

Asbestos could be released from serpentinite or ultramafic rock if the rock is broken or crushed. Asbestos could also be released into the air due to vehicular traffic on unpaved roads on which asbestos-bearing rock has been used as gravel. Additionally, soil derived from asbestos-bearing rock could contain asbestos entrained into the air from new recreational uses added to route surfaces with exposed asbestos. At the point of release, asbestos fibers can become airborne, causing air quality and human health hazards. Natural weathering and erosion processes act on asbestos bearing rock and soil, increasing the likelihood for asbestos fibers to become airborne if disturbed (CGS 2002:24). The California Geological Survey has published guidance for geologists involved in conducting or reviewing naturally occurring asbestos investigations. These guidelines describe general procedures for use by geologists to determine the presence, type, distribution, and amount of asbestos minerals at the site.

3.9.3 Environmental Impacts and Mitigation Measures

Methodology

The analysis of impacts related to hazardous materials and public health and safety focuses on the potential for the creation of significant hazards to the public or environment through the routine use of hazardous materials or reasonably foreseeable upset and accident conditions involving hazardous materials, emissions of hazardous materials from composting activities potentially located on a hazardous materials site, or generate vectors and pathogens that could pose a significant health hazard. In determining the thresholds of significance, the analysis assumes that the site-specific facilities would comply with relevant federal, State, and local laws, regulations, and ordinances.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the program would result in a potentially significant impact on hazards and hazardous materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school.
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.
- For a site located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the program area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Issues Not Discussed Further

No issues related to hazards or hazardous materials are dismissed from further analysis.

Environmental Impacts and Mitigation Measures

Impact 3.9-1: Significant Health Hazards from the Use of Hazardous Materials

Construction and operation of new composting facilities and operations implemented under the program could involve the routine transport, use, and disposal of hazardous materials; operation of equipment or vehicles that could pose safety risks to workers; and reasonably foreseeable upset and/or accident conditions that could result in the release of hazardous materials into the environment and cause a hazard to workers, the public, or the environment. However, the transportation, use, and disposal of hazardous materials and the use of machinery and vehicles that may pose a risk to workers are heavily regulated by numerous federal and State laws and regulations. Because composting facilities/operations under the program would comply with these federal and State laws and regulations, this impact would be **less than significant**.

Discussion

Implementation of the program would result in the construction and operation of new composting facilities and operations. Construction and operation, including routine maintenance, of composting facilities and operations and associated mechanical equipment and vehicles would require the routine use, storage, and transport of hazardous materials. The construction activities associated with implementation of the program could involve vegetation removal, grading, excavation, paving, temporary stockpiling of soils, on-site staging of construction equipment and vehicles, and construction-related vehicle trips. These activities would require the use of potentially hazardous materials, such as fuels, oils, paints, and solvents. Additionally, as described under "Asbestos," in Section 3.9.2, portions of the state are identified as areas likely to contain naturally occurring asbestos. Ground disturbance activities associated with construction activities could cause naturally occurring asbestos to be released into the air, resulting in health risks.

Operational activities, including vehicle use, operation of mechanical equipment, and vehicle and equipment maintenance, could involve the use of limited amounts of hazardous materials, including cleaning products, fuel, oil, lubricants, and solvents. The types and quantities of hazardous materials would vary at each proposed facility. The improper use, storage, handling, transport, or disposal of hazardous materials during construction and operation could result in accidental release of hazardous materials, thereby exposing construction workers, the public, and the environment, including the soil, groundwater, and surface water, to hazardous materials contamination.

The use of some types of equipment associated with composting facilities and operations may expose workers to injuries if the equipment is used improperly or an accident occurs. Worker safety hazards are associated with operating equipment, including tractors, tub grinders, wood chippers, front loaders, and backhoes.

Hazardous materials would be contained within vessels engineered for safe storage. Paint could be used on new buildings. Spills during on-site fueling of equipment (i.e., puncture of a fuel tank through operator error or slope instability) could result in a release of hazardous materials into the environment. Storage of large quantities of these materials during construction is not anticipated. However, accidental release of these materials could result in an adverse effect.

As discussed in Section 3.9.2, "Regulatory Setting," numerous federal and State laws and regulations govern the transport, use, storage, handling, and disposal of hazardous materials to minimize the potential physical and chemical hazards to workers, the public, and the environment associated with construction and operational activities.

As described in Section 3.10, "Hydrology and Water Quality," the federal Clean Water Act prohibits discharges of stormwater from construction projects unless the discharge is in compliance with an NPDES permit. Construction of composting facilities and operations would result in soil surface disturbance greater than 1 acre, and specific erosion control measures would be identified as part of the NPDES permit and SWPPP required for construction. These types of construction projects would implement erosion control measures that use construction water quality BMPs identified in the SWPPP to avoid or minimize soil erosion and off-site sediment or hazardous materials transport. Descriptions of typical BMPs that may be incorporated into a SWPPP for a project are provided in the discussion of Impact 3.10-1 in Section 3.10, "Hydrology and Water Quality." The SWPPP (and associated BMPs) would be prepared and implemented before construction begins, and BMP effectiveness would be ensured through the sampling, monitoring, reporting, and record-keeping requirements contained in the construction general permit. Additionally, a hazardous materials spill response plan is a required component of the SWPPP and would further limit the potential of directly and indirectly affecting water quality in the event of an accidental spills. Implementation of these measures would minimize potential hazards to workers, the public, and the environment from the routine transport, use, or disposal of hazardous materials or from reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Construction activities would also be required to comply with the California Fire Code to reduce the risk of potential fire hazards. An overview of the California Fire Code is included in Section 3.16.1 of Section 3.16, "Wildfire." The local fire agency would be responsible for enforcing the provisions of the fire code.

Cal/OSHA is responsible for developing and enforcing workplace safety standards, including the handling and use of hazardous materials. Workers must be trained to understand the dangers and appropriate work procedures associated with confined spaces, flammable gases, and other potential hazards. Businesses that use hazardous materials are required to submit a Hazardous Materials Business Plan to the local CUPA, which performs inspections to ensure compliance with hazardous materials labeling, training, and storage regulations. For example, hazardous materials must be stored in containers according to the manufacturer's guidelines and appropriately labeled. The Material Safety Data Sheet for each chemical must be available for review. Employers must inform workers of the hazards associated with the materials they handle and maintain records documenting training. Hazardous wastes must be segregated, sampled, and disposed of at appropriately licensed landfill facilities. Transportation of hazardous materials is regulated by DOT and Caltrans. Together, federal and State agencies determine driver training requirements, load labeling procedures, and container specifications designed to minimize the risk of accidental release.

Construction and operation of projects implemented under the program could involve the routine transport, use, and disposal of hazardous materials; operation of equipment or vehicles that could pose safety risks to workers; and reasonably foreseeable upset and/or accident conditions that could result in the release of hazardous materials into the environment and cause a hazard to workers, the public, or the environment. However, the transportation, use, and disposal of hazardous materials and the use of machinery and vehicles that may pose a risk to workers are heavily regulated by numerous federal and State laws and regulations.

Because activities under the proposed regulation would comply with these federal and State laws and regulations, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.9-2: Generation of Vectors, Pathogens, and Physical Contaminants That Would Exceed Regulatory Thresholds and Create a Significant Health or Environmental Hazard

Implementation of reasonably foreseeable compliance responses could result in the attraction of vectors and the propagation and transport of pathogens and physical contaminants (including microplastics), which are public and environmental health hazards. However, composting facilities and operations that process green material, agricultural material, vegetative food material, and food material are regulated by existing laws and regulations to protect human and environmental health. Therefore, this impact would be **less than significant**.

Discussion

Implementation of the program would result in an increase in the collection of green material, agricultural material, vegetative food material, and food material. These feedstocks can serve as an attractive environment for pests that act as vectors, such as flies, cockroaches, and rodents. Incoming green material, agricultural material, vegetative food material, and food material would be deposited on a tipping floor or some other processing area for sorting and preprocessing or placed directly in containers. Pests could be present in the material and transported to the facility or attracted to the facility from the surrounding area. Additionally, organic waste material may contain pathogens, such as Escherichia coli (E. coli) bacteria and Salmonella. Processing of compost may occur outside of enclosed vessels, such as in windrows, which could be an attractant to vectors. Some facilities and operations may have associated stormwater detention ponds or effluent ponds, which could provide a fertile mosquito breeding habitat. Implementation of edible food recovery programs could also result in the spread of pathogens if food is not handled properly. Implementation of the proposed regulation could result in the spread or generation of vectors, pathogens, and pests that would create a significant health or environmental hazard.

For compost facilities and operations, 14 CCR Section 17867 stipulates that “all handling activities shall be conducted in a manner that minimizes vectors, litter, hazards, nuisances, and noise impacts; and minimizes human contact with, inhalation, ingestion, and transportation of dust, particulates, and pathogenic organisms.” If regulated as a transfer processing facility, the site would be required to “take adequate steps to control or prevent the propagation, harborage, and attraction of flies, rodents, or other vectors, and animals, and to minimize bird attraction” (14 CCR Section 17410.4). These articles give the LEA and CalRecycle broad discretion to ensure that composting facilities and operations do not provide a suitable environment to promote the generation of vectors. In addition, local pest management agencies (i.e., mosquito abatement districts, environmental health departments) have the authority to inspect facilities/operations and enforce compliance with vector control. Vector populations can be kept under control with implementation of BMPs such as enclosing waste storage areas within a building, providing routine cleaning, installing insect traps, using rodent control services, using chemical treatment, and minimizing the extent of stagnant water. Additional BMPs that may be applicable and imposed by the LEA and CalRecycle may include:

- The use of impermeable (asphalt concrete) or low permeable surfaces (compacted clay area) beneath areas of a facility or operation that will receive, store, and process feedstock and where composting will

occur to prevent or limit infiltration of leachate into the subsurface. This should be used particularly when the soil percolation rate and minimum depth to groundwater criteria in the Compost General Order cannot be met.

- Scrape or clean residual feedstock and compost off surface between composting cycles to mitigate potential accumulation of contaminants.
- Construct surface drainage ditches around feedstock and compost pads that convey surface water and leachate to detention ponds to prevent run-off.
- Cover feedstock and compost piles to limit exposure during storm events by constructing permanent roof structures over these areas or temporarily covering with material such as visqueen, tents, or tarps.
- Utilize personal protective equipment for facility/operation personnel that handle feedstock and compost material such as nitrile gloves, safety glasses, and face masks to limit direct contact, ingestion, and inhalation exposure.

In addition, regulations for composting operations (e.g., windrows, aerated static piles) require reducing pathogen concentrations in composted material to acceptable levels. Active compost in windrows is required to have a minimum temperature of 131°F for 15 days or longer, and aerated static piles or in-vessel systems are required to have a minimum temperature of 131°F for a continuous three-day period, as established by State regulations (14 CCR Section 17868.3). Operators must demonstrate that compost does not exceed the maximum acceptable pathogen concentrations for fecal coliform and Salmonella described in 14 CCR Section 17868.3(b). Compost that contains any pathogens in amounts that exceed these pathogen reduction requirements shall be designated for additional processing, disposal, or other use as approved by local, State, or federal agencies having appropriate jurisdiction. Test results of samples must be received by the operator before compost is removed from the composting operation or facility where it was produced.

Regulations for composting operations enforced by CalRecycle also require that compost shall not contain more than 0.5% by dry weight of physical contaminants greater than 4 millimeters and no more than 20% of this 0.5% shall be film plastic greater than four millimeters. Compost that contains physical contaminants (including microplastics) in excess of either one or both of these limits shall be designated for additional processing, disposal, or other use as approved by local, state or federal agencies having appropriate jurisdiction. Verification of physical contamination limits shall occur prior to the point where compost is removed from the facility and operation or beneficially used on-site. Test results of samples must be received by the operator prior to removing compost from the composting operation or facility where it was produced (14 CCR Section 17868.3.1). 14 CCR establishes minimum sampling frequencies for physical contaminants to verify physical contaminants do not exceed acceptable thresholds.

Implementation of reasonably foreseeable compliance responses could result in the attraction of vectors and propagation and transport of pathogens and physical contaminants, which are public and environmental health hazards. However, composting facilities and operations that process green material, agricultural material, food material and vegetative food material are regulated by existing laws and regulations to protect human and environmental health. Future regulations established for microplastics are anticipated and future composting facilities and operations under this program would be required to comply with those regulations. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.9-3: Potential Hazards Associated with the Release of Hazardous Materials from the Siting of Composting Facilities and Operations within One-Quarter Mile of a School

The specific location of small and medium composting facilities and operations that would be developed under the program is currently unknown. However, hazards associated with small and medium composting facilities and operations would constitute a stationary source and would be subject to the permitting requirements set by the appropriate air district. Therefore, implementation of the program would not result in substantial new hazards associated with the release of hazardous materials from siting of composting facilities and operations within one-quarter mile of a school. This impact would be **less than significant**.

Discussion

Existing compost facilities and operations are typically not sited close to schools. It is anticipated that most composting facilities and operations implemented in response to the program would either be co-located at or near existing facilities (i.e., landfills, wastewater treatment plants, dairies [for manure composting only], or other existing waste management sites) or be located at new standalone sites in areas zoned for agricultural, industrial, or solid-waste-handling facilities. Edible food recovery and community-scale composting facilities and operations would more likely be located in urban areas. Because composting facilities and operations would most likely be associated with existing facilities or located in areas zoned for industrial or solid waste handling facilities, these facilities would be unlikely to be located within one-quarter mile of a school. Most hazardous materials accidents are related to accidental spill of gas, oil, or other hazardous materials. Because these materials are generally used in small quantities for mechanical equipment, vehicles, or maintenance at composting facilities, such spills would be small and confined to within the property boundary of the facility. Additionally, as described for Impact 3.9-1, compliance with federal and State laws and regulations governing the transport, use, and disposal of hazardous materials would reduce potential hazard impacts from later activities under the proposed regulation.

Additionally, as discussed for Impact 3.3-4 in Section 3.3, “Air Quality,” the operation of facilities and operations constructed as part of the program would require the operation of diesel-powered vehicles and equipment, which could introduce mobile- and stationary-source TAC emissions. However, operation of composting facilities and operations under the program would likely result in reductions in emissions of TACs as compared to existing conditions at landfills. Further, TACs generated by the reasonably foreseeable composting facilities and operations would constitute a stationary source and would be subject to the permitting requirements set by the appropriate air district. Therefore, implementation of the proposed regulation would not result in substantial new hazards associated with the release of hazardous materials from siting of organic waste recovery facilities within one-quarter mile of a school. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.9-4: Significant Hazards to the Public or Environment from Disturbance to Known Hazardous Material Sites

Soil disturbance caused by construction associated with new composting facilities and operations built in response to the program would have the potential to expose workers, the public, and the environment to risks associated with existing hazardous materials if they are present within the project site. As described in Section 3.9.2, "Environmental Setting," many hazardous waste sites are located throughout the state. Facilities implemented under the program could be constructed across the state, and it is unknown at this time if any of those facilities would be located at a known hazardous waste site. Disturbance of contaminated sites could result in the exposure of the public and environment to health hazards from existing hazardous materials. This impact would be **potentially significant**.

Discussion

Hazardous materials, if present in soils, could be disturbed and dispersed by construction activities for composting facilities and operations under the program. Soil contamination generally occurs in areas that are or have been previously developed, especially with industrial land uses or for defense activities (e.g., an air force base). As described in Section 3.9.2, "Environmental Setting," many hazardous waste sites are located throughout the state. It is anticipated that most composting facilities and operations constructed in response to the program would either be co-located at or near existing facilities (i.e., landfills, wastewater treatment plants, dairies [for manure composting only], or other existing waste management sites) or be located at new standalone sites in areas zoned for industrial or solid waste handling facilities. Edible food recovery and community-scale composting facilities and operations would more likely be located in urban areas. New or proposed composting facilities/operations, because of their association with solid waste collection, could be located in industrial areas and near or at existing solid-waste-handling facilities, and wastewater treatment plants that sometimes involve the handling of hazardous materials. Thus, it is possible that new compost facilities and operations developed under the program would be located on known hazardous materials sites.

The development of some composting facilities and operations may not require soil disturbance. Projects that would not involve soil disturbance include the application of compostable material on land (primarily agricultural lands), changes in operations at existing recycling facilities to expand processing facilities or modify collection routes, and mobile chip and grind operations.

New composting facilities and operations that could require soil disturbance include organics-dedicated transfer stations or upgrades to existing facilities that require grading or some amount of excavation. Ground disturbance during construction activities could accidentally release hazardous materials into the environment if they are present. If released, hazardous materials could enter waterways via runoff or expose workers or the public to harmful effects through inhalation or dermal exposure. For these reasons, this impact would be potentially significant.

Mitigation Measures

Mitigation Measure 3.9-4: Identify and Avoid Known Hazardous Waste Sites During Construction of New Composting Facilities and Operations

Prior to local agency approval of a project under the program, the project proponent shall evaluate the potential for hazardous materials and whether hazardous materials are known to have been used, stored, or disposed of within or near the project site. The project proponent shall also conduct a DTSC EnviroStor web search

(https://www.envirostor.dtsc.ca.gov/public/) and consult DTSC's Cortese List to identify any known contamination sites on the project site. If a No Further Action determination was issued for the site or portions of the site, the project proponent shall evaluate the potential for further disturbance of the closed site as a result of on-site composting-related activities. If the site is determined to contain hazardous waste or is included on the DTSC Cortese List and identified as containing potential soil contamination that has not been cleaned up and deemed closed by DTSC, the area of contamination will be avoided, if feasible, or remediated before ground-disturbing activities begin within the site boundaries.

This information shall be presented in the form of a Phase I Environmental Site Assessment (ESA). The Phase I ESA shall be prepared by a Registered Environmental Assessor or other qualified professional to assess the potential for contaminated soil or groundwater conditions at the project site—specifically in the area proposed for construction of new or modified composting facilities and operations. If no contaminated soil or groundwater is identified or if the Phase I ESA does not recommend any further investigation, then the project applicant or LEA would proceed with final project design and construction.

If existing soil or groundwater contamination is identified, and if the Phase I ESA recommends further review, project proponent shall retain a Registered Environmental Assessor (REA) to conduct follow-up sampling to characterize the contamination and to identify any required remediation to be conducted consistent with applicable regulations before any earth-disturbing activities. Remediation as recommended by the REA shall be conducted prior to site development with a small or medium composting facility/operation.

Significance after Mitigation

Implementation of Mitigation Measure 3.9-4 would reduce impacts related to the exposure of the public or environment to significant hazards because the project proponent would identify hazards and hazardous materials sites prior to construction of a composting facility/operation, provide an opportunity to avoid contaminated soil, or identify necessary remedial actions to remove the contamination before earth-disturbing activities. As a result, impacts would be reduced to a level of **less than significan**t.

Impact 3.9-5: Safety Hazard from Siting a Composting Facility/Operation Within 5 Miles of an Airport

Composting facilities and operations would process food materials and vegetative food materials that could attract scavenging birds to sites located near airports, thus increasing the risk of bird strikes for aircraft departing or approaching any nearby airports. FAA Advisory Circular 150/5200-33B recommends a minimum distance of 5 miles between various land uses practices that attract wildlife, such as MSWLFs, and airports. Because the locations of compost facilities and operations are not explicitly governed by the same locational requirements established by federal regulations for MSWLFs to minimize wildlife hazards, this impact would be **potentially significant**.

Discussion

Wildlife-aircraft strikes have resulted in the loss of hundreds of lives worldwide, as well as substantial amounts of aircraft damage. Implementation of the program would result in the development of new or modified composting facilities and operations that process food material and vegetative food material and that can provide wildlife with ideal locations for feeding, reproduction, and refuge.

Additionally, implementation of the program would result in increased collection and handling of organic material, which could also present as an attractant to wildlife. If these facilities were located in the vicinity of an airport, wildlife attracted to the food waste could pose a substantial hazard to aircraft. Food materials at

composting facilities/operations could attract scavenging birds to the site, increasing the risk of bird strikes for aircraft departing or approaching nearby airports.

FAA Advisory Circular 150/5200-33B recommends minimum separation criteria for various land uses practices that attract wildlife in the vicinity of airports. For all airports, FAA recommends a distance of 5 miles between the farthest edge of the airport's air operations area and the hazardous wildlife attractant if the attractant could cause hazardous wildlife movement into or across the approach or departure airspace. FAA discourages the development of waste disposal and other facilities within 5,000 and 10,000 feet of airports serving piston-powered and turbine-powered aircraft, respectively. For projects located outside the 5,000- and 10,000-foot criteria but within 5 statute miles of the airport's air operations area, FAA may review development plans, proposed land use changes, or operational changes to determine whether such changes would present potential wildlife hazards to aircraft operations and if further investigation is warranted.

EPA requires any MSWLF operator proposing a new or expanded waste disposal operation within 5 statute miles of a runway end to notify the appropriate FAA Regional Airports Division Office and the airport operator of the proposal. EPA also requires owners or operators of new MSWLF units, as well as owners or operators of existing MSWLF units proposing a lateral expansion, that are located within 10,000 feet of any airport runway end used by turbojet aircraft, or within 5,000 feet of any airport runway end used only by piston-type aircraft, to demonstrate successfully that such units would not pose a hazard to aircraft.

Composting facilities and operations would not be subject to the same regulations as MSWLFs; however, operation of these facilities and operations could create a hazardous wildlife attractant and a potential safety hazard to aviation if they are located within 5 miles of an airport.

As stated in the discussion of Impact 3.9-3, compost facilities and operations would be required to operate in a manner that minimizes vectors, odors, litter, hazards, nuisances, and noise impacts (14 CCR Section 17867), and they would be required to take adequate steps to control or prevent the propagation, harborage, and attraction of flies, rodents, or other vectors and other animals and to minimize bird attraction (14 CCR Section 17410.4). These regulations give the LEA and CalRecycle broad discretion to ensure that compost facilities and operations minimize bird attraction. However, because the locations of compost facilities and operations are not explicitly governed by the same locational requirements established by federal regulations for MSWLFs to minimize wildlife hazards, this impact would be potentially significant.

Mitigation Measures

Mitigation Measure 3.9-5: Apply Federal Regulations for MSWLFs to Composting Facilities and Operations Within 5 Miles of an Airport

Prior to local agency approval of a project under the program, the project proponent shall notify the appropriate FAA Regional Airports Division and the airport operator of the proposal for a new composting facility/operation as early in the process as possible. Composting facilities and operations with any open air (outdoor) activities must receive an FAA Determination of No Hazard before project approval. Evidence of the FAA determination shall be provided to the local agency prior to their approval of the project.

Significance after Mitigation

Implementation of Mitigation Measure 3.9-5 would reduce impacts associated wildlife attractants near airports because composting facilities and operations with any open air (outdoor) activities must receive an FAA

Determination of No Hazard before project approval. As a result, impacts would be considered **less than significant**.

Impact 3.9-6: Impaired Implementation of or Physical Interference with an Adopted Emergency Response Plan or Emergency Evacuation Plan

New or modified composting facilities and operations would have associated collection routes that could be spread throughout the state. Operation of new or modified composting facilities and collection routes would not be located such that there would be physical interference with an adopted emergency response plan or emergency evacuation plan. Construction activities related to new or modified composting facilities would be short term and temporary; however, heavy equipment accessing project sites from public roads during construction and installation of utilities in the public right-of-way has the potential to impair implementation of emergency response and evacuation plans. This impact would be **potentially significant**.

Discussion

It is anticipated that most composting facilities and operations implemented in response to the program would either be co-located at or near existing facilities (i.e., landfills, wastewater treatment plants, dairies [for manure composting only], or other existing waste management sites) or be located at new standalone sites in areas zoned for industrial or solid waste handling facilities. Edible food recovery and community-scale composting facilities and operations are more likely to be located in urban areas. Implementation of the program could also result in increases in vehicle trips associated with increased collection of organic waste and food recovery.

These facilities and operations of collection routes would be spread throughout the state. Operation of new or modified composting facilities and operations and collection routes would not be located such that there would be physical interference with an adopted emergency response plan or emergency evacuation plan.

Construction of individual new or modified composting facilities and operations could require access by workers and heavy equipment, delivery and stockpiling of materials, demolition and removal of debris, and other activities that, depending on the timing and nature of construction activities, could limit vehicular access on roads adjacent to individual project sites. Construction and installation of utilities in the public right-of-way could result in temporary road or lane closures that might impair implementation of emergency response and evacuation plans if proper precautions were not taken. Although these construction activities would be short term and temporary, heavy equipment accessing project sites from public roads during construction has the potential to impair implementation of emergency response and evacuation plans. This impact would be potentially significant.

Mitigation Measures

Implement Mitigation Measure 3.14-1.

Significance after Mitigation

Implementation of Mitigation Measure 3.14-1 would reduce impacts associated with the potential to impair implementation of emergency response and evacuation plans, because it would require the contractor(s) to submit a traffic safety/traffic management plan (for work in the public right-of-way) to the agencies having jurisdiction over the affected roads, coordinate with police and fire stations, hospitals, and schools about any planned work in or closures of work in the public right-of-way, and ensure that the flow of traffic is maintained

during any temporary lane closures associated with construction. As a result, impacts would be reduced to **less than significant**.

3.10 Hydrology and Water Quality

This section identifies the regulatory context and policies related to hydrology and water quality, describes the general hydrologic conditions that may occur at a project site, and evaluates potential hydrology and receiving water–quality impacts of projects that may be developed as a part of the proposed program.

Three comment letters regarding hydrology and water quality were received in response to the Notice of Preparation. The first comment requested that the EIR provide foundational guidance on pad construction, slopes, drainage, stormwater controls, and water-supply needs of small and medium composting facilities and operations. The second comment requested evaluation of potential water quality impacts, including identification of potential pollutants, and the potential for local regulations to address water quality and stormwater control. The third comment noted that the siting of future small and medium composting facilities and operations would need to comply with the National Flood Insurance Program and other applicable floodplain management regulations, in addition to the need to evaluate potential site-specific stormwater, water quality, and groundwater concerns.

3.10.1 Regulatory Setting

Federal

Clean Water Act and Associated Programs

The U.S. Environmental Protection Agency (EPA) is the lead federal agency responsible for water quality management. The Clean Water Act (CWA) is the primary federal law that governs and authorizes water quality control activities by EPA as well as the states. Various elements of the CWA address water quality. These are discussed in the following section.

CWA Water Quality Criteria/Standards

Pursuant to federal law, EPA has published water quality regulations under Title 40 of the Code of Federal Regulations. Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the act, water quality standards consist of designated beneficial uses of the water body in question and criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. As described in the discussion of state regulations in this document, the State Water Resources Control Board (SWRCB) and its nine regional water quality control boards (RWQCBs) have designated authority in California to identify beneficial uses and adopt applicable water quality objectives.

CWA Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that do not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a total maximum daily load (TMDL) for each of the listed pollutants. The TMDL is a "pollution budget," designed to restore the health of a polluted waterbody and provide protection for beneficial uses. The TMDL also contains the target reductions needed to meet water quality standards and allocates those reductions among the pollutant sources in the

watershed (i.e., point sources, nonpoint sources, and natural sources) (40 CFR 130.2). A TMDL is unique to a specific waterbody and its surrounding pollutant sources and is not applicable to be used for other waterbodies. In California, implementation of TMDLs is achieved through water quality control plans, known as Basin Plans, of the state RWQCBs, which are explained in further detail in Section 3.10.2.

CWA Sections 401 and 402 National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the United States. NPDES permit regulations have been established for broad categories of discharges including point source waste discharges and nonpoint source stormwater runoff. Each NPDES permit identifies limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits.

"Nonpoint source" pollution originates over a wide area rather than from a definable point. Nonpoint source pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances. Two types of nonpoint source discharges are controlled by the NPDES program: discharges caused by general construction activities and the general quality of stormwater in municipal stormwater systems. The goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving waters to the maximum extent practicable.

The RWQCBs in California are responsible for implementing the NPDES permit system (see the "State" section of Section 3.10.1 of this document).

Federal Anti-Degradation Policy

The federal anti-degradation policy includes minimum criteria to protect existing beneficial uses, ensure the level of water quality is offset to maintain existing uses, and prevent degradation of quality water. This policy stipulates that states adopt at a minimum the following provisions and allows states to adopt even more stringent rules (40 CFR 131.12):

1. Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.
2. Where the quality of waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the state finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the state's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located.
3. Where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

National Flood Insurance Act

The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from and mitigating against disasters. The Federal Insurance and Mitigation Administration within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that aid with mitigating future damages from natural hazards.

FEMA prepares Flood Insurance Rate Maps (FIRMs) that delineate the regulatory floodplain to assist local governments with the land use planning and floodplain management decisions needed to meet the requirements of NFIP. Floodplains are divided into flood hazard areas, which are areas designated per their potential for flooding, as delineated on FIRMs. Special Flood Hazard Areas are the areas identified as having a one percent chance of flooding each year (otherwise known as the 100-year flood). In general, the NFIP mandates that development is not to proceed within the regulatory 100-year floodplain if the development is expected to increase flood elevation by 1 foot or more.

State

Porter-Cologne Water Quality Control Act

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants SWRCB and each of the nine RWQCBs power to protect water quality and is the primary vehicle for implementation of California's responsibilities under the CWA. Under the Porter-Cologne Act, each RWQCB must formulate and adopt a water quality control plan (known as a "Basin Plan") for its region. The Basin Plan lists the beneficial uses that each RWQCB has identified for local aquifers, streams, marshes, and rivers, and the Water Quality Objectives and criteria that must be met to protect these uses. Any activity, discharge, or proposed activity or discharge from a property or business that could affect California's surface, coastal, or groundwater will (in most cases) be subject to a Waste Discharge Requirement (WDR). The California Water Code authorizes the SWRCB and the RWQCBs to conditionally waive WDRs if this is in the public interest. Discharges made under the program may be subject to WDR requirements. Title 22, Division 4, Chapter 15, of the California Code of Regulations establishes parameters for safe drinking water throughout the state.

NPDES General Permit for Stormwater Discharges Associated with Construction Activity

SWRCB adopted the 2022 Construction Stormwater General Permit, Order 2022-0057-DWQ (General Order 2022-0057-DWQ), on September 8, 2022, and it went into effect on September 1, 2023. The state requires that projects disturbing more than 1 acre of land during construction file a Notice of Intent with the RWQCB to be covered under this permit, which requires the preparation of a stormwater pollution prevention plan (SWPPP) for discharges regulated under the SWRCB program. Construction activity subject to this permit includes, but is not limited to, clearing, demolition, grading, excavation, and other land disturbance activities. As part of a SWPPP, implementation of Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) is required to reduce or eliminate pollutants in stormwater runoff. The NPDES permit must also include any additional requirements necessary to achieve applicable water quality standards through treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

NPDES Stormwater Permit for Discharges from Small Municipal Separate Storm Sewer Systems

The Municipal Stormwater Permitting Program regulates stormwater discharges from municipal separate storm sewer systems (MS4). Stormwater is runoff from rain or snow melt that runs off surfaces such as rooftops, paved streets, highways or parking lots and can carry with it pollutants such as oil, pesticides, herbicides, sediment, trash, bacteria and metals. The runoff can then drain directly into a local stream, lake or bay. Often, the runoff drains into storm drains which eventually drain untreated into a local water body.

General Waste Discharge Requirements for Commercial Composting Operations

The State Water Board developed the General Waste Discharge Requirements for Composting Operations (Composting General Order) to support the diversion of organic material from landfills to composting operations while providing requirements to protect water quality. SWRCB certified the associated EIR and adopted the Composting General Order on August 4, 2015 (Resolution No. 2015-0054, Order WQ 2015-0121-DWQ). A revision to the Composting General Order was adopted and a supplemental EIR was certified on April 7, 2020 (Resolution No. 2020-0007) that allowed manure to be included as agricultural feedstock. Revisions were incorporated into General Waste Discharge Requirements for Commercial Composting Operations (Order WQ 2020-0012-DWQ). Order WQ 2020-0012-DWQ amends Order WQ 2015-0121-DWQ (SWRCB 2020).

The Composting General Order focuses on the protection of groundwater and surface water and imposes specific requirements on composting operations (taking into consideration the types of feedstocks used, the volume of materials on-site at one time, and hydrogeologic site conditions). The order creates two tiers of facilities based on those conditions. These include:

- Design of facilities and operations to manage a 25-year, 24-hour peak storm event at a minimum to prevent or limit sediment laden stormwater run-on and/or run-off.
- Grade working surfaces to facilitate drainage and minimize ponding by sloping or crowning composting pads to reduce infiltration.
- For Tier 1 composting activities, meet the soil percolation rate and minimum depth to groundwater criteria.
- For Tier 2 composting activities, surfaces and drainage ditches to be constructed of compacted fine-grained soil (like clay), asphaltic-concrete, or equivalent.
- Requires routine inspection and monitoring of all facility and operation drainage systems and engineered working surfaces.

The tier and applicability of the Composting General Order depends on the types of feedstocks used, volume of materials on site, and hydrogeologic site conditions. These requirements address the risk to hydrology and water quality by requiring adequate facility drainage to minimize ponding on composting pads to limit the infiltration of leachate into the subsurface, ensuring facilities can handle stormwater run-on and run-off from a moderately-sized precipitation event, and establishing minimum soil and depth to groundwater criteria that must be met to demonstrate low risk. If the minimum soil and depth to groundwater criteria cannot be met, then an engineered surface with low percolation rates must be constructed.

Policy for Implementation of Toxics Standards for Inland Surface Waters Enclosed Bays and Estuaries of California

In 1994, the SWRCB and the U.S. Environmental Protection Agency agreed to a coordinated approach for addressing priority toxic pollutants in inland surface waters, enclosed bays, and estuaries of California. In March 2000, the SWRCB adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, commonly referred to as the State Implementation Policy. The State Implementation Policy implements the National Toxics Rule and California Toxics Rule criteria, and applicable Basin Plan objectives, for toxic pollutants. When the RWQCBs issue any permit allowing the discharge of any toxic pollutant(s) pursuant to the CWA or the Porter-Cologne Act, the permit's promulgation and

implementation must be consistent with the State Implementation Policy's substantive or procedural requirements. Any deviation from the State Implementation Policy requires the concurrence of the U.S. Environmental Protection Agency if the RWQCBs are issuing any permit pursuant to the CWA. Consistency with the State Implementation Policy occurs when water permits are issued for program activities.

California Anti-Degradation Policy

The SWRCB enacted the Statement of Policy with Respect to Maintaining High Quality of Waters in California, which is also referred to as the California Anti-Degradation Policy. This policy incorporated the federal antidegradation policy and is used to ensure that high-quality water is maintained and limits the discharge of pollutants into high-quality water in the state (Resolution Number 68-16, SWRCB 1968), as follows:

1. Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.
2. Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.

California Water Code

The California Water Code is enforced by the California Department of Water Resources (DWR). The mission of DWR is "to manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments." DWR is responsible for promoting California's general welfare by ensuring beneficial water use and development statewide.

Groundwater Management

Groundwater Management is outlined in the California Water Code, Division 6, Part 2.75, Chapters 1–5, Sections 10750 through 10755.4. The Groundwater Management Act was first introduced in 1992 as Assembly Bill (AB) 3030 and has since been modified by Senate Bill (SB) 1938 in 2002, AB 359 in 2011, and the Sustainable Groundwater Management Act (SB 1168, SB 1319, and AB 1739) (SGMA) in 2014. The intent of the acts is to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdiction and to provide a methodology for developing a Groundwater Management Plan.

The SGMA became law on January 1, 2015, and applies to all groundwater basins in the state (Water Code Section 10720.3). By enacting the SGMA, the legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdiction (Water Code Section 10720.1).

Pursuant to the SGMA, any local agency that has water supply, water management or land use responsibilities within a groundwater basin may elect to be a "groundwater sustainability agency" for that basin (Water Code Section 10723). Groundwater derived from areas overlying medium and high-priority basins, as defined by DWR,

must be accounted for in groundwater sustainability plans. A groundwater sustainability plan (GSP) must include various topics, including:

- a description of the physical setting and characteristics of the basin;
- measurable objectives to achieve sustainability goals within 20 years of the implementation of the plan;
- a planning and implementation horizon;
- management considerations, such as groundwater quality, subsidence, mitigation of overdraft, recharge methods, and other affected issues;
- a monitoring plan and protocols; and
- a description of various adopted water resources-related plans and programs within the basin and an assessment of how the GSP may affect those plans.

In total, 81 basins are now operating under an approved GSP. These 81 basins account for 71% of statewide groundwater use in Water Year 2024 (DWR 2026). GSAs are required to begin implementation of their GSPs upon submittal to DWR and have 20 years to achieve sustainability within the basin and are required to submit annual reports.

Central Valley Flood Protection Act

The Central Valley Flood Protection Act of 2008 establishes the 200-year flood event as the minimum level of protection for urban and urbanizing areas. As part of the state's FloodSAFE program, those urban and urbanizing areas protected by flood control project levees must receive protection from the 200-year flood event level by 2025.

DWR and the Central Valley Flood Protection Board (CVFPB) collaborated with local governments and planning agencies to prepare the 2012 Central Valley Flood Protection Plan (CVFPP) (DWR 2012), which the CVFPB adopted on June 29, 2012. The objective of the 2012 CVFPP is to create a system-wide approach to flood management and protection improvements for the Central Valley and San Joaquin Valley. The Central Valley Flood Protection Act calls for updates to the CVFPP every five years. The 2022 CVFPP Update continues to build on the work previously completed to better understand and develop priorities to improve flood risk management in the Central Valley and recommends priority actions to address flood risk in the face of climate change (DWR 2023a).

State Plan of Flood Control

Section 9110(f) of the California Water Code defines the State Plan of Flood Control as follows:

> 'State Plan of Flood Control' means the state and federal flood control works, lands, programs, plans, policies, conditions, and mode of maintenance and operations of the Sacramento River Flood Control Project described in Section 8350, and of flood control projects in the Sacramento River and San Joaquin River watersheds authorized pursuant to Article 2 (commencing with Section 12648) of Chapter 2 of Part 6 of Division 6 for which the board or the department has provided the assurances of nonfederal cooperation to the United States, and those facilities identified in Section 8361.

The State Plan of Flood Control encompasses a wide network of facilities, which range from major structures such as levees, drainage pumping plants, drop structures, dams and reservoirs, and major channel improvements, to minor components such as stream gauges, pipes, and bridges.

Local

Given its statewide extent and the possible number of local and regional responsible agencies, this EIR does not identify individual, potentially applicable local government plans, policies, and ordinances. Types of local regulations relevant to hydrology and water quality may include general plan policies and ordinances protective of these resources. This EIR assumes that the reasonably foreseeable compliance responses with implementation of the program would be consistent with local plans, policies, and ordinances to the extent that development of small and medium composting facilities and operations under the program are subject to them, because local land use and permit approvals are typically conditioned upon such consistency.

3.10.2 Environmental Setting

California Climate

The climate of California is highly varied depending on elevation, proximity to the coast, and altitude. Climate types within the state include temperate oceanic, highland, subarctic, Mediterranean, steppe, and desert. California's precipitation patterns are becoming more variable, with an increase in extreme wet and dry periods. Currently, temperatures are warming, heat waves are more frequent, and wet seasons are shorter but more intense, characterized by bursts of heavy rainfall often associated with atmospheric rivers. California has experienced a succession of dry spells, and with warmer conditions the impacts of these droughts have increased (DWR 2026, 1-36; Bedsworth et. al. 2018, 13).

While these events can generate significant surface runoff, they are less effective at recharging groundwater due to the rapid flow of water through watersheds, bypassing infiltration pathways. Extended dry periods further reduce the overall availability of precipitation for groundwater recharge, which compounds the problem (DWR 2026, 1-36).

Statewide Hydrology and Water Quality

Surface Waters

California's diverse surface waters occur as streams, lakes, ponds, coastal waters, lagoons, and estuaries, or are found in floodplains, dry lakes, desert washes, wetlands and other collection sites. Water bodies modified or developed by man, including reservoirs and aqueducts, are also considered surface waters.

The state has more than 60 major stream drainages and more than 1,000 smaller but significant drainages that channel water from coastal and inland mountains. California's water systems were designed and have been operated for a winter snowpack and spring snowmelt from the Sierra Nevada that has contributed on average, one-third of the state's water supply. Historically, the snowpack released runoff over an extended period, through the spring and early summer; but, with increased temperatures and more precipitation falling as rain instead of snow, there is higher risk of early runoff, flooding, and less water available during the arid summer months (DWR 2023b, 2-2).

Groundwater

The majority of runoff from snowmelt and rainfall flows down mountain streams into low gradient valleys and either percolates into the ground or is discharged to the sea. This percolating flow is stored in alluvial groundwater basins that provide roughly 41% of California's total water supply in average years and rises to nearly 60% during dry years (DWR 2026, 1-4). Groundwater recharge occurs more readily in areas underlain by

coarse sediments, primarily in mountain base alluvial fan settings. As a result, the majority of California's groundwater basins are in broad alluvial valleys flanking mountain ranges, such as the Cascade Range, Coast Ranges, Transverse Ranges, and the Sierra Nevada.

There are 515 designated groundwater basins or subbasins, each managed within their hydrologic regions.

Water Quality

Land uses have a substantial effect on surface water and groundwater water quality in California. Water quality degradation of surface waters occurs through nonpoint and point-source discharges of pollutants. Nonpoint source pollution is defined as not having a discrete or discernible source and is generated from land runoff, precipitation, atmospheric deposition, seepage, and hydrologic modification. Nonpoint-source pollution includes runoff containing pesticides, insecticides, and herbicides from agricultural areas and residential areas; acid drainage from inactive mines; bacteria and nutrients from septic systems and livestock; volatile organic compounds and toxic chemicals from urban runoff and industrial discharges; sediment from poor road construction, improperly managed construction sites, and agricultural areas; and deposition of pollutants from the atmosphere and modification of hydrologic flow patterns.

In comparison, point-source pollution is generated from identifiable, confined, and discrete sources, such as a smokestack, sewer, pipe or culvert, or ditch. These pollutant sources are regulated by EPA and SWRCB through the California RWQCBs. Many of the pollutants discharged from point sources are the same as for nonpoint sources, including municipal (bacteria and nutrients), agricultural (pesticides, herbicides, and insecticides), and industrial pollutants (volatile organic compounds and other toxic effluent).

Groundwater pollution or contamination is caused by (1) naturally occurring or manmade chemicals that are discharged onto the land surface and percolate through to groundwater resources below, (2) flow into groundwater reservoirs through improperly sealed well casings, (3) leaking underground storage tanks, and (4) failed underground pipelines. Unintended backflow into wells can also occur when plumbing and pumping systems are not properly protected against backflow. Many of the sources of pollution and their toxic constituents are similar to those associated with surface water pollution. The most common groundwater pollutants are generated from nonpoint sources of salt, nitrite, pesticides, industrial effluent, and pathogens. Recent long drought periods in the state have resulted in overdraft of groundwater aquifers as needs for water increase in areas with limited surface water flow (DWR 2026b). Over pumping results in the concentration of mineral salts in the depleted aquifer and could make the groundwater source unusable for drinking water and other beneficial uses.

Sediment is considered a major surface water pollutant according to EPA and SWRCB and is a key TMDL constituent that determines impairment and 303(d) listing of impaired water bodies in a number of watersheds and river basins. High sediment loads are detrimental to beneficial water uses and aquatic habitat used by plant, amphibian and fish communities. Erosion is influenced by a variety of factors including geology and soil characteristics, topography, climate, and land use practices, among others. Sedimentation is a result of erosion and the transport of eroded fine materials to a watercourse or water body and could result in increased turbidity, elevated levels of total dissolved solids and total suspended solids. Erosion and sedimentation are natural phenomena but are greatly influenced by land management practices and land disturbance activities.

Flood Conditions

Floods are naturally occurring phenomena in California, although their occurrence and effects can be exacerbated by human activities and land management practices. Floods keep erosion and sedimentation in natural balance, replenish soils, recharge groundwater, and support a variety of riverine and costal floodplain habitats. Flooding in California can be divided into eight categories, with all hydrologic regions subject to at least one type of flooding:

- Flash Flooding – Quickly formed floods with high-velocity flows that are often caused by stationary or slow-moving storms. Flash floods typically occur on steep slopes and impermeable surfaces, and in areas adjacent to streams and creek.
- Slow-Rise Flooding – Gradual inundation as waterways or lakes overflow their banks. Slow-rise flooding in California typically occurs over a matter of days and is caused by heavy precipitation or rapid snowmelt.
- Debris-Flow Flooding – Flows made up of water, liquefied mud, and debris can form and accelerate quickly, reach high velocities, and travel great distances. Debris flows are commonly caused by heavy localized rainfall on burned hillsides devoid of vegetation.
- Alluvial Fan Flooding – Shallow, high velocity, sediment laden flows with uncertain flow paths on the surface and at the toe of alluvial fans. These floods are typically caused by localized rainstorms and snowmelt.
- Coastal Flooding – Inundation at locations normally above the level of high tide, often caused by storm surges during high tide.
- Tsunami Flooding – High speed seismic sea waves triggered by underwater earthquakes or landslides that displace large volumes of water.
- Stormwater Flooding – Localized flooding that occurs in urban areas during or after a storm event.
- Engineered Structure Failure Flooding – Flooding as a result of dam failure or levee failure. This type of flooding presents the potential for catastrophic impact, depending on the amount of water impounded and the location of populated areas downstream.

Regional Hydrology and Water Quality

DWR divides California into 10 hydrologic regions. The California Water Code defines nine basins; however, the Lahontan Region is divided in two. The boundaries of the basins are major river watershed boundaries as defined by Section 13200 of the California Water Code. The RWQCBs are responsible for developing water quality control plans known as Basin Plans for their regions. The Basin Plans include the following: the beneficial uses of water within their regions; the water quality objectives necessary to protect those uses, including an antidegradation policy; the prohibitions, policies, and action plans by which protections are implemented; and monitoring of water quality within their regions to ensure attainment of water quality standards. Compliance with the Basin Plans is achieved through the regulatory framework described in Section 3.10.1 (Regulatory Framework). The following provides a brief description of regional hydrology and surface and groundwater quality and quantity within the regions.

North Coast Hydrologic Region

The North Coast Hydrologic Region spans approximately 19,400 square miles, encompassing all or parts of Modoc, Siskiyou, Del Norte, Trinity, Humboldt, Mendocino, Lake, and Sonoma counties (DWR 2026b, 7-4). Some small portions of other counties are also included within this region. The region extends from the Oregon border south to Tomales Bay and from the Coast Ranges to the Mad River. The region is the wettest in the state, receiving with an average annual rainfall ranging from 22 to 79 inches (DWR 2026b, 3-94). The primary water quality issues in the region relate to erosion and runoff from urbanized areas, logging, and grazing operations. A total of 65 groundwater basins are in the region, and groundwater accounts for approximately one-third of the region's water supply (DWR 2023b, 3-14).

San Francisco Bay Area Hydrologic Region

The San Francisco Bay Hydrologic Region spans approximately 4,500 square miles, encompassing all of San Francisco and parts of Marin, Sonoma, Napa, Solano, San Mateo, Santa Clara, Contra Costa, and Alameda counties. Average precipitation ranges from 15 inches to 20 inches, depending on the location (DWR 2023b, 3-18). A total of 34 groundwater basins are in the region (DWR 2026b, 7-16). Local groundwater and streams meet about a third of the region's water demand (DWR 2023b, 3-18). Water management challenges include water supply, flood risks, and sea level rise to coastal areas. The primary water quality concerns in the region are maintaining or improving drinking water quality and protecting drinking water sources as well as managing groundwater overdraft and quality from both established and emerging pollutants, sea level rise, flooding and wildfires (DWR 2023b, 3-19).

Central Coast Hydrologic Region

The Central Coast Hydrologic Region spans approximately 11,300 square miles, encompassing all of Santa Cruz, Monterey, San Luis Obispo, and Santa Barbara counties, most of San Benito County, and parts of San Mateo, Santa Clara, and Ventura counties. Average annual precipitation is 18.7 inches (DWR 2023b, 3-22). Water quality issues such as nitrate and pesticide contamination stem from agricultural use in the Salinas Valley. Groundwater accounts for more than 90% of the region's total water supply, making the Central Coast the state's most groundwater-dependent region (DWR 2026b, 7-28). Water management challenges include groundwater quality, overdraft, saline water intrusion, flood risk, and wildfires and associated debris flows (DWR 2023b, 3-23).

South Coast Hydrologic Region

The South Coast Hydrologic Region spans approximately 11,300 square miles. The region includes all of Orange County, major portions of Los Angeles, Riverside, San Bernardino and Ventura Counties, and a small portion of Santa Barbara County. The international Mexico–U.S. border marks the southernmost boundary, extending up to the crest of the Transverse Ranges. The region accounts for 7% of the state's total area, but more than half of the population of California lives in this region, placing a high demand on water. Water supplies are diverse, ranging from local rivers to imports from the Sacramento, San Joaquin, Colorado, and Owens rivers to transfers, recycling, and desalination (DWR 2023b, 3-26). The large population has resulted in water quality issues related to wastewater and urban runoff.

Average annual precipitation in this region is 18 inches. A total of 74 groundwater basins are in the region, and groundwater accounts for 34% of the region's water supply (DWR 2023b, 3-26). Water challenges in the region

include water supply, flooding and wildfires including debris flows and mudslides, and groundwater salinity (DWR 2023b, 3-27).

Sacramento River Hydrologic Region

The Sacramento River Hydrologic Region spans approximately 27,200 square miles, encompassing all or large parts of Modoc, Siskiyou, Lassen, Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Placer, Sacramento, El Dorado, Yolo, Lake, and Napa counties. The region primarily covers the Sacramento Valley and extends from the Cascades Range at the Oregon Border to the Sacramento–San Joaquin Delta. It is the largest and second wettest region in the state. Climates in the region range from high desert with annual precipitation of 10 to 20 inches to the Central Valley, where precipitation varies from about 35 to 18 inches annually (DWR 2023b, 3-30). Surface water from this area provides water to the State Water Project and Central Valley Project. A total of 85 groundwater basins are in the region, and groundwater provides 34% of the region's water supply (DWR 2026, 7-52). Water in the region is primarily high quality with a few local groundwater problems. Primary water quality concerns are increasing temperature and sediment management as well as pesticides, herbicides, and other chemicals that support invasive plant species and threatens the health of the watershed (DWR 2023b, 3-31).

San Joaquin River Hydrologic Region

The San Joaquin River Hydrologic Region spans approximately 15,300 square miles, encompassing all of Calaveras, Tuolumne, Mariposa, Madera, San Joaquin, and Stanislaus counties, most of Merced and Amador counties, and parts of Alpine, Fresno, Alameda, Contra Costa, Sacramento, El Dorado, and San Benito counties. Annual precipitation ranges from 35 inches to 6.5 inches, annually depending on location within the region (DWR 2023b, 3-34). The snow and rain that fall in this region contribute to the overall water supply for the entire state. A total of 12 groundwater basins are in the region, and groundwater provides 40% of the region's water supply, and more than a fifth of all groundwater use in the state (DWR 2026b, 7-64). The primary water quality concerns are dairy management, abandoned mines cleanup, off-highway vehicle erosion control, insufficient groundwater quality to meet rural domestic use, saline water intrusion into confined aquifers and intrusion into usable groundwater, and maintaining adequate water quality, water temperature, and dissolved oxygen for environmental needs (DWR 2023b, 3-35).

Tulare Lake Hydrologic Region

The Tulare Lake Hydrologic Region spans approximately 16,800 square miles in the San Joaquin Valley and includes all of King and Tulare counties and most of Fresno and Kern counties (DWR 2026b, 7-76). The average annual precipitation in the region is 6 to 11 inches (DWR 2023b, 3-38). It is the largest agricultural region in the state and relies on groundwater and imported water supply. A total of 21 groundwater basins are in the region (DWR 2026b, 7-76). Groundwater accounts for 48% of the region's water supply and 26% of statewide groundwater use (DWR 2026b, 7-76). In normal years, surface water (primarily river water delivered through projects) supplies 70% of the demand by farms for water in the region. In dry years, farmers turn to groundwater for as much as 70% of supplies (DWR 2023b, 3-38). Because of agricultural practices, a great deal of groundwater in the region is polluted with pesticides, nitrates, sulfates, and high levels of salinity. Naturally occurring arsenic contamination also exists (DWR 2026, 7-84).

North Lahontan Hydrologic Region

The North Lahontan Hydrologic Region spans approximately 6,100 square miles, encompassing portions of Modoc, Lassen, Sierra, Nevada, Placer, El Dorado, Alpine, Mono, and Tuolumne counties. Average annual precipitation ranges from more than 70 inches in the high mountain regions to eight inches in the low valleys, with an average across the entire region of 23 inches (DWR 2023b, 3-42). It is the coolest region in the state. Water supply demands in the region are met from surface or groundwater depending on the precipitation each year. A total of 27 groundwater basins are in the region, and groundwater provides one third of the region's water supply (DWR 2026b, 7-88). Overall water quality is high in the region, with a few local water quality issues. The primary concern in the Lake Tahoe portion of the region is the level of sediments and nutrients that are tributary to Lake Tahoe and the effect it has on the lake's clarity. Groundwater wells indicated levels of arsenic, iron, and uranium were commonly detected in wells above their reference concentrations (DWR 2026b, 7-96).

South Lahontan Hydrologic Region

The South Lahontan Hydrologic Region spans approximately 26,700 square miles in eastern California, covering most of San Bernardino, Inyo, and Mono Counties and a small portion of northeastern Lost Angeles County (DWR 2026b). It is the second driest region in the state, with an average annual precipitation of 10 inches or less for most of the region (DWR 2026b, 7-109). A total of 81 groundwater basins are in the region, and groundwater accounts for 70% of the region's water supply (DWR 2026b). Water quality in this region generally is good, with a few local water quality issues. Surface water quality is affected by hydromodification, from sedimentation, erosion, and loss of riparian areas. Groundwater quality is affected by elevated concentrations of arsenic, iron, uranium and manganese (DWR 2026b, 7-108).

Colorado River Hydrologic Region

The Colorado River Hydrologic Region spans approximately 20,000 square miles in southeastern California (DWR 2026b, 7-112), encompassing all of Imperial, most of Riverside, and parts of San Bernardino and San Diego counties. Average annual precipitation is about six inches, making the Colorado River Hydrogeologic Region the most arid region of California (DWR 2023b, 3-50). A total of 70 groundwater basins are in the region, and groundwater accounts for 8% of the region's water supply (DWR 2026b, 7-112). Surface water quality concerns include elevated silt concentrations, elevated pathogen concentrations, nitrates, and impacts from animal feeding and dairy operations (DWR 2023b, 2-21). Climate change analysis illustrates potential future conditions in the region that are expected to impact groundwater resources (DWR 2026b, 7-114). The most serious groundwater issue in this region is groundwater depletion (DWR 2026b, 7-119).

3.10.3 Environmental Impacts and Mitigation Measures

Methodology

Evaluation of potential hydrology and water quality impacts is based on a review of existing documents and studies that address water resources that could be anticipated to occur in the vicinity of a small or medium composting facility/operation. Information obtained from these sources was reviewed and summarized to describe existing conditions and to identify potential environmental effects, based on the standards of significance presented in this section. In determining the level of significance, the analysis assumes that each project under the program would comply with relevant federal, state, and local laws, ordinances, and regulations.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the program would result in a potentially significant impact on hydrology and water quality if it would:

- Violate any water quality standards or WDRs, substantially degrade surface water or groundwater quality, or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would:
    - result in substantial erosion or siltation on/or off-site.
    - create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
    - impede or redirect flood flows.
- Be located in flood hazard, tsunami, or seiche zones, and risk release of pollutants due to project inundation.
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Issues Not Discussed Further

No issues related to hydrology and water quality are dismissed from further analysis.

Environmental Impacts and Mitigation Measures

Impact 3.10-1: Violate of Any Water Quality Standards or Waste Discharge Requirements, Substantially Degrade Surface Water or Groundwater Quality, or Conflict with the Implementation of a Water Management Plan during Construction

The program would facilitate the permitting and development of small and medium composting facilities (up to 11 acres in size). Site grading and construction of these facilities would create ground disturbance, could accelerate soil erosion, and could adversely affect water quality. However, through compliance with existing regulations, including the Construction Stormwater General Permit, projects permitted under the program would include implementation of site-specific measures to control on-site stormwater and protect water quality. Therefore, this impact would be **less than significant**.

Discussion

The program would facilitate the construction and operation of new small and medium composting facilities operations that would generally range between 5 and 11 acres in size. Site grading and construction of composting and site facilities would be expected to require grading, excavation, and stockpiling of soils. These activities would create ground disturbance that could accelerate soil erosion (see Section 3.7, “Geology and Soils”). Soils exposed during rain events could generate sediment that could be carried in runoff into storm

drains and surface waters. Vehicle traffic into and out of construction areas could carry sediment onto roadways, where it could be ground into fine sediments.

Additionally, fuel, oils, and chemicals used in equipment operation could spill, potentially migrating though soils into groundwater. An increase in sediment or other contaminants in surface waters could conflict with the water quality standards and beneficial uses established in regional water quality control plans.

Construction water quality effects are temporary and are managed through standard, industry-accepted BATs and BCTs that are managed and monitored by personnel trained and certified through SWRCB. All future projects that disturb more than one acre would be required to comply with the Construction Stormwater General Permit (Order 2022-0057-DWQ). This permit requires the development of a site-specific SWPPP by a Qualified SWPPP Practitioner. SWPPPs must identify all pollutants, their sources, and control mechanisms, including sources of sediment associated with all construction activities, and must include site-specific BMPs that comply with BATs and BCTs to reduce the potential for impacts on water quality resulting from stormwater runoff. Additionally, a hazardous materials spill response plan is a required component of the SWPPP and would reduce the potential of directly and indirectly affecting water quality through construction-related hazardous material spills. The following list of standard BMPs are representative of the types of measures incorporated into the projects' SWPPP:

- Runoff control BMPs: These measures include grading surfaces to control sheet flow; constructing barriers or berms that force sheet flows around protected areas; and constructing stormwater conveyances, such as channels, drains, and swales. These practices and features collect runoff and redirect it to prevent contamination of surface waters. Calculations will be made for anticipated runoff, and the stormwater conveyances will be constructed, designed, and located to accommodate these flows.
- Erosion control blankets/mats, geotextiles, and plastic covers: These erosion control methods will be used on flat or sloped surfaces to keep soil in place. They also can be used to cover disturbed soil to prevent runoff.
- Gravel/sandbag barrier: A temporary sediment barrier will be constructed using gravel or sand-filled bags to prevent sediment from disturbed areas from reaching existing drainages by reducing the volume of sheet flows.
- Hydraulic, straw, and wood mulch: The use of these various mulches will temporarily stabilize soil on surfaces with little or no slope.
- Preservation of existing vegetation: Preserving the existing vegetation to the maximum extent possible will provide protection of exposed surfaces from erosion and can keep sediment in place.
- Scheduling and planning: Appropriate scheduling and planning provide ways to minimize disturbed areas, which reduces the amount of activity in the project area and minimizes the duration of exposure of disturbed soils to erosion.
- Stabilized construction entrance/exit. A graveled area or pad can be built at points where vehicles enter and leave a construction site. This BMP involves providing a buffer area where vehicles can drop their mud and sediment to avoid transporting it onto public roads, which helps to control erosion from surface runoff and control dust.

- Storm drain inlet protection: Protection consists of incorporating devices and procedures that detain or filter sediment from runoff, thereby preventing it from reaching drainage systems that will be used following construction, as well as surface waters.
- Spill prevention and control: Any spills or releases of materials will be cleaned up immediately and comprehensively. Appropriate and easily accessible cleanup equipment, including spill kits containing absorbents, will be located in several areas around the site. Used cleanup materials will be disposed of properly and in accordance with applicable regulations. Hazardous or toxic material spills must be treated as hazardous waste and be treated and disposed of accordingly.

The Construction NPDES permit also requires construction site inspections and stormwater sampling and monitoring, adherence to numeric action levels and effluent limits for pH and turbidity, compliance reporting, development and adherence to a Rain Event Action Plan, and any necessary maintenance of construction BMPs.

The existing regulatory environment includes robust protections for water quality during construction activities. Although the proposed program would stimulate the construction of new facilities, the requirements of the Construction NPDES permit for each project would include implementation of measures to control on-site stormwater and protect water quality. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.10-2: Violate Any Water Quality Standards or Waste Discharge Requirements, Substantially Degrade Surface Water or Groundwater Quality, or Conflict with the Implementation of a Water Management Plan During Compositing Operations

Composting operations have the potential to degrade water quality with nutrients (e.g., nitrate), salinity (e.g., sodium chloride), pathogens, oxygen reducing materials, sediment, and other waste constituents (SWRCB 2022a). Without proper management, these compounds can be carried into surface waters or can leach into groundwater, causing water quality degradation. However, California regulates composting and other organic waste recovery operations through the issuance of waste discharge requirements, which include a suite of protections to ensure that stormwater and water generated by the composting process is managed in a manner that prevents degradation of surface water and groundwater. The SWRCB has found that if a composting operation is designed, operated, and maintained in compliance with applicable WDRs, potential impacts to water quality are anticipated to be **less than significant**.

Discussion

Composting typically results in release of water from the feedstock material as biological decomposition occurs. The released water becomes leachate and, if sufficient in volume, will drain from the compost pile. Compostable materials may contain plastics, chemicals, nutrients, metals, salts, pathogens, and oxygen-reducing compounds that can migrate with leachate or wastewater from these materials. Additionally, when composting of nutrient-rich feedstocks occurs on more permeable soil, leachate may enter groundwater and create elevated nitrate concentrations (SWRCB 2020).

Water evaporates from compost piles, in part because of the heat generated during biological decomposition. In response, water must be added to maintain appropriate moisture content and effective composting. The water may include wastewater collected in the detention pond or water from another water supply source.

Precipitation that falls on compost piles or water that is applied to the compost piles may result in leaching or runoff. These liquids may contain contaminants that can degrade water quality if they are allowed to migrate into groundwater or surface water.

The potential for adverse water quality effects from composting are addressed through the SWRCB NPDES program administered under the federal CWA and California's Porter-Cologne Act. Before 2015, potential discharges from composting operations in California were regulated through project-specific WDRs developed by the RWQCB with jurisdiction over the site. In 2015, SWRCB adopted General Waste Discharge Requirements for Composting Operations, Order WQ 2015-0121DWQ to efficiently support the redirection of organic waste from landfills to composting operations while providing requirements to protect water quality. This order was updated in 2020 (Composting General Order WQ 2020-0012-DWQ) to include the regulation of manure as a component of agricultural feedstock (SWRCB 2020).

The Composting General Order limits the types of feedstocks used and requires certain containment requirements to minimize infiltration. The Composting General Order use a two-tiered system based on feedstock and volume to differentiate between the water quality protections needed for low-risk and higher-risk facilities. Only certain low-threat feedstocks may be composted at Tier 1 facilities. Feedstocks allowed at Tier 1 facilities include agricultural materials, green materials, paper materials, vegetative food materials, anaerobic digestate, and residentially co-collected food and green materials. The Composting General Order requires the development and implementation of a groundwater protection monitoring plan for Tier 1 facilities that use manure as a feedstock. Feedstocks allowed at Tier 2 facilities include all the Tier 1 feedstocks, as well as nonvegetative food materials, biosolids, manure, and digestate from anaerobic digestion facilities.

The Composting General Order requires surface and groundwater quality to be maintained to protect beneficial uses. The following water quality protection measures are included in the Composting General Order's Prohibitions, Specifications, Design Construction and Operation Requirements – All Tiers, and Tier 2:

- Prohibit composting operations within 100 feet of the nearest surface water body or water supply well. A lesser setback distance may be allowed by the appropriate RWQCB if the Discharger can demonstrate that the groundwater, geologic, topographic, and well construction conditions at the site are adequate to protect water quality. Setbacks are included as a means of reducing pathogenic risks by coupling pathogen inactivation rates with groundwater travel time to a well or other potential exposure route (e.g., water contact activities). In general, a substantial unsaturated zone reduces pathogen survival compared to saturated soil conditions. Fine-grained (silt or clay) soil particles reduce the rate of groundwater transport and therefore are generally less likely to transport pathogens; coarse-grained soil particles or fracture-flow groundwater conditions may be more likely to transport pathogens. Setbacks also reduce the transport of other wastewater constituents through physical, chemical, and biological processes.
- Design and manage facilities to avoid contamination of runoff. The potential for piles of feedstocks, additives, amendments, or compost to become oversaturated and generate leachate must be minimized. In addition, areas used for receiving, processing, or storing composting materials must be designed to facilitate drainage, minimize ponding, reliably transmit liquid to a containment structure, and prevent conditions that can result in contamination, pollution, or nuisance. These areas must also be designed, constructed, and maintained to control and manage run-on and runoff and protect against inundation resulting from a 25-year, 24-hour peak storm event. Additionally, the Composting General

Order require containment of all feedstocks, additives, amendments, and compost that are exposed to precipitation or run-on.

- Design and operate detention ponds to contain and reuse wastewater. All detention ponds must comply with design, construction, and maintenance requirements in the Composting General Order. This includes requirements that ponds must be designed and certified by a registered professional engineer to have adequate capacity and structural integrity to hold wastewater and precipitation. At a minimum, detention pond, berm, and drainage conveyance systems must be designed to contain the 25-year, 24-hour peak storm event. All ponds must be managed to prevent breeding of mosquitos and generation of odors. Detention ponds constructed at Tier 2 facilities must also comply with a hydraulic conductivity standard to limit infiltration of liquids to the subsurface.
- Limit feedstock type and allowable volume. The amount and type of feedstocks composted, as well as site conditions such as depth to groundwater, percolation rate, and proximity to surface water and wells, inherently affect the threat to water quality. The Composting General Order employ a two-tiered approach to regulating composting operation based on the type and volume of feedstocks, additives, and amendments. Tier 1 facilities process only low-risk feedstocks in volumes less than 25,000 cubic yards per year and must comply with the groundwater separation and percolation rate requirements of the Composting General Order and have monitoring requirements if manure is part of the feedstock. Tier 2 operations must comply with additional design and construction requirements to further prevent leaching (e.g., low-permeability working surfaces, low permeability and lined detention ponds equipped with leak monitoring systems).
- Minimize infiltration of waste constituents on working surfaces. The most effective way to reduce or eliminate water quality impacts is to restrict infiltration of wastes on working surfaces (including receiving, processing, and storage areas). The Composting General Order requires working surfaces to be designed and constructed to be sloped to prevent ponding and to convey wastewater to an approved wastewater management system. Tier 2 facilities must also comply with a hydraulic conductivity standard to limit infiltration of liquids to the subsurface at working surfaces, drainage ditches, and detention ponds. For working surfaces at Tier 2 facilities, this may include the provision of a minimum of 1-foot-thick compacted soil, asphalt, Portland cement, or an equivalent engineered alternative subject to approval by the appropriate RWQCB.
- Perform monitoring to ensure BMPs are effective. Containment, control, and monitoring structures and systems must be maintained in good working order. To detect potential threats to water quality, detention ponds constructed at Tier 2 facilities must be constructed with a pan lysimeter monitoring device under the lowest point of the pond to provide assurance of the earliest possible detection of a release from the pond.
- The small and medium composting facilities and operations under the program would receive, process and store a maximum of 12,500 cubic yards of agricultural material, green material, vegetative food material, and food material feedstock at any one time. Based on the requirements of the Composting General Order, certain facilities/operations under the program may be found conditionally exempt (based on feedstock types and a limit of no more than 5,000 cy of finished compost sold or given away annually) from the order but would be required to implement the following BMPs. Materials and

activities on site must not cause, threaten to cause, or contribute to conditions of pollution, contamination, or nuisance;

- Activities shall be setback at least 100 feet from the nearest surface water body and/or the nearest water supply well;
- Dischargers must implement practices to minimize or eliminate the discharge of wastes that may adversely impact the quality or beneficial uses of waters of the state;
- Dischargers must manage the application of water (including from precipitation events) to reduce the generation of wastewater; and
- Working surfaces must be designed to prevent, to the greatest extent possible, ponding, infiltration, inundation, and erosion, notwithstanding precipitation events, equipment movement, and other aspects of the facility operations.

The following composting-related activities, which could be a component of facilities/operations under the program, are unlikely to degrade water quality and are therefore conditionally exempt from the Composting General Order. However, the RWQCBs may determine individual WDRs are appropriate under site-specific conditions. Composting operations may be subject to other federal, state, or local regulations.

- Chipping and grinding facilities: CalRecycle requires that chip and grind material not be on-site for more than 48 hours or up to seven days with local approval and that it not reach active composting temperatures. The time and temperature restrictions reduce the potential for materials to start composting, which in turn delays the biological decomposition of organic materials and the generation of leachate.
- In-vessel composting: Composting within a fully enclosed vessel with environmental controls for managing all wastewaters is also exempt. Anerobic digestion is the most common form of in-vessel composting; however, self-contained aerobic systems are sometimes used in urban environments.

The development and operation of potential small and medium composting facilities within California is regulated by the SWRCB and RWQCBs through various permits and WDRs to protect water quality. This approach includes a rigorous suite of requirements applicable to commercial composting facilities and operations for the management of stormwater and water generated by the composting process in a manner that prevents degradation of surface water and groundwater. Because these existing regulatory protections are in place, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.10-3: Substantial Decrease in Groundwater Supplies or Substantial Interference with Groundwater Recharge Such That the Project May Impede Sustainable Groundwater Management of the Basin

Organic waste composting facilities require water to maintain moisture levels, suppress dust, and sort solid waste. Water sources may include high-moisture feedstocks, stormwater, recycled water from facility wastewater ponds, municipal water supplies, and groundwater. Groundwater derived from areas overlying medium and high-priority basins, as defined by DWR, must be accounted for in groundwater sustainability plans prepared in compliance with SGMA. Therefore, due to compliance with SGMA, small and medium composting

facilities and operations developed as a part of the program would not be expected to substantially affect recharge or cause overdraft conditions, and this impact would be **less than significant.**

Discussion

The program would facilitate the construction and operation of new small and medium composting facilities operations that would generally range between 5 and 11 acres in size. Some of these facilities and operations could be co-located at existing solid waste-handling facilities or wastewater treatment plants. Others may be constructed as independent facilities at locations zoned to allow for the development of composting-related uses. The composting process requires the addition of water to maintain adequate moisture levels. Water sources may include high-moisture feedstocks, stormwater, recycled water from facility wastewater ponds, municipal water supplies, and groundwater. Groundwater is expected to be supplied by local providers, subject to SGMA requirements, rather than small on-site wells.

As discussed previously, DWR regularly assesses groundwater basins throughout the State. Groundwater sustainability plans must be developed and maintained for medium and high-priority basins, in compliance with SGMA (see Section 3.10.1 for more information). These plans must include various topics related to the management of groundwater, including groundwater levels; groundwater quality; historic and projected water demands and supplies; and existing and potential recharge areas. New composting facilities that derive water supplies from groundwater sources would be subject to SGMA, which requires careful management of groundwater supplies and recharge. Therefore, due to compliance with SGMA, the site-specific projects developed pursuant to the proposed program would not be expected to substantially affect recharge or cause overdraft conditions, and this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.10-4: Substantial Alteration of the Existing Drainage Pattern of the Site or Area

Organic waste composting facilities require impervious surfaces and specialized water drainage and collection systems to comply with SWRCB NPDES permits. Compliance with these existing regulatory protections would control site drainage and prevent new small and medium composting facilities from generating substantial amounts of erosion, causing on or off-site flooding, or creating substantial and unmanaged volumes of polluted runoff. Additionally, drainage at project sites would be reviewed through the local permitting process to ensure all federal, state and local requirements are met. Because these existing regulatory protections are in place, this impact would be **less than significant.**

Discussion

Composting facilities and operations require the creation of impervious surfaces and water drainage and collection systems to comply with required SWRCB NPDES and Composting General Order requirements.

Detailed information on these permits is presented in the discussions of Impacts 3.10-1 and 3.10-2. All new facilities would be required to manage stormwater and drainage in a way that prevents erosion and sedimentation, prevents contamination of runoff, captures stormwater to be processed through a detention pond, or demonstrates groundwater separation on-site sufficient to infiltrate contaminated stormwater.

Additionally, composting facility/operation stormwater detention ponds must be designed, constructed, and maintained to prevent overtopping and to accommodate all runoff from working surfaces during a 25-year, 24-hour storm event.

Compliance with existing protections included in the SWRCB NPDES permitting process and Composting General Order would control site drainage and prevent new composting facilities from generating substantial amounts of erosion, causing on or off-site flooding, or creating substantial and unmanaged volumes of polluted runoff. Additionally, drainage at project sites would be reviewed through the local permitting process to ensure all federal, state and local requirements are met. Because these existing regulatory protections are in place, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.10-5: Release of Pollutants as a Result of Project Inundation

Stockpiles of feedstock materials and other composting materials and facilities placed in floodplains or other areas are subject to inundation. Organic wastes and water from detention ponds could be carried with floodwaters, resulting in the release of nutrients and pollutants into state waters. The Composting General Order contains inundation prevention requirements for composting facilities and operations, and any facility or operation located within a 100-year floodplain may be subject to additional local land use restrictions and permits. Therefore, through compliance with existing regulations, this impact would be **less than significant**.

Discussion

Feedstock materials may contain plastics, chemicals, nutrients, metals, salts, pathogens, and oxygen-reducing compounds. Stockpiles of organic wastes, compost, and mulch placed in floodplains or other areas subject to inundation could be carried with floodwaters and release nutrients and pollutants into state waters. Additionally, stormwater detention ponds located in floodplains could be breached by flood events, discharging leachate and contaminated runoff.

The Composting General Order contains inundation prevention requirements for composting facilities located within 100-year floodplains and requires that facilities be located a minimum of 100 feet from any surface water. Additionally, any operations located in a 100-year floodplain may be subject to additional local land use restrictions and permits. Because existing regulations are in place to protect composting facilities from inundation by floodwaters and to prevent leaching of wastes if inundation does occur, the potential for the release of pollutants from inundation of a waste management site would be **less than significant**.

Mitigation Measures

No mitigation is required.

3.11 Land Use and Planning

This land-use analysis evaluates consistency of the program with applicable land-use plans and policies. The physical environmental effects associated with the program, many of which pertain to issues of land use compatibility (e.g., noise, aesthetics, air quality), are evaluated in other sections of Chapter 3 of this Draft EIR.

One comment letter regarding land use and planning was received in response to the Notice of Preparation. It requested identification of common land-use compatibility considerations and for the EIR to clarify the respective roles of local planning departments and local enforcement agencies (LEAs).

3.11.1 Regulatory Setting

Federal

No federal plans, policies, regulations, or laws related to land use are applicable to the project.

State

State Planning and Zoning Laws

Government Code Section 65300 et seq. establishes the obligation of cities and counties to adopt and implement general plans. A general plan is a comprehensive document focused on describing the framework for long-term physical development of a city or county and of any land outside its boundaries that, in the city's or county's judgment, bears relation to its planning. A general plan addresses a broad range of topics, including at a minimum land use, circulation, housing, conservation, open space, noise, and safety. In addressing these topics, the general plan identifies the goals, objectives, policies, principles, standards, and plan proposals that support the city's or county's vision for the area.

The State Planning and Zoning Law (California Government Code, Section 65800 et seq.) establishes that zoning ordinances, which are laws that define allowable land uses within a specific zone district, are required to be consistent with the general plan.

Subdivision Map Act

Government Code Section 66410 et seq., Subdivision Map Act (Map Act) establishes statewide requirements governing the subdivision of land in California and ensures that new parcels are created in a manner consistent with local planning, zoning, and infrastructure standards. The Map Act requires cities and counties to review and approve tentative and final maps, apply local ordinances and design standards, and impose conditions of approval to ensure adequate public services, access, drainage, utilities, and environmental protection. Through this process, local agencies evaluate whether proposed land divisions are compatible with surrounding land uses and consistent with adopted general plans and zoning regulations. The Map Act provides a regulatory framework that links land-use decisions to orderly development, ensuring that projects, including siting of small and medium composting facilities and operations, conform to local land-use policies, avoid conflicts with established patterns of development, and maintain consistency with community planning objectives.

Other State Regulations

When the state has land ownership or permitting authority with respect to natural resources or other state interests, land use decisions are governed by state agencies, such as the California Coastal Commission, California State Lands Commission, and California Department of Parks and Recreation.

Local

Given its statewide extent and the possible number of local and regional responsible agencies, this EIR does not identify individual, potentially applicable local government plans, policies, and ordinances. Types of local regulations relevant to land use and planning may include general plan policies and zoning ordinances. This EIR assumes that implementation of the program would be consistent with local plans, policies, and ordinances to the extent that development of small and medium composting facilities and operations under the program are subject to them, because local land use and permit approvals are typically conditioned upon such consistency.

3.11.2 Environmental Setting

California's land-use pattern is shaped by its diverse geography, long-established settlement patterns, and extensive regulatory framework governing development. The state contains a mix of dense urban centers, suburban communities, rural towns, agricultural valleys, industrial districts, transportation corridors, and large expanses of open space, rangeland, and conservation lands. Land uses vary substantially across regions, reflecting differences in climate, topography, economic activity, and local planning priorities.

Major statewide land-use categories include:

- Urban and suburban development, including residential neighborhoods, commercial corridors, business parks, and mixed-use districts.
- Industrial and logistics areas, often located near freeways, rail corridors, ports, or existing solid-waste facilities.
- Agricultural lands, including irrigated cropland, orchards, vineyards, pasture, and rangeland.
- Open space and conservation lands, including parks, preserves, watershed lands, and habitat reserves.
- Rural-urban interface zones, where agricultural operations, rural residences, and expanding infrastructure intermingle.

Existing composting facilities and operations are typically sited in industrial zones, existing solid waste processing facilities (e.g., landfills), rural working landscapes, or agricultural areas with compatible zoning.

These statewide land-use patterns influence where small and medium composting facilities and operations can reasonably be sited under the program. Although the program could be implemented anywhere in California, small and medium composting facilities and operations are generally located in areas already suitable for waste-management or agricultural operations. These include:

- Existing solid-waste facilities (transfer stations, material recovery facilities, landfills).
- Industrial parks or light-industrial districts.
- Agricultural lands and working landscapes.
- Rural parcels with compatible zoning.
- Public-agency-owned lands used for maintenance, operations, or resource management.

These locations typically exhibit a functional, utilitarian land-use character, shaped by built infrastructure, equipment, access roads, and operational features. Facilities and operations are rarely located within or adjacent to sensitive land-use designations such as historic districts, scenic corridors, or high-density residential

neighborhoods. Instead, they are commonly buffered by agricultural fields, rangelands, industrial parcels, or other working landscapes.

3.11.3 Environmental Impacts and Mitigation Measures

Methodology

This analysis of environmental impacts on land use reviews the potential for the physical division of an established community or significant environmental impacts from conflicts with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Qualitative methods were used to assess the impact of developing small and medium composting facilities and operations on these factors relating to land use.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the program would result in a potentially significant impact on land use and planning if it would:

- Physically divide an established community; or
- Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Issues Not Discussed Further

Small and medium composting facilities and operations developed under this program could be located near communities and cities; however, they would be typically located in areas of compatible land use; that is, areas that are already zoned for industrial or solid waste-handling uses. Some of these facilities and operations would likely be co-located within existing waste management sites, while others may be located on undeveloped sites contiguous to sites with similar land uses. The proposed small and medium composting facilities and operations are also relatively small in size (5 to 11 acres). Therefore, these new facilities/operations would not result in construction of physical barriers that would change the connectivity between portions of a community or city or physically divide an established community. This issue is not evaluated further.

Environmental Impacts and Mitigation Measures

Impact 3.11-1: Conflict with a Land Use Plan, Policy, or Regulation Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect

The program would facilitate the review and permitting of small and medium composting facilities and operations on lands owned and managed by various entities, including private landowners, cities, counties, and state agencies. In general, facilities/operations would be developed by private or local entities and would therefore be subject to local plans (e.g., general plans), policies, and ordinances, and project proponents would design and develop facilities and operations in a manner consistent with them, as applicable. Furthermore, the environmental impacts of the proposed regulation are addressed throughout this EIR, and mitigation is identified to reduce significant effects, thereby avoiding a conflict with a land use plan, policy, or regulation that was adopted for the purpose of avoiding or mitigating an environmental effect. This impact would be **less than significant**.

Discussion

Although under the program the composting facilities and operations could be sited in locations throughout California, new small and medium facilities and operations would generally be located in areas already zoned and planned for compatible uses, such as existing solid-waste facilities, industrial parks, and agricultural working landscapes. These siting patterns reflect the broader statewide land-use framework in which cities and counties regulate development through general plans, zoning ordinances, and project-level approvals. General plans establish long-term land-use designations and community development objectives, while zoning ordinances serve as the primary regulatory tool governing allowable uses, development standards, and site-specific compatibility. When reviewing proposals for new composting facilities and operations, local agencies must also comply with CEQA, which requires evaluation of potential environmental impacts and adoption of feasible mitigation measures where significant effects may occur. Development of small and medium composting facilities and operations would occur within the existing land-use framework administered by cities, counties, and special districts. These facilities and operations are typically sited in areas already planned and zoned for compatible uses, such as industrial districts, solid-waste handling sites, agricultural working landscapes, or rural parcels with appropriate zoning.

Local agency departments would consider small and medium composting facilities and operations at the time of submittal of a development application or other locally-designated process for consideration of development. Local jurisdictions apply general plan policies, zoning ordinances, and development standards to ensure that new facilities and operations are consistent with surrounding land uses and do not conflict with adopted land-use plans or environmental protection policies. Upon completion of preliminary review of the project by the local agency, an approach for coordination with other agencies, including the LEA and other responsible agencies (e.g., CalRecycle), would be developed by the project proponent. This may include coordination with the local agency department to ensure that the initial project review is consistent with the expectations/requirements for subsequent approvals. Although composting facilities and operations would require multiple permits, the local land-use entitlement and CEQA review process generally represents the most time-intensive step and must be completed before state-level approvals can be issued.

Even when a small or medium composting facility/operation may qualify for ministerial approval or a CEQA exemption, both the proponent and the local jurisdiction must understand all applicable permitting requirements to ensure the project is designed in a manner consistent with local plans, policies, and ordinances. Early review of zoning designations, municipal code provisions, and application materials, combined with proactive identification of likely environmental considerations such as air quality, traffic, hydrology/water quality, and cultural resources, helps reduce the need for later revisions and supports a streamlined approval process. Engaging local staff, elected officials, and community stakeholders can further facilitate consistency with local land-use expectations and avoid conflicts during project-level review. As required by SB 1046, this EIR is intended to provide a tool by which the expectations for small and medium composting facilities and operations can be more uniformly applied at the beginning of the process so as to facilitate permitting.

Project proponents would be required to obtain local land use permits, which requires coordinating with the local land-use authority to ensure the project is designed in a manner consistent with applicable land-use plans, policies, and regulatory requirements. This coordination would include:

- Identifying potential environmental impacts early in project development and refining project components to avoid or minimize those impacts to the extent feasible.

- Determining the need for technical studies typically associated with composting facilities/operations, such as air quality, traffic, hydrology/water quality, and cultural resources, and incorporating their findings into project design.
- Reviewing zoning designations, municipal code provisions, and local application materials to confirm the appropriate permitting pathway and ensure the project conforms to local land-use expectations.
- Engaging with local planning staff, elected officials, and key stakeholders, as appropriate, to support community compatibility and facilitate the local review process.

Facilities and operations would be constructed and operated in different locations throughout the state, within jurisdictions that retain full authority over land-use approvals, zoning consistency, and project-level conditions of approval, none of which fall under CalRecycle's regulatory authority. Because each jurisdiction applies its own general plan policies, zoning ordinances, and development standards, CalRecycle cannot ensure that all future facilities developed under the program would uniformly avoid conflicts with locally adopted land-use plans, policies, or regulations intended to mitigate environmental effects. However, projects would be required to obtain local land use permits, which would require consistency with local plans, policies, and ordinances as well as compliance with CEQA. Environmental effects from implementation of small or medium compositing facilities are evaluated in this EIR and, where required, mitigation measures are identified to avoid or reduce impacts and ensure consistency with applicable land use plans, policies, and regulations. Therefore, construction and operation of new composting facilities would not conflict with applicable land-use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. This impact would be less than significant.

Mitigation Measures

No mitigation is required.

3.12 Noise and Vibration

This section includes a summary of applicable regulations related to noise and vibration, and an analysis of potential short-term construction and long-term operational-source noise impacts associated with implementation of the project. Mitigation measures are recommended as necessary to reduce significant noise impacts. Additional data is provided in Appendix E (Noise and Vibration Impact Study).

One comment letter regarding noise was received in response to the Notice of Preparation. The comment requested that the EIR outline general operating practices such as limiting noisy activities to certain hours or maintaining distance from nearby sensitive receptors.

3.12.1 Terminology

- **A-Weighted Decibels (dBA):** Noise levels are commonly reported in decibels using the A-weighted decibel scale (dBA), which expresses the relative loudness of sounds as perceived by human ears. When people make judgments of the relative loudness or annoyance of a sound, their judgments correlate well with the A-weighted levels of those sounds.
- **Equivalent Continuous Sound Level (L_{eq}):** L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound level that occurs during the same period (Caltrans 2013:2-48). For instance, the 1-hour equivalent sound level, also referred to as the hourly L_{eq}, is the energy average of sound levels occurring during a 1-hour period and is the basis for noise abatement criteria used by the California Department of Transportation (Caltrans) and Federal Transit Administration (FTA) (Caltrans 2013:2-47, FTA 2018:210).
- **Maximum Sound Level (L_{max}):** L_{max} is the highest instantaneous sound level measured during a specified period (Caltrans 2013:2-48; FTA 2018:207).
- **Day-Night Level (L_{dn}):** L_{dn} is the energy average of A-weighted sound levels occurring over a 24-hour period, with a 10dBA "penalty" applied to sound occurring between 10 p.m. and 7 a.m. (Caltrans 2013:2-48, FTA 2018:214).
- **Community Noise Equivalent Level (CNEL):** CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10-dBA penalty applied to sound occurring between 10 p.m. and 7 a.m. and a 5-dBA penalty applied to sound occurring between 7 p.m. and 10 p.m., to account for added human sensitivity to noise during these periods (Caltrans 2013:2-48).
- **Vibration Decibels (VdB):** VdB is the vibration velocity level in decibel scale (FTA 2018: 110).
- **Peak Particle Velocity (PPV):** PPV is the peak signal value of an oscillating vibration waveform, usually expressed in inches/second (FTA 2018:110).

3.12.2 Regulatory Setting

Federal

Federal Transit Administration

To address the human response to ground vibration, the FTA has set forth guidelines for maximum acceptable vibration criteria for different types of land uses. These guidelines are presented in Table 3.12-1 (FTA 2018:126). Building damage can be cosmetic or structural. The FTA also establishes vibration criteria for building damage, as shown in Table 3.12-2 (FTA 2018:186).

Table 3.12-1. Groundborne Vibration Impact Criteria for General Assessment for Human Response

Land Use Category	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]
Category 1: Buildings where vibration would interfere with interior operations.[4]	65 VdB	65 VdB	65 VdB
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime uses.	75 VdB	78 VdB	83 VdB

Notes: VdB = vibration decibels referenced to 1 µ inch/second and based on the root mean square (RMS) velocity amplitude.
[1] "Frequent Events" is defined as more than 70 vibration events of the same source per day.
[2] "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.
[3] "Infrequent Events" is defined as fewer than 30 vibration events of the same source per day.
[4] This criterion is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research would require detailed evaluation to define acceptable vibration levels.
Source: FTA 2018: 126

Table 3.12-2. Groundborne Vibration Building Damage Criteria

Building/Structural Category	Peak Particle Velocity (inch/second)
I. Reinforced-concrete, steel or timber (no plaster).	0.5
II. Engineered concrete and masonry (no plaster).	0.3
III. Non-engineered timber and masonry buildings.	0.2
IV. Buildings extremely susceptible to vibration damage.	0.12

Source: FTA 2018:186

In addition to vibration criteria, FTA has established construction noise criteria based on the land use type affected by noise and depending on whether construction noise would occur during the daytime or nighttime. The FTA criteria are as follows:

- Residential: 80 dBA L_{eq} (day) and 70 dBA L_{eq} (night);
- Commercial: 85 dBA L_{eq} (day and night); and
- Industrial: 90 dBA L_{eq} (day and night) (FTA 2018:179).

State

California General Plan Guidelines

The State of California General Plan Guidelines 2017, published by the California Governor's Office of Land Use and Climate Innovation (LCI), provides guidance for the compatibility of projects within areas of specific noise exposure. Acceptable and unacceptable community noise exposure limits for various land use categories have been determined to help guide new land use decisions in California communities. In many local jurisdictions, these guidelines are used to derive local noise standards and guidance. The noise exposure ranges presented in these guidelines are intended for land use planning and compatibility evaluations and are not CEQA significance thresholds; therefore, they are not used in this EIR to determine the significance of project-related noise impacts. Table 3.12-3 presents the State of California Land Use Compatibility for Community Noise Environments.

Table 3.12-3. Land Use Compatibility for Community Noise Exposure (L_{dn} or CNEL, dBA)

Land Use Category	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential – Low Density, Single Family, Duplex, Mobile Homes	50 – 60	55 – 70	70 – 75	75 – 85
Residential – Multiple Family	50 – 65	60 – 70	70 – 75	70 – 85
Transient Lodging – Motel, Hotels	50 – 65	60 – 70	70 – 80	80 – 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 – 70	60 – 70	70 – 80	80 – 85
Auditoriums, Concert Halls, Amphitheaters	N/A	50 – 70	N/A	65 – 85
Sports Arenas, Outdoor Spectator Sports	N/A	50 – 75	N/A	70 – 85
Playgrounds, Neighborhood Parks	50 – 70	N/A	65 – 75	75 – 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 – 70	N/A	70 – 80	80 – 85
Office Buildings, Business Commercial and Professional	50 – 70	65 – 75	75 – 85	N/A
Industrial, Manufacturing, Utilities, Agriculture	50 – 75	70 – 80	75 – 85	N/A

Source: California Governor's OPR 2017:374.

California Department of Transportation

In 2020, Caltrans published the Transportation and Construction Vibration Manual (Caltrans 2020). The manual provides general guidance on vibration issues associated with construction and operation of projects in relation to human perception and structural damage. Table 3.12-4 presents recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration (Caltrans 2020:24-25) and Table 3.12-5 presents the human response to different levels of ground-borne vibration and noise (Caltrans 2020:22).

Table 3.12-4. Caltrans Recommendations Regarding Levels of Vibration Exposure

Peak Particle Velocity (in/sec)	Effect on Buildings
0.4 – 0.6	Architectural damage and possible minor structural damage
0.2	Risk of architectural damage to normal dwelling houses
0.1	Virtually no risk of architectural damage to normal buildings
0.08	Recommended upper limit of vibration to which ruins and ancient monuments should be subjected
0.006 – 0.019	Vibration unlikely to cause damage of any type

Notes: in/sec = inches per second
Source: Caltrans 2020:24-25.

Table 3.12-5. Caltrans Groundborne Vibration Criteria for Human Response

Human Response	Peak Particle Velocity (inch/second)
Unpleasant	0.4 – 0.6
Annoying	0.2
Begins to Annoy	0.1
Readily Perceptible	0.08
Threshold of Perception	0.006 – 0.019

Source: Caltrans 2020, pg. 22.

Local

Given its statewide extent and the possible number of local and regional responsible agencies, this EIR does not identify individual, potentially applicable local government plans, policies, and ordinances. Local jurisdictions throughout California commonly regulate noise through General Plan Noise Elements and municipal noise ordinances that establish land use compatibility criteria, exterior and interior noise standards for sensitive land uses, restrictions on construction hours, and limits on operational noise levels. This EIR assumes that implementation of the program would be consistent with local plans, policies, and ordinances to the extent that development of small and medium composting facilities and operations under the program are subject to them, because local land use and permit approvals are typically conditioned upon such consistency.

3.12.3 Environmental Setting

Noise and Vibration Fundamentals

Sound, Noise, and Acoustics

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a human ear. Noise is defined as loud, unexpected, annoying, or unwanted sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between them. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determine the sound level and characteristics of the sound perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Frequency and Amplitude

Continuous sound can be described by frequency and amplitude. A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz, or thousands of hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Commonly, a logarithmic scale is used to describe sound pressure level (SPL) in terms of dB.

Calculation of Combined Noise Levels

Because decibels are logarithmic units, SPLs cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness at the same time, the resulting sound level at a given distance would be 3 dB higher than if only one of the sound sources was producing the sound. For example, if one idling truck generates an SPL of 70 dB, two trucks idling simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together produce a sound level approximately 5 dB louder than one source.

A-Weighted Decibels

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in both frequency and SPL ranges. In general, people are most sensitive to the frequency range of 1,000 – 8,000 Hz and perceive sounds within this range better than sounds of the same amplitude with frequencies outside of this range. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies. Then, an "A-weighted" sound level (expressed in units of dBA) can be computed based on this information.

When people make judgments of the relative loudness or annoyance of a sound, their judgment correlates well with the dBA levels of those sounds. Thus, noise levels are typically reported in terms of dBA. All sound levels

discussed in this section are expressed in A-weighted decibels. Table 3.12-6 describes typical A-weighted noise levels for various noise sources.

Table 3.12-6. Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1,000 feet	— 100 —	
Gas lawn mower at 3 feet	— 90 —	
Diesel truck at 50 feet at 50 miles per hour	— 80 —	Food blender at 3 feet, Garbage disposal at 3 feet
Noisy urban area, daytime, Gas lawn mower at 100 feet	— 70 —	Vacuum cleaner at 10 feet, Normal speech at 3 feet
Commercial area, Heavy traffic at 300 feet	— 60 —	
Quiet urban daytime	— 50 —	Large business office, Dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime	— 30 —	Library, Bedroom at night
Quiet rural nighttime	— 20 —	
	— 10 —	Broadcast/recording studio
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans 2013:2-20

Human Response to Changes in Noise Levels

The doubling of sound energy results in a 3-dB increase in the sound level. However, the subjective human perception of a doubling of loudness will usually be different from what is measured using precise instrumentation.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear can discern 1-dB changes in sound levels when exposed to steady, single-frequency (“pure-tone”) signals in the mid-frequency (1,000 – 8,000 Hz) range. In general, the healthy human ear is most sensitive to sounds between 1,000 and 5,000 Hz and perceives both higher and lower frequency sounds of the same magnitude with less intensity (Caltrans 2013:2-18). In typical noisy environments, changes in noise of 1 – 2 dB are generally not perceptible. However, it is widely accepted that people can begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness (Caltrans 2013:2-10). Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3-dB increase in sound would generally be perceived as barely detectable.

Sound Propagation

When sound propagates over a distance, it changes in level and frequency content. The manner in which a noise level decreases with distance depends on the following factors:

Geometric Spreading and Distance Attenuation

Sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Roads and highways consist of several localized noise sources on a defined path and hence can be treated as a line source, which approximates the effect of several point sources, thus propagating at a slower rate in comparison to a point source. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source.

Additional Attenuation Due to Ground Absorption

The propagation path of noise from a source to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective-wave canceling provides additional attenuation associated with geometric spreading. Traditionally, this additional attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 feet. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), a ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the attenuate rate associated with cylindrical spreading, the additional ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance. This would hold true for point sources, resulting in an overall drop-off rate of up to 7.5 dB per doubling of distance.

Atmospheric Effects

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels, as wind can carry sound. Sound levels can be increased over large distances (e.g., more than 500 feet) from the source because of atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also affect sound attenuation.

Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receiver attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dBA of noise reduction (Caltrans 2013:2-41; FTA 2018:16). Barriers higher than the line of sight provide increased noise reduction (FTA 2018:16). Vegetation between the source and receiver is rarely effective in reducing noise because it does not create a solid barrier unless there are multiple rows of vegetation (FTA 2018:106).

Vibration

Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Sources of vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, (e.g., operating factory machinery) or transient in nature (e.g., explosions). Vibration levels can be depicted in terms of amplitude and frequency, relative to displacement, velocity, or acceleration.

Vibration amplitudes are commonly expressed in PPV or RMS vibration velocity. PPV and RMS vibration velocity are normally described in inches per second (in/sec) or in millimeters per second. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is typically used in the monitoring of transient and impact vibration and has been found to correlate well to the stresses experienced by buildings(FTA 2018:110, Caltrans 2020:6). Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a 1-second period. As with airborne sound, the RMS velocity is often expressed in decibel notation as VdB, which serves to compress the range of numbers required to describe vibration (Caltrans 2020:7). This is based on a reference value of 1 micro inch per second.

The typical background vibration-velocity level in residential areas is approximately 50 VdB. Ground vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (Caltrans 2020:27).

Typical outdoor sources of perceptible ground vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur to fragile buildings. Construction activities can generate sufficient ground vibrations to pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants (Caltrans 2020:25).

Vibrations generated by construction activity can be transient, random, or continuous. Transient construction vibrations are generated by blasting, impact pile driving, and wrecking balls. Continuous vibrations are generated by vibratory pile drivers, large pumps, and compressors. Random vibration can result from jackhammers, pavement breakers, and heavy construction equipment.

The general human response to different ground vibration-velocity levels is shown in Table 3.12-2.

Existing Noise- and Vibration-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels, and because of the potential for nighttime noise to result in sleep disruption. Additional land uses such as schools, hospitals, nursing houses, assisted living facilities, and places of worship are also generally considered sensitive to increases in noise levels. These land use types are also considered vibration-sensitive land uses in addition to commercial and industrial buildings

where vibration would interfere with operations within the building, including levels that may be well below those associated with human annoyance, as well as historic buildings and structures that may be particularly susceptible to vibration-related damage.

Because specific facility locations have not been identified, the location of future sensitive receptors relative to individual composting facilities and operations cannot be determined at this time. Therefore, the noise analysis was conducted using representative sensitive receptor distances to evaluate potential construction and operational noise impacts. Future facilities developed under the program may require site-specific noise analyses to evaluate impacts on nearby sensitive receptors and compliance with applicable local noise standards

Existing Noise Sources and Ambient Levels

Existing ambient noise levels throughout California vary depending on land use, population density, transportation infrastructure, and other local conditions. Common sources of environmental noise include vehicular traffic on local roads and highways, rail operations, aircraft overflights, industrial and commercial activities, agricultural operations, construction activities, and mechanical equipment associated with utilities and buildings. In urban and developed areas, transportation is typically the dominant source of ambient noise, whereas in rural and agricultural areas ambient noise levels are generally lower, with intermittent noise generated by agricultural operations, roadway traffic, and equipment use.

Because the specific locations of future composting facilities and operations developed under the program are unknown, existing ambient noise levels cannot be characterized for a particular project site.

3.12.4 Environmental Impacts and Mitigation Measures

Methodology

Construction Noise and Vibration

To assess potential short-term (construction-related) noise and vibration impacts, sensitive receptors and their relative exposures were identified. Project-generated construction source noise and vibration levels were determined based on methodologies, reference emission levels, and usage factors from FTA's *Guide on Transit Noise and Vibration Impact Assessment* methodology (FTA 2018) and the Federal Highway Administration's (FHWA's) *Roadway Construction Noise Model User's Guide* (FHWA 2006). Reference levels for noise and vibration emissions for specific equipment or activity types are well documented and their usage is common practice in the field of acoustics.

Operational Noise and Vibration

The evaluation of project-related traffic noise is based on established FHWA principles for assessing roadway noise. FHWA Traffic Noise Model identifies traffic volume, vehicle mix, vehicle speeds, and the distance between roadways and receptors as the primary factors influencing traffic noise levels (FHWA 2021:29-32). As part of this methodology, FHWA guidance indicates that traffic noise levels increase logarithmically, such that a doubling of traffic volumes is generally required to result in an approximately 3-dBA increase in noise levels, which represents the minimum change that may be perceptible to the human ear (FHWA 2011:9-10). This relationship is commonly used in qualitative traffic noise assessments to evaluate the potential for project-related changes in traffic conditions to result in noticeable increases in ambient noise levels.

The inverse square law was used to estimate SPLs of on-site noise sources at the nearest sensitive receptor. To determine the sound attenuation over a distance using the inverse square law, an idealization needs to be made in which there are no reflective surfaces or barriers between the source and the location at which the sound level is being determined. According to the inverse square law, it can be shown that for each doubling of distance from a point source, the SPL decreases by approximately 6 dB.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the program would result in a potentially significant impact related to noise if it would generate:

- Construction-generated noise levels in excess of FTA's construction noise criteria for residential, commercial, and industrial land uses of 80 dBA, 85 dBA, and 90 dBA L_{eq}, during the day, respectively (FTA 2018:179).
- Long-term, traffic-generated noise levels that result in an approximately 3-dBA increase in noise levels, which represents the minimum change that may be perceptible to the human ear (DOT FHWA 2011:9-10).
- Long-term noise levels generated by stationary or area sources that exceeds 60 dBA L_{eq} at any sensitive land use property boundary, or results in a perceptible (i.e., 3 dBA) increase over existing ambient noise conditions.
- Construction-generated continuous vibration levels exceeding FTA and Caltrans' vibration standard of 0.2 inches/second (Caltrans 2020:22, 24-25, FTA 2018:186).
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.
- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

Issues Not Discussed Further

No issues related to noise and vibration are dismissed from further analysis.

Environmental Impacts and Mitigation Measures

Impact 3.12-1: Short-Term Construction Noise

Construction noise generated by development of representative small and medium composting facilities and operations would occur during daytime hours, be temporary in nature, and cease upon completion of construction activities. Construction noise would occur during the less noise sensitive hours of the day, within the allowable hours of construction as permitted by local noise ordinances and remain below the FTA screening-level significance threshold of 80 dBA. Therefore, construction noise impacts would be **less than significant**.

Discussion

During construction of small and medium composting facilities and operations under the program, heavy equipment would be used on a given site to prepare the site for use and operation as a composting facility/operation. Construction noise levels would fluctuate depending on the particular type, number, size, and

duration of usage for the varying equipment. The effects of construction noise largely depend on the type of construction activities occurring on any given day, noise levels generated by those activities, distances to noise sensitive receptors, and the existing ambient noise environment in the receptor's vicinity. Construction generally occurs in several discrete stages, each phase requiring a specific complement of equipment with varying equipment type, quantity, and intensity. These variations in the operational characteristics of the equipment change the effect they have on the noise environment at a given project site and in the surrounding community for the duration of the construction process.

To assess noise levels associated with the various equipment types and operations, construction equipment can be considered to operate in two modes, mobile and stationary. Mobile equipment sources move around a construction site performing repetitive tasks (e.g., loaders, graders, dozers). Stationary equipment operates in a given location for an extended period of time to perform continuous or periodic tasks. Heavy construction equipment is typically operated at full power for short periods and at lower power, idling, or powered-off conditions for extended periods.

Additionally, when construction-related noise levels are being evaluated, activities that occur during the more noise-sensitive evening and nighttime hours are of increased concern. Because exterior ambient noise levels typically decrease during the late evening and nighttime hours as traffic volumes and commercial activities decrease, construction activities performed during these more noise-sensitive periods of the day can result in increased annoyance and potential sleep disruption for occupants of nearby residential uses.

The site preparation phase typically generates the most substantial noise levels because of the on-site equipment associated with grading, compacting, and excavation. These activities use the noisiest types of construction equipment. Site preparation equipment includes backhoes, bulldozers, loaders, and excavation equipment (e.g., graders and scrapers). Construction of larger structural elements and mechanical systems could require the use of a crane for placement and assembly tasks, which may also increase noise levels. Although a detailed construction equipment list is not available for the types of facilities that would be constructed with implementation of the proposed regulation, based on the types of facilities that could be constructed it is expected that the primary sources of noise would include backhoes, bulldozers, and excavators. Noise emission levels from typical types of construction equipment at full operation can range from approximately 74 to 94 dB at a distance of 50 feet between source and receptor. Based on the conditions within which small and medium composting facilities and operations would likely be developed (e.g., taking into consideration likely siting factors for air quality and land use compatibility), it is considered unlikely that facilities would be sited closer than 50 meters (i.e., 165 feet) from nearby receptors. As shown in Table 3.12-7 and taking the aforementioned assumption into consideration, construction noise associated with small and medium composting facilities and operations would not exceed established thresholds.

Table 3.12-7. Estimated Construction Noise Levels at a Representative Sensitive Receptor

Construction Phase	Small Facility Scenario Modeled Noise Level[1] (dBA L_{eq})	Medium Facility Scenario Modeled Noise Level[1] (dBA L_{eq})	Significance Threshold[2] (dBA L_{eq})	Exceeds Threshold? (Yes/No)
Site Preparation	76	76	80	No
Grading	76	79	80	No
Building Construction	74	74	80	No
Paving	78	78	80	No
Architectural Coating	66	66	80	No

Notes: 1) Estimated using FHWA Roadway Construction Noise Model methodology and CalEEMod construction activity data (FHWA 2006).
2) FTA construction noise criterion of 80 dBA L_{eq} at residential receptors (FTA 2018:179).
Source: Yorke Engineering 2026 (Appendix E).

Construction of small and medium composting facilities and operations would also likely occur within normal construction hours (8 a.m. to 5 p.m.) which are generally considered to be the less noise sensitive hours of the day and are unlikely to result in disturbance and/or substantial noise at nearby receptors. Further, construction activities be subject to local rules and ordinances regarding the days and times within which construction may occur, further ensuring that substantial temporary increases in noise levels during construction would not occur. As a result, construction noise impacts would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.12-2: Long-Term Operations Noise

The operation of new small and medium composting facilities and operations would generate ongoing noise associated with these facilities. Based on noise emissions levels from typical types of equipment used during the operation of organic waste recovery facilities and accounting for typical usage factors of individual pieces of equipment and attenuation, the operation of these facilities could result in noise that exceeds noise standards established in local general plans and noise ordinances or that is substantially greater than the ambient noise environment. Thus, operation of small and medium composting facilities and operations under the program could result in the generation of long-term operational noise in excess of applicable standards or result in a substantial increase in ambient noise levels at nearby sensitive receptors, and exposure to excessive vibration levels. This impact would be **potentially significant**.

Discussion

Vehicle activity associated with facility operations includes employee and light-duty commercial vehicle trips, tractor trailer trips, and fuel truck deliveries. Small operations would generate approximately 52 daily vehicle trips, and medium-sized facilities would generate approximately 110 daily vehicle trips. In general, a doubling of traffic volume is required to increase noise levels by approximately 3 dBA, which is considered the minimum change that may be perceptible to people. Operational traffic associated with facility employees, feedstock deliveries, compost shipment, and support vehicles would represent a relatively minor increase in roadway

traffic. Because future facility locations and haul routes are unknown, the distribution of operational truck traffic on specific roadway segments cannot be determined at the program level. Future facilities may also be subject to site-specific traffic studies during local permitting to evaluate roadway, intersection, and haul route conditions, and identify any necessary mitigation measures. While operational traffic noise impacts would generally be expected to be less than significant, the potential for significant traffic noise impacts cannot be precluded for all future facilities and operations under the program as some facilities would be located in more rural areas where vehicle traffic is infrequent.

On-site operational noise would be generated by compost processing, material handling, screening, grinding, and associated facility activities and has the potential to result in significant impacts at nearby sensitive receptors, depending on the distance between source and receptor. As shown in Table 3.12-8, operational noise levels would not exceed the representative daytime residential threshold of 60 dBA L_{eq} at distances of approximately 2,000 feet and beyond from routine facility/operation activities. Facilities located within 2,000 feet of a sensitive receptor may require project-specific noise impact analyses and implementation of noise attenuation measures to ensure that noise levels remain below 60 dBA L_{eq}. As such, impacts would be considered **potentially significant**.

Table 3.12-8. Estimated Operational Noise Levels (L_{eq}) at Nearest Sensitive Receptor

Facility/Operation Size	50 m (164 ft)	100 m (328 ft)	200 m (656 ft)	500 m (1,640 ft)	610 m (2,000 ft)
Small	81 dBA	75 dBA	69 dBA	61 dBA	59 dBA
Medium	82 dBA	76 dBA	70 dBA	62 dBA	60 dBA
Representative Daytime Sensitive Receptor Noise Threshold[1]	60 dBA	60 dBA	60 dBA	60 dBA	60 dBA
Exceeds Threshold?	Yes	Yes	Yes	Yes	No

Note: A daytime noise level of 60 dBA is presented as a screening threshold because it is commonly used by cities and counties for evaluating operational noise at residential receptors. Actual applicable noise standards may vary by jurisdiction and should be verified during Project-level environmental review.
Source: Yorke Engineering 2026 (Appendix E).

Mitigation Measures

Mitigation Measure 3.12-2a: Conduct a Project-Specific Traffic Impact Analysis and Implement Recommended Measures

For future facilities that have the potential to substantially increase traffic volumes on roadways serving noise-sensitive land uses, the project proponent shall prepare and submit a project-specific traffic impact analysis to the local lead agency during project planning and review. The analysis shall evaluate project-specific traffic generation on affected roadway segments and identify whether design considerations/measures are necessary. Transportation-related considerations/measures shall be subject to local agency requirements and ordinances and may include haul route modifications, restrictions on truck operating hours, or other measures intended to reduce transportation-related impacts. Upon local lead agency approval of the traffic impact analysis, all considerations/measures identified therein shall be incorporated into the project and implemented.

Mitigation Measure 3.12-2b: Conduct a Site-Specific Operational Noise Analysis and Implement Required Noise Measures

For facilities located within 2,000 feet of a sensitive receptor, the project proponent shall prepare a site-specific noise impact analysis during project planning. The analysis shall be submitted to the local agency for review and approval prior to approval of local land use entitlements for the project. The analysis shall evaluate operational noise levels at nearby sensitive receptors and identify feasible measures necessary to achieve compliance with applicable local noise standards as determined by the local agency. Such measures may include, but are not limited to:

- Maintaining all powered equipment in accordance with manufacturer specifications;
- Public notice of activities shall be provided to nearby sensitive receptors of potential noise-generating activities;
- All motorized equipment shall be shut down when not in use;
- Locating stationary noise-generating equipment as far as practicable from nearby sensitive receptors;
- Using existing buildings, stockpiles, berms, or topographic features to provide noise shielding;
- Installing sound walls, acoustic barriers, earthen berms, shipping-container walls, or similar acoustical shielding measures;
- Providing additional setbacks from nearby sensitive receptors;
- Implementing alternative measures demonstrated by a qualified acoustical consultant to achieve compliance with applicable local noise standards; and/or
- To achieve an interior noise level consistent with applicable noise standards, the installation of double pane windows and building insulation shall be offered to residences subject to operational noise levels generated by the noise-generating facility in excess of acceptable noise standards of the local agency. If accepted by the homeowner, the project applicant shall provide the funding necessary to install the appropriate noise-reducing building improvements.

Any measures identified in the site-specific noise analysis and determined to be necessary to achieve compliance with applicable local noise standards shall be implemented as part of the project.

Significance after Mitigation

It is reasonable to expect that project-specific traffic and noise impact analyses and associated conditions of approval would reduce operational noise impacts to a less-than-significant level. However, because future facility locations, receptor distances, and the specific noise attenuation measures that may be required are unknown at the program level, the degree to which such measures would be required, and their effectiveness, cannot be determined at this time. Therefore, for CEQA compliance purposes, operational noise impacts are conservatively considered **potentially significant and unavoidable**.

Impact 3.12-3: Generate Substantial Vibration During Construction and Operation

Project construction could result in short-term vibration from the use of heavy-duty equipment. However, construction vibration levels would not exceed applicable thresholds, based on the types of construction equipment that are likely to be used during the construction of small and medium composting facilities and

operations. Because construction vibration levels would not exceed applicable thresholds, this impact would be **less than significant.**

Discussion

Construction activity can result in varying degrees of ground-borne vibration, depending on the equipment and methods employed. As shown in Table 3.12-9, vibration levels at the nearest off-site structure would not exceed the screening-level significance threshold of 0.2 inches/second PPV (Yorke Engineering 2026). In addition, high-vibration construction equipment, such as pile drivers, is not anticipated to be used during construction of the representative facility scenarios. Therefore, construction-related vibration impacts would be **less than significant**.

Table 3.12-9. Estimated Peak Activity Daytime Vibration Levels

Equipment	PPV (inches/second) at 50 ft	Exceeds Threshold?[1] (Yes/No)
Clam Shovel	0.07	No
Hydromill (In Soil)	< 0.01	No
Vibratory Roller/Compactor	0.07	No
Hoe Ram/Hydraulic Breaker	0.03	No
Large Bulldozer/Crawler Tractor	0.03	No
Caisson Drilling/Boring	0.03	No
Loaded Dump Trucks	0.03	No
Jackhammer (Pneumatic)	0.01	No
Small Bulldozer/Excavator/Backhoe	< 0.01	No

Note: A screening-level vibration significance threshold of 0.2 inches/second PPV was used to evaluate potential building damage and human annoyance impacts.
Source: Yorke Engineering 2026 (Appendix E).

The operations phase of small and medium composting facilities and operations is not anticipated to involve substantial sources of vibration due to the nature of the operation (Yorke Engineering 2026). In addition, intense sources of vibration decrease substantially within 30 to 50 feet of the source, which as noted in Impact 3.12-1 would not be representative of the distance between composting facilities/operations and nearby receptors. In addition, vibration levels, at a distance of 30 to 50 feet, would occur well within the facility/operation boundary and not extend to uses beyond itself. As such, operational vibration impacts would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.12-4: Expose People Residing or Working Within 2 Miles of an Airport to Excessive Noise

Most of the airports and airfields in California have an active Airport Land Use Compatibility Plan (ALUCP) or equivalent to discourage incompatible land uses within the vicinity of an airport. Construction/operation of a new compost facility would not result in the development of new residential land uses that could be exposed to excessive noise. However, it is possible that a project under the program could be located within the vicinity (e.g., within 2 miles) of a public or private airport. The operation of the proposed compost facilities and operations would include a limited number of new employees that could work within the vicinity of a public or private airport. However, existing ALUCPs, local general plans, noise ordinances, and Occupational Safety and

Health Administration (OSHA) regulations would protect the proposed facility workers from excessive noise in these areas. For this reason, this impact would be **less than significant**.

Discussion

California has a diverse variety of airport types, ranging from large hub commercial airports to small, privately owned airstrips. Public airports typically service entire regions whereas smaller private airports or airstrips tend to serve local users. There are about 164 public and private airports (California Department of Public Health 2023) located throughout California. Noise from airports and aircraft flight events often have the greatest influence on the noise environment of nearby land uses.

Most of the airports and airfields in California have an active ALUCP (or the equivalent) to discourage incompatible land uses within the vicinity of the airport. The Federal Aviation Administration (FAA) Federal Aviation Regulation Part 150 program encourages airports to prepare noise exposure maps that show land uses that are incompatible with high-noise levels and these are often included with the ALUCP. The noise exposure maps and compatibility planning element of the ALUCPs consider appropriate exterior noise levels and the potential for airport noise to increase interior noise levels in a manner that could result in sleep disturbance at nearby sensitive land uses. One of the desired outcomes of the ALUCP planning process is to minimize the public's exposure to excessive noise and safety hazards.

It is possible that with the small and medium composting facilities and operations under the program could be considered within the vicinity (e.g., within 2 miles) of a public or private airport. However, federal statutes (49 U.S. Code Section 44718[d]) prohibit new municipal solid waste landfills, that are often bird attractants that could pose a bird strike hazard to airplanes, within 5 miles of most airports, unless the FAA concludes it would not have an adverse effect on aviation safety. Organic waste recovery facilities, particularly those that handle food waste, may similarly attract birds (see discussion in Section 3.9, "Hazards and Hazardous Materials") and as such may be prohibited in some ALUCPs.

Development of small and medium composting facilities and operations under the program would not result in the development of new residential land uses that could be exposed to excessive noise associated with airports. The operation of new or expanded organic waste recovery facilities would include a limited number of new employees that could work within the vicinity of a public or private airport and be exposed to airport noise. However, it is expected that existing ALUCPs, local general plans, noise ordinances, and OSHA regulations would protect workers from excessive noise in these areas. For this reason, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

3.13 Public Services

This section provides an overview of existing public services in the program area and evaluates the potential for implementation of a project to affect the availability, service level, and/or capacity of public services, including fire-protection services, police-protection services, public schools, parks and recreation, and other public facilities, and, if such an effect is determined to occur, whether new or expanded facilities would be required that could result in a potentially significant impact on the environment.

One comment letter regarding public services was received in response to the Notice of Preparation. The comment requested identification of the types of public-service coordination commonly required for composting operations, including fire departments, stormwater programs, and potentially code enforcement programs.

3.13.1 Regulatory Setting

Federal

No federal plans, policies, regulations, or laws related to public services are applicable to the project.

State

California Governor's Office of Emergency Services

The California Governor's Office of Emergency Services (Cal OES) serves as the lead state agency for emergency management in California. Cal OES coordinates the state response to major emergencies in support of local government. It is also responsible for collecting, verifying, and evaluating information about an emergency, facilitating communication with local government, and providing affected jurisdictions with additional resources when necessary. Cal OES may require state agencies to perform work outside day-to-day and statutory responsibilities. Local jurisdictions first use in-house own resources and, as exhausted, obtain more from neighboring cities and special districts, the county, and other counties throughout the state through the Statewide Mutual Aid System.

California Fire Code

The 2022 California Fire Code, which is codified at Part 9 of Title 24 of the California Code of Regulations, incorporates by adoption the 2021 International Fire Code and contains regulations related to construction, maintenance, and use of buildings. Topics addressed in the California Fire Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The California Fire Code contains specialized technical regulations related to fire and life safety. The California Building Standards Code, including the California Fire Code, is revised and published every 3 years by the California Building Standards Commissions.

CAL FIRE is the primary emergency response agency in 31 million acres of privately-owned wildlands, known as the State Responsibility Area. It also provides emergency services under cooperative agreements with numerous counties, cities, and districts. CAL FIRE's Law Enforcement Program staff enforce state fire and forest laws.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which includes regulations for building standards (as set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers, smoke alarms, high-rise building and childcare facility standards, and fire-suppression training.

Quimby Act

The Quimby Act (California Government Code Section 66477) preserves open space and parkland in urbanizing areas of the state by authorizing local governments to establish ordinances requiring developers of new subdivisions to dedicate land for parks, pay an in-lieu fee, or perform a combination of the two. The Quimby Act provides two standards for the dedication of land for use as parkland. If the existing area of parkland in a community is 3 acres or more per 1,000 persons, then the community may require dedication based on a standard of 5 acres per 1,000 persons residing in the subdivision. If the existing amount of parkland in a community is less than 3 acres per 1,000 persons, then the community may require dedication based on a standard of only 3 acres per 1,000 persons residing in the subdivision. The Quimby Act requires a city or county to adopt standards for recreational facilities in its general plan recreation element if it is to adopt a parkland dedication/fee ordinance.

The amount of land dedicated, or fees paid shall be based upon the residential density, which shall be determined on the basis of the approved or conditionally approved tentative map or parcel map and the average number of persons per household. There shall be a rebuttable presumption that the average number of persons per household by units in a structure is the same as that disclosed by the most recent available federal census or a census taken pursuant to Chapter 17 (commencing with Section 40200) of Part 2 of Division 3 of Title 4. The Quimby Act standards are used as a potential metric for assessing appropriate recreation acreage but are not a requirement under the impact analysis.

Public Park Preservation Act

The primary legislation for protecting and preserving parkland is the Public Park Preservation Act. Under the California Public Resources Code Sections 5400 – 5409, cities and counties may not acquire any real property that is in use as a public park for any non-park use unless compensation or land, or both, is provided to replace the parkland acquired. This provides no net loss of parkland and facilities.

Local

Given the statewide extent of the program and the large number of local and regional agencies responsible for providing fire protection, police services, schools, parks, and other public facilities, this EIR does not identify individual local plans, policies, or ordinances related to public services. Instead, it recognizes that local jurisdictions maintain their own service-delivery standards, facility planning requirements, and development policies through general plans, municipal codes, and service-area master plans. Implementation of the program is assumed to occur in a manner consistent with these locally adopted requirements to the extent that development of small and medium composting facilities and operations is subject to them, because local land-use approvals and associated permits typically require compliance with applicable public-service policies and performance standards. As a result, any new facility would be reviewed by the relevant local agencies to ensure that adequate fire protection, emergency response, police services, and other public facilities are available and that development does not conflict with established public-service plans or requirements.

3.13.2 Environmental Setting

Fire Protection

Local fire districts and departments provide fire protection and emergency services in the Local Responsibility Area under the jurisdiction of local government entities. Local fire districts and departments also provide fire protection through mutual aid agreements or contracts with CAL FIRE for staff and/or funding resources.

Law Enforcement

Law enforcement services within unincorporated county areas are generally provided by county sheriff's departments. Services within incorporated city limits are typically provided by local city police departments.

Schools

There are over 18,000 public schools, within over a thousand public school districts, and over 3,000 private schools in California, serving grades pre-K through 12th (California Department of Education 2026). California has the largest college and university education system in the U.S., accounting for 15% of nationwide enrollment.

Libraries

As of 2026, there were a total of 1,127 libraries managed by 260 jurisdictions within California.

Recreational Facilities and Parks

California State Parks manages a large portfolio of state parks and recreation areas within the California State Parks system. In addition, there are 28 national forests and national parks located in California. Additional public land in California is managed by the Bureau of Land Management, some of which is designated for recreation. Counties, cities, special districts, and non-governmental organizations provide additional parks and recreational opportunities include biking, hiking, boating, fishing, camping, dog parks, cultural venues, playgrounds, and sports facilities. These types of facilities are located throughout the state, and recreational opportunities can vary depending on the location.

3.13.3 Environmental Impacts and Mitigation Measures

Methodology

This evaluation was performed considering the potential locations of small and medium composting facilities and operations within the program area, applicable regulations and guidelines, and typical construction activities and operations of small and medium composting facilities and operations. In determining the level of significance, the analysis assumed that the small and medium composting facilities and operations would comply with relevant federal, State, and local laws, regulations, ordinances, and guidance. Due to the scope of the analysis (i.e., statewide programmatic), site-specific information is not provided as the details, such as size and location, of future facilities are unknown at this time.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the program would result in a potentially significant impact on public services if it would:

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

Issues Not Discussed Further

Implementation of the program and development of composting facilities and operations would not generate substantial population growth. Consequently, these facilities would not create a demand for new or physically altered school or park facilities, nor would they place substantial pressure on existing educational or recreational resources. Because composting facilities and operations are intended to reduce existing demand for solid waste disposal capacity and do not involve residential development or population increases, they would not contribute to enrollment growth in local schools or increased use of public parks or recreational facilities. Therefore, issues related to these public services are not discussed further within this section.

Environmental Impacts and Mitigation Measures

Impact 3.13-1: Adversely Impact Acceptable Service Ratios, Response Times, or Other Performance Objectives for Fire Protection and Police Services

Construction and operation of small and medium composting facilities and operations would adhere to applicable building code and the fire code adopted by the relevant local jurisdiction. Building and fire inspections would be conducted during construction of composting facilities/operations to ensure code compliance and thereby reduce the risk of fire/explosion hazards associated with new facilities, as well as the ability to access the facilities/operations that may be developed under the program. Impacts would be **less than significant**.

Discussion

Implementation of the program and development of new small and medium composting facilities and operations would involve activities such as grading, equipment use, material delivery, worker traffic, and ongoing facility operations. These activities could incrementally increase demand for fire protection and police protection; however, the scale of development is modest and comparable to other small industrial or agricultural uses.

Per CCR Title 14, Section 17867(9), The operator shall provide fire prevention, protection and control measures, including, but not limited to, temperature monitoring of windrows and piles, adequate water supply for fire suppression, and the isolation of potential ignition sources from combustible materials. Fire lanes shall be

provided to allow fire control equipment access to all operation areas. These operational standards are in place to ensure that the proposed ingress/egress points of each facility and on-site components of each facility/operation minimize fire risk and hazards. During construction, compliance with applicable fire safety regulations, including maintaining adequate emergency access, ensuring on-site fire suppression capability, and implementing ignition-prevention practices, would minimize potential fire risk conditions. Standard construction protocols, such as maintaining fire extinguishers, ensuring equipment is properly serviced, and using water trucks or equivalent measures to control dust and meet fire-suppression requirements, further reduce the potential for fire-related emergencies.

During operation, composting facilities may introduce fire-risk conditions associated with organic material stockpiles, equipment use, and vehicle circulation. Compliance with Title 14 composting operation standards California Fire Code, local fire department conditions of approval, and CAL FIRE requirements in State Responsibility Areas ensures that facilities incorporate adequate fire prevention and emergency response features. Operational activities may also generate occasional calls for police service related to site security, trespass, or traffic concerns; however, these demands are expected to be infrequent and comparable to other industrial or agricultural operations of similar scale. Facilities do not generate population growth or substantial new development that would increase long-term demand for public services or require new or expanded fire or police facilities.

In rural areas where facilities may be located farther from existing fire or police stations, response times may be longer due to travel distance rather than inadequate service capacity. These areas are typically designated for agricultural or industrial uses under local General Plans and zoning ordinances, which anticipate and accommodate lower service densities. Development of composting operations/facilities in such locations would therefore be consistent with adopted land-use designations and General Plan policies that govern rural service provision. Local jurisdictions and CAL FIRE maintain mutual-aid agreements and regional coordination mechanisms that ensure adequate emergency response even in areas with dispersed service coverage. As a result, projects sited in rural areas would not conflict with planned service ratios, response-time objectives, or performance standards established by local or regional agencies.

Prior to implementing a project, a project proponent would be required to coordinate with the local fire protection and police service providers to ensure the facility is designed and operated in a manner that supports acceptable service ratios, response times, and performance objectives. This coordination shall include:

- Construction phase fire risk controls, including:
    - Maintaining on-site fire suppression equipment consistent with local fire department requirements.
    - Using water trucks or equivalent measures to control dust and reduce ignition potential during grading and equipment operation.
    - Ensuring construction equipment is properly maintained to prevent sparks, leaks, or other ignition sources.
- Operational fire prevention practices, including:
    - Optimizing compost process parameters to minimize heat generation, odors, vectors, and other conditions that could trigger emergency response.

  - Adjusting operations during specific meteorological conditions (e.g., high winds/gusty conditions, extreme heat/low humidity) to reduce noise, dust, odor, or other emissions that could prompt emergency calls.
  - Maintaining defensible space, hydrant access, and fire flow capacity consistent with the California Fire Code and local fire department standards.
- Police service coordination, including:
  - Improving perimeter security through fencing, lighting, controlled access, surveillance, or other measures identified by the local police agency.
  - Routing facility-related vehicles away from residential areas and sensitive receptors during peak commute periods to reduce traffic-related enforcement needs.
  - Planting vegetative or earthen buffers (e.g., trees, berms) to reduce noise and discourage unauthorized access.

Because local jurisdictions retain full authority to impose project-level conditions of approval to ensure adequate emergency access, fire suppression infrastructure, and security measures, and because the project must comply with applicable fire code and operational requirements, implementation of the program would not adversely affect acceptable service ratios, response times, or performance objectives for fire protection or police protection services. Impacts would be **less than significant**.

Mitigation Measures

No mitigation is required.

3.14 Transportation

This section describes the applicable federal, state, and local transportation regulations and policies; discusses the existing roadway network and transportation facilities in the vicinity of the program; and analyzes the potential impacts of program implementation on transportation. Mitigation measures that would reduce impacts, where applicable, are also discussed.

One comment letter regarding transportation was received in response to the Notice of Preparation. The comment requested inclusion of general guidance on routing, scheduling, and on-site traffic management, especially with regard to truck traffic.

3.14.1 Regulatory Setting

Federal

Federal Highway Administration

The Federal Highway Administration (FHWA), an agency of the U.S. Department of Transportation, provides stewardship over the construction and preservation of the nation's highways, bridges, and tunnels. It also conducts research and provides technical assistance to State and local agencies to improve safety, mobility, and livability and to encourage innovation in these areas. FHWA also provides regulation and guidance related to work zone safety, mobility, and temporary traffic control (TTC) device implementation.

State

California Department of Transportation

The California Department of Transportation (Caltrans) is responsible for planning, designing, constructing, operating, and maintaining the state highway system and ramp interchange intersections. Caltrans is also responsible for highway, bridge, and rail transportation planning, construction, and maintenance.

Environmental planning for transportation improvement projects involving California state highways follows the procedures set forth in the agency's Standard Environmental Reference and Section V of Guidance for Compliance Environmental Handbook. This guidance is intended for transportation-specific improvement projects where Caltrans operates as the CEQA lead agency but can also be used by other agencies, including local agencies, for ideas supplemental to their own procedures.

Caltrans provides guidance to local agencies on assessing the performance of rural roadways to enhance safety, mobility, accessibility, and productivity under continued use. Caltrans requires transportation permits for the movement of vehicles or loads exceeding the limitations on the size and weight contained in Division 15, Chapter 5, Article 1, Section 35551, of the California Vehicle Code.

California Fire Code

The 2022 California Fire Code, which is codified at Part 9 of Title 24 of the California Code of Regulations (CCR), incorporates by adoption the 2021 International Fire Code and contains regulations related to construction, maintenance, access, and use of buildings. Topics addressed in the California Fire Code include design standards for fire apparatus access (e.g., turning radii, minimum widths), standards for emergency access during construction, provisions intended to protect and assist fire responders, and several other general and specialized fire safety requirements for new and existing buildings and the surrounding premises. The California Fire Code

contains specialized technical regulations related to fire and life safety. The California Building Standards Code, including the California Fire Code, is revised and published every 3 years by the California Building Standards Commission.

California Manual on Uniform Traffic Control Devices, Part 6: Temporary Traffic Control

The California Manual on Uniform Traffic Control Devices, Part 6: Temporary Traffic Control provides principles and guidance for the implementation of TTC to ensure the provision of reasonably safe and effective movement of all roadway users (e.g., motorists, bicyclists, pedestrians) through or around TTC zones while reasonably protecting road users, workers, responders to traffic incidents, and equipment. Additionally, this document notes that TTC plans and devices shall be the responsibility of the authority of a public body or official having jurisdiction for guiding road users (Caltrans 2026).

CEQA Guidelines Section 15064.3

Following the passage of Senate Bill (SB) 743 by the Legislature, the Office of Administrative Law added CEQA Guidelines Section 15064.3, Determining the Significance of Transportation Impacts. This section of the CEQA Guidelines establishes Vehicle Miles Traveled (VMT) as the most appropriate measure of transportation impacts. CEQA Guidelines Section 15064.3(a) defines VMT as "the amount and distance of automobile travel attributable to a project." It also notes that "other relevant considerations may include the effects of the project on transit and non-motorized travel." As clarified in Technical Advisory for Evaluating Transportation Impacts Under CEQA, the term "automobile" refers to on-road passenger vehicles, specifically cars and light trucks (California Office of Planning and Research [OPR] 2018). Generally, land use projects within 0.5 miles of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease VMT in the project area compared to existing conditions should be presumed to have a less than significant transportation impact. A lead agency has discretion to choose the most appropriate methodology to evaluate VMT, including whether to express the change in absolute terms, per capita, per household, or in any other measure. A lead agency may also use models to estimate VMT and may revise those estimates to reflect professional judgment based on evidence.

California Vehicle Code

Caltrans is responsible for planning, designing, constructing, operating, and maintaining the state highway system and ramp interchange intersections. Caltrans is also responsible for highway, bridge, and rail transportation planning, construction, and maintenance. Caltrans provides guidance to local agencies on assessing the performance of rural roadways to enhance safety, mobility, accessibility and productivity under continued use. Caltrans requires transportation permits for the movement of vehicles or loads exceeding the limitations on the size and weight contained in Division 15, Chapter 5, Article 1, Section 35551, of the California Vehicle Code.

Program construction activities and long-term operation of collection, sortation, and processing facilities would require the use of state and locally managed roadways; thus, Caltrans guidance and standards specifically related to the performance of rural state roadways and vehicle size and weight limitations would apply to the program.

The California Vehicle Code also provides requirements for ensuring emergency vehicle access regardless of traffic conditions. Sections 21806(a)(1), 21806(a)(2), and 21806(c) define how motorists and pedestrians are required to yield the right-of-way to emergency vehicles.

Local

Given its statewide extent and the possible number of local and regional responsible agencies, this EIR does not identify individual, potentially applicable local government plans, policies, and ordinances. Types of local regulations relevant to transportation may include general plan policies, ordinances, and locally-adopted transportation impact guidelines and VMT thresholds. This EIR assumes that implementation of the program would be consistent with local plans, policies, and ordinances to the extent that development of small and medium composting facilities and operations under the program are subject to them, because local land use and permit approvals are typically conditioned upon such consistency.

3.14.2 Environmental Setting

Roadway System

California's roadways are classified functionally throughout the state as either urban or rural and have the following hierarchy:

- **Interstates**: Arterial roads that provide the highest level of mobility and speeds over the longest uninterrupted range, have limited access, and have typically posted speeds of 55 to 75 miles per hour.
- **Other Freeways and Expressways**: High-mobility roads with limited on- and off-access points (e.g., ramp locations or at-grade intersections) and whose directional travel lanes are generally separated by a physical barrier.
- **Other Principal Arterials**: High-mobility, limited-access roads that typically have 4 lanes or more and posted speeds of 50 to 70 miles per hour. This roadway type is classified as either urban or rural (FHWA 2023):
    - Urban classification:
        - Serves major activity centers; has the highest traffic volume corridors and longest trip demands.
        - On minimum mileage, carries a high proportion of total urban travel.
        - Provides interconnection and continuity for major rural corridors to accommodate transportation through, to, and from urban areas.
        - Serves demand for travel between central business districts and outlying residential areas.
    - Rural classification:
        - Serves corridor movement that expresses characteristics representative of substantial statewide or interstate travel.
        - Connects all or a majority of urbanized areas and urban clusters of 25,000 or more populations.
        - Provides an integrated network of continuous routes.
- **Minor Arterials**: Moderate-mobility, limited-access roads that typically have 2 or 3 lanes and include turn lanes to benefit through traffic.

- **Collectors**: Moderate-mobility, moderate-access roads that connect local roads to arterials with few businesses, and that typically have posted speed limits between 35 and 55 miles per hour.
- **Local Roads and Streets**: High-access, limited-mobility roads that emphasize access to abutting land and typically have posted speed limits between 20 and 45 miles per hour.

In California, interstate highways contain a larger percentage of vehicular traffic than local arterials and roadways, as shown in Table 3.14-1 (Caltrans 2024). State routes connect centers of commerce, industry, agriculture, and mineral wealth for communities and regions of the state.

Table 3.14-1. Maintained Miles, Lane Miles, and Annual Vehicle Miles of Travel by Functional Classification

Functional Classification	Maintained Miles	Lane Miles	Annual VMT (millions)
Interstate	2,455	15,341	85,126
Principal Arterial (other freeways and expressways)	1,887	10,955	65,075
Principal Arterial (other)	10,096	32,928	67,567
Minor Arterial	16,662	41,744	52,431
Major Collector	24,741	52,088	33,371
Minor Collector	7,630	15,270	1,695
Local	114,138	228,279	19,809
Statewide Total	**177,609**	**396,604**	**325,074**

Source: Caltrans 2024

Federal and state highways throughout California are maintained by Caltrans. Designated truck routes are also located throughout the state and are maintained and located primarily on major federal, state, and county highways and major local arterials. These routes provide alternative routes for large trucks from mainline routes that are ill-suited for large-truck travel because of obstacles (low-clearance bridges, sharp turns, or steep grades) or conditions that could create unsafe conditions for smaller vehicles. Roadways statewide include approximately 67,421.70 miles of maintained county roads, which in terms of mileage, account for the largest percentage of all roadways (Caltrans 2024). The most heavily populated areas in California are generally along interstate or state highway corridors.

Transit System

Public transit in California comprises over 500 local and regional transit providers; ferry boat operations; local, regional, and interregional commuter rail services; light rail services; paratransit agencies that provide transportation services for persons with special mobility needs; and transit providers in non-urbanized and rural areas. Local and regional transit organizations offer a variety of transit options, including buses, subways, and light rail. Service is provided with varying frequency and cost. In rural areas, transit services and facilities are likely to be intermittent or absent in many locations whereas larger and more accessible networks are available in more urban and developed regions.

Bicycle and Pedestrian Network

Bicycle and pedestrian networks and applicable plans, policies, and standards are highly variable across regional and local agencies within California. However, agencies typically conform to the Caltrans Highway Design Manual bikeway facility classification system (Caltrans 2019), described as follows:

- **Class I Bikeways**: Facilities with exclusive right-of-way for bicyclists and pedestrians, away from the roadway and with cross-flows by motor traffic minimized. In some areas, pedestrian facilities are separated from the bikeway.
- **Class II Bikeways**: Bike lanes established along streets and are defined by pavement striping and signage to delineate the portion of a roadway for bicycle travel.
- **Class III Bikeways**: Shared routes for bicyclists on streets with motor traffic not served by dedicated bikeways to provide continuity of the bikeway network.
- **Class IV Bikeways**: Facilities for the exclusive use of bicycles that include a bikeway separated from vehicular traffic.

Bicycle and pedestrian facilities are integral components of the statewide transportation system. Many California cities and counties have created bicycle and pedestrian plans. Some Metropolitan Planning Organizations and Regional Transportation Planning Agencies also have such plans, either included in or in addition to their Regional Transportation Plan.

3.14.3 Environmental Impacts

Methodology

VMT Analysis

Section 15064.3 was added to the State CEQA Guidelines effective December 28, 2018, as part of a comprehensive update, and addresses the determination of significance for transportation impacts, which requires that the analysis be based on VMT instead of a congestion metric such as level of service (LOS). The change in the focus of transportation analysis is the result of legislation (SB 743, Statutes of 2013) and was intended to change the focus from congestion to, among other things, reduction in greenhouse gas emissions, encouraging mixed use development, and other factors. Pursuant to State CEQA Guidelines Section 15064.3(c), this change went into effect beginning July 1, 2020.

SB 743 requirements are designed to be most relevant to urban travel related to residential and employment-generating land uses, so applying them to special uses, such as waste management, is difficult; nonetheless, the requirements are not limited to residential and employment-generating projects. State CEQA Guidelines Section 15064.3(b) identifies criteria for analyzing the transportation impacts of a project, including land use projects (Section 15064.3[b][1]) and transportation projects (Section 15064.3[b][2]). While some of the reasonably foreseeable compliance response under the program include development and operation of new facilities, the program would not drive development of urban areas, residential development, major employment generation, or transportation projects.

The Technical Advisory for Evaluating Transportation Impacts Under CEQA (OPR 2018) provides the following guidance:

> *"Screening Threshold for Small Land Use Projects: Many local agencies have developed screening thresholds to indicate when detailed analysis is needed. Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact."*

Accordingly, and for the purposes of this analysis, the VMT threshold of 110 trips per day is used to determine project-level significance of impacts associated with development of small and medium composting facilities.

Transportation Hazards and Emergency Access Analysis

Transportation hazards and emergency access analysis evaluates if the program would directly or indirectly, substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or result in inadequate emergency access.

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the CEQA Guidelines. A transportation-related impact would be significant if implementation of the program would:

- Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, or 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.

Issues Not Discussed Further

Implementation of the reasonably foreseeable compliance responses associated with the program would not result in a change in air traffic patterns or contribute to an increase in demand for air travel. As a result, this issue is not evaluated further.

Similarly, transit, bicycle, and pedestrian facilities and activities would not be affected by the program. Due to the nature of the program, primarily construction and operation of composting facilities and infrastructure, the program would not generate demand for transit, bicycle, or pedestrian facilities. Therefore, the program would not create conflicts with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Thus, impacts related to transit, bicycle, and pedestrian facilities are not evaluated further.

Environmental Impacts and Mitigation Measures

Impact 3.14-1: Construction-Related Traffic Impacts

Construction of small and medium composting facilities and operations would temporarily generate worker and material import/export trips. Depending on the number of trips generated and the location of new facilities, implementation could conflict with applicable programs, plans, ordinances, or policies (e.g., performance

standards, congestion management) or result in hazardous design features and emergency access issues from road closures, detours, and obstruction of emergency vehicle movement, especially from project-generated heavy-duty truck trips. Thus, this impact would be **potentially significant**.

Discussion

Under the program, new small and medium composting facilities and operations would likely be developed at various locations across the state. During site-specific development, employee vehicle and construction-related import-export truck trips would occur along local and regional roadways. Although detailed information about specific construction activities is not available, facility construction resulting from implementation of the program would be anticipated to result in short-term construction traffic. The amount of construction activity would vary depending on the particular type, number, and duration of use for the different pieces of equipment and on the phase of construction. These variations would affect the amount of project-generated traffic for both worker commute trips and material deliveries. Depending on the number of trips generated and the location of new and expanded composting facilities and operations, implementation could conflict with applicable programs, plans, ordinances, or policies (e.g., performance standards, congestion management) or result in hazardous design features and emergency access issues from road closures, detours, and obstruction of emergency vehicle movement, especially from project-generated heavy-duty truck trips. Thus, this impact would be potentially significant.

Mitigation Measures

Mitigation Measure 3.14-1: Construction Traffic Management Plan

For each project under the program, the project applicant shall prepare a construction traffic management plan and have the plan approved by the local agency upon initiation of construction. The project applicant shall be responsible for implementing and maintaining the transportation construction plan during all phases of construction. The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize construction traffic impacts:

- Establish a construction phasing/staging schedule and sequence that minimizes impacts of a work zone on traffic by using operationally sensitive phasing and staging throughout the life of the project.
- Identify arrival/departure times for trucks and construction workers to avoid peak periods of adjacent street traffic and minimize traffic effects.
- Identify optimal delivery and haul routes to and from the sites to minimize impacts on traffic, transit, pedestrians, and bicyclists.
- Identify appropriate detour routes for bicycles and pedestrians in areas affected by construction.
- Coordinate with local transit agencies and provide for relocation of bus stops and ensure adequate wayfinding and signage to notify transit users.
- Preserve emergency vehicle access.
- Preserve evacuation routes.
- Implement public awareness strategies to educate and reach out to the public, businesses, and the community concerning the project and work zone (e.g., brochures and mailers, press releases/media alerts).

- Provide a point of contact for residents, employees, property owners, and visitors to obtain construction information and submit comments and questions.
- Provide current and/or real-time information to road users regarding the project work zone (e.g., changeable message sign to notify road users of lane and road closures and work activities, temporary conventional signs to guide motorists through the work zone).
- Encourage construction workers to use transit, carpool, and other sustainable transportation modes when commuting to and from the sites.

Significance after Mitigation

Implementation of Mitigation Measure 3.14-1 would reduce impacts from construction-related traffic because as part of the planning, design, and engineering for future projects, the implementing agency would implement measures to minimize overall disruptions and ensure that overall circulation in a project area is maintained to the extent possible, with particular focus on ensuring transit, pedestrian, and bicycle connectivity. Implementation of the mitigation measure at a project level would ensure that for each project under the program, a transportation construction plan is prepared by the project applicant and is implemented and maintained throughout all construction phases. The implementation and maintenance of the transportation construction plan as part of this mitigation measure would ensure that adverse impacts to surrounding businesses and residents, emergency access, traffic congestion, and multimodal transportation as a result of the program are **less than significant**.

Impact 3.14-2: Substantial Increase in Hazards from a Geometric Design Feature (e.g., Sharp Curves or Dangerous Intersection) or Incompatible Uses

Development of small and medium compost facilities and operations could require or result in new access roads; driveways to facilitate ingress and egress of vehicles; or minor alterations to existing roadways, such as restriping. All future facilities would be required to undergo the local jurisdictions' discretionary review processes, which would require proposed operations to be consistent with applicable plans, policies, and regulations adopted to ensure that projects are designed in accordance with safety standards and are compatible with existing uses. Enforcement of adopted regulations by applicable jurisdictions would ensure that future facilities do not increase hazards or result in incompatible uses. Therefore, this impact would be **less than significant**.

Discussion

Development of new small and medium compost facilities and operations under the program would require or result in the development of new internal access/circulation roads; driveways to facilitate ingress and egress of vehicles; and/or minor alterations to existing roadways, such as striping. Major alterations to existing roadways are not anticipated as part of development under the program. However, potential circulation improvements, including roadway improvements/modifications, that may be identified during local agency review of individual compost facilities are unknown at this time. For this reason, future development under the program could, in and of itself, increase hazards because of hazardous design features associated with access points and driveways. However, local and regional agencies have authority over the physical development of land within their jurisdictional boundaries through the implementation of adopted land use regulations and policies in general plans, zoning ordinances, and other applicable regulatory standards. Therefore, future small and medium composting facilities and operations related to implementation of the program would be required to

undergo the local jurisdictions' development application review processes, which would require each proposed facility to be consistent with applicable plans, policies, and regulations adopted to ensure that development is designed in accordance with safety standards and are compatible with existing uses. Routine enforcement of adopted regulations by applicable jurisdictions would ensure that future facilities do not increase hazards or result in incompatible uses. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.14-3: Inadequate Emergency Access

Development of small and medium compost facilities and operations could impede on-site emergency access or interrupt the flow of emergency vehicles on nearby roadways if not regulated properly. Development under the program would be regulated through the local jurisdictions' discretionary review processes, which would require project proponents to establish consistency through site design and construction with land use regulations, zoning requirements, and applicable policies adopted to ensure adequate emergency access. Enforcement of adopted regulations by applicable jurisdictions would ensure that future facilities do not obstruct or impede emergency access. Therefore, this impact would be **less than significant**.

Discussion

The program includes development of new or expanded compost facilities. Depending on the location of new or expanded facilities, structures could impede on-site emergency access or interrupt the flow of emergency vehicles on nearby roadways if not regulated properly. Local and regional agencies have authority over the physical development of land within their jurisdictional boundaries through the implementation of adopted land use regulations and policies in general plans, zoning ordinances, and other applicable regulatory standards. Therefore, future facilities would be required to undergo the local jurisdictions' discretionary review processes, which would require each proposed development to be consistent with applicable plans, policies, and regulations adopted to ensure that adequate emergency access is provided. In addition, future development related to the program would be required to comply with local emergency plans adopted to ensure that emergency response activities, such as deployment of emergency vehicles, are not obstructed. Routine enforcement of adopted regulations by applicable jurisdictions would ensure that future facilities and operations would not obstruct or impede emergency access. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.14-4: Reasonably Anticipated Increase in Vehicle Miles Traveled

The development of small and medium composting facilities and operations under the program would further reduce the amount of organic waste delivered to landfills, but the operation of these facilities and operations in and of themselves could increase vehicle trips and thereby VMT. As a result, this impact is classified as **potentially significant**.

Discussion

Approximately 87% of the state's population has full access to on-site curbside collection services, including recycling and organics recycling (CalRecycle 2026). Most jurisdictions do not currently collect food waste for

recycling at the curb. Under the program, the amount of organic material that is delivered to landfills would be reduced through changes to the way food waste and other materials are collected and handled. Essentially, organic waste would be transported to a small or medium composting facility and operations, and the material produced at these facilities and operations would be used as a soil amendment or for direct land application.

The influence of the program on changes to transportation would vary across the state, depending on the nature of new and existing disposal reduction programs and the locations of new small or medium composting facilities and operations relative to current disposal routes of travel. Generally, targeted materials would no longer be disposed of in landfills but would rather be transported to new composting facilities throughout the state. In addition, finished compost would be distributed within economically viable distances from the recovery facilities. Overall, the program would likely result in an increase in VMT from new and/or additional transport routes primarily for the delivery of the products of waste recovery to customers. However, because the travel costs associated with hauling of material can be substantial as distance grows (e.g., the cost of fuel, the collection fleet, and staff), haulers have an incentive to minimize the number and length of trips, regardless of material type.

Although VMT would likely increase, it is important to consider the purpose of evaluating VMT. As discussed in LCI's technical advisory, the VMT metric supports statutory goals related to the reduction of greenhouse gas (GHG) emissions, the development of multimodal transportation networks, and a diversity of land uses. Overall, SB 743 is not designed to address public services activities, such as the organic waste disposal reduction goals of the program. Additionally, it is important to consider that the attendant increase in mobile source emissions (i.e., air pollutants and GHG emissions) associated with the projected VMT increases would be small compared to emissions reduction benefits associated with the reduction in disposal of organic waste. The following anticipated reductions reasonably expected from the program, would be much greater than the increment of increased emissions from local travel increases:

- avoidance of fugitive methane emissions at landfills from the anaerobic decomposition of organics;
- improved soil health and carbon sequestration potential through the application of compost materials;
- displacement of petroleum-based synthetic fertilizers through increased availability of compost materials;
- decreased emissions of GHGs from reduced reliance on pesticide use.

The Technical Advisory for Evaluating Transportation Impacts Under CEQA (OPR 2018) provides the following guidance:

> *"Screening Threshold for Small Land Use Projects: Many local agencies have developed screening thresholds to indicate when detailed analysis is needed. Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact."*

Accordingly, for the purposes of this analysis, the VMT threshold of at or below 110 trips per day is used to determine project-level significance of impacts associated with development of small and medium composting facilities.

It is estimated that there would be approximately 52 vehicle trips per day associated with small composting facilities and 110 vehicle trips per day associated with medium composting facilities. These trips are estimated to result in 920 VMT per small facility per day and 2,000 VMT per medium facility per day. The projections for daily vehicle trips are below the threshold for significance of 110 trips or fewer per day (OPR 2018). This is considered to be a reasonably conservative analysis as it assumes that all vehicle trips to and from the small or medium composting facilities and operations would be new and would not result in trip reduction associated with solid waste disposal. However, this potential reduction would be dependent on the location of specific facilities in relation to feedstocks and solid waste disposal facilities and cannot be estimated at this time. In addition and as noted in Chapter 2, "Project Description," the anticipated trips per day for small and medium facilities take into account the limits of material allowed on-site, as required by SB 1046, and the projected tonnage throughput that small and medium facilities and operations may have while maintaining allowable on-site storage limits. It is possible that medium composting facilities may be able to achieve higher annual throughput than 25,000 tons per year (tpy), which is considered a reasonable projection for a medium composting facility and consistent with the 2024 permitting study conducted by CalRecycle. Because throughput (tonnage) does factor into the number of export/import vehicle trips of a given facility, a facility(ies) with greater than 25,000 tpy throughput may exceed the 110 trips per day threshold identified by OPR. For this reason, impacts are considered **potentially significant**.

Mitigation Measures

According to the SB 743 Technical Advisory, potential mitigation measures that can reduce VMT include actions such as improved alternate transportation facilities, land use planning, and disincentives to driving (e.g., roadway pricing, limited parking availability). Land use decisions, including those related to the siting of organic waste recovery facilities and operations, are subject to local jurisdictions (Public Resources Code Section 40059). The locations where compost, other byproducts, and recovered food would be distributed is contingent on various influences outside of CalRecycle's control, including local land uses and economics. Other mitigation measures, such as providing improved alternative transportation facilities and establishing disincentives to driving, would not have sufficient nexus with the impact or offer rough proportionality to the impact to be considered feasible mitigation (*Dolan v. City of Tigard, 512 U.S. 374 [1994]; Nollan v. California Coastal Commission, 483 U.S. 8825 [1987]*). Therefore, no feasible mitigation is available.

Significance after Mitigation

Although the projected throughput of both small and medium composting facilities and operations as projected in this EIR and in order to meet the state's organic waste reduction goals would not exceed applicable thresholds, it is possible that a facility that meets the SB 1046 requirements for the maximum amount of material that can be stored on-site at one time may have a higher annual throughput than 25,000 tpy (depending on feedstock and other factors). To meet CEQA's mandate of good-faith disclosure and to not risk understating potential future impacts in light of uncertainties related to the proposed regulation, this impact is classified as **significant and unavoidable**.

3.15 Utilities and Service Systems

This section evaluates the availability of existing utility and infrastructure systems (water, wastewater, electricity, natural gas, telecommunications, and solid waste) to serve the project area and the impact of the project on the capacity of these systems.

One comment letter related to utilities and service systems was received in response to the Notice of Preparation. The comment requested that the EIR identify minimum utility expectations.

3.15.1 Regulatory Setting

Federal

Clean Water Act

The Clean Water Act (CWA) employs a variety of regulatory and nonregulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The US Environmental Protection Agency (EPA) established primary drinking water standards in Section 304 of the CWA. States are required to ensure that the public's potable water meets these standards.

Section 402 of the CWA creates the National Pollutant Discharge Elimination System (NPDES) regulatory program. Point sources must obtain a discharge permit from the proper authority (usually a state, sometimes EPA, a tribe, or a territory). NPDES permits cover various industrial and municipal discharges, including discharges from storm sewer systems in larger cities, storm water associated with numerous kinds of industrial activity, runoff from construction sites disturbing more than 1 acre, and mining operations. All so-called "indirect" dischargers are not required to obtain NPDES permits. "Indirect" dischargers send wastewater into a public sewer system, which carries it to the municipal sewage treatment plant, through which it passes before entering surface waters.

Safe Drinking Water Act

As mandated by the Safe Drinking Water Act (Public Law 93-523), passed in 1974, the EPA regulates contaminants of concern to domestic water supply. Such contaminants are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA primary and secondary Maximum Contaminant Levels (MCLs). MCLs and the process for setting these standards are reviewed every 3 years. Amendments to the Safe Drinking Water Act enacted in 1986 established an accelerated schedule for setting drinking water MCLs. EPA has delegated responsibility for California's drinking water program to the State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW). SWRCB-DDW is accountable to EPA for program implementation and for adoption of standards and regulations that are at least as stringent as those developed by EPA.

State

California Fire Code

The 2022 California Fire Code, which is codified as Part 9 of Title 24 of the California Code of Regulations, incorporates by adoption the 2021 International Fire Code and contains regulations related to construction, maintenance, and use of buildings. Topics addressed in the California Fire Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous

materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The California Fire Code contains specialized technical regulations related to fire and life safety. The California Building Standards Code, including the California Fire Code, is revised and published every 3 years by the California Building Standards Commission.

Urban Water Management Plan

In 1983, the California Legislature enacted the Urban Water Management Planning Act (UWMPA) (California Water Code Sections 10610 – 10656). The UWMPA states that every urban water supplier that provides water to 3,000 or more customers, or that provides more than 3,000 acre-feet (af) of water annually, should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. This effort includes the adoption of an Urban Water Management Plan (UWMP) by every urban-water supplier and an update of the plan every 5 years on or before December 31, of every year ending in a 5 or zero.

The water system for the Master Plan Area is supplied by SJW. SJW adopted its 2020 UWMP in June 2021 (SJW 2021a). Recycled water is also provided to the campus through the City's South Bay Water Recycling (SBWR) Program.

Sustainable Groundwater Management Act

Under the Sustainable Groundwater Management Act (SGMA), passed in 2014, the Department of Water Resources (DWR) identified 94 basins and subbasins throughout the state as medium and high priority, of which 21 were identified as critically overdrafted. As defined by SGMA, critical overdraft occurs when "continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economic impacts." SGMA requires local agencies in high- and medium-priority basins to form groundwater sustainability agencies (GSAs). GSAs are responsible for developing and implementing groundwater sustainability plans (GSPs). GSPs serve as a roadmap for (1) how to achieve long-term groundwater sustainability, (2) how to manage groundwater, and (3) how to avoid undesirable effects from groundwater overdraft, such as reduced groundwater levels and storage, land subsidence, depletion of surface water, and degradation of groundwater quality.

California Safe Drinking Water Act

The SWRCB-DDW is responsible for implementing the federal Safe Drinking Water Act (SDWA) and its updates, as well as California statutes and regulations related to drinking water. State primary and secondary drinking-water standards are promulgated in California Code of Regulations (CCR) Title 22, Sections 64431 – 64501.

The California Safe Drinking Water Act (CA SDWA) was passed in 1976 to build on and strengthen the federal SDWA. The CA SDWA authorizes the California Department of Health Services to protect the public from contaminants in drinking water by establishing MCLs that are at least as stringent as those developed by EPA, as required by the federal SDWA.

California's Integrated Waste Management Act of 1989

The California Integrated Waste Management Act (CIWMA) of 1989 created the California Integrated Waste Management Board, now known as CalRecycle. CalRecycle is the agency designated to oversee, manage, and track California's 92 million tons of waste generated each year. CalRecycle provides grants and loans to help

cities, counties, businesses, and organizations meet the State's waste reduction, reuse, and recycling goals. CalRecycle promotes a sustainable environment in which these resources are not wasted but can be reused or recycled. In addition to many programs and incentives, CalRecycle promotes the use of new technologies to divert resources away from landfills. CalRecycle is responsible for ensuring that waste management programs are carried out primarily through local enforcement agencies.

The CIWMA is the result of two pieces of legislation: Assembly Bill (AB) 939 and Senate Bill (SB) 1322. The CIWMA was intended to minimize the amount of solid waste that must be disposed of through transformation and land disposal by requiring all cities and counties to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000.

The 50 percent diversion requirement is measured in terms of per capita disposal expressed as pounds per day per resident and per employee. The per capita disposal and goal measurement system uses an actual disposal measurement based on population and disposal rates reported by disposal facilities, and it evaluates program implementation efforts.

Mandatory Recycling Requirements

AB 341 requires CalRecycle to issue a report to the legislature that includes strategies and recommendations that would enable the state to recycle 75 percent of the solid waste generated in the state by January 1, 2020; requires businesses that meet specified thresholds in the bill to arrange for recycling services by July 1, 2012; and also streamlines various regulatory processes.

Mandatory Commercial Organics Recycling Requirements

In October 2014, AB 1826 Chesbro (Chapter 727, Statutes of 2014) was signed into law, requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings of 5 or more units (multifamily dwellings are not required to have a food waste diversion program, however). Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.

Short-Lived Climate Pollutant Reduction Strategy

In September 2016, SB 1383 (Lara, Chapter 395, Statutes of 2016) was signed into law, establishing methane emissions reduction targets in a statewide effort to reduce emissions of short-lived climate pollutants in various sectors of California's economy. Actions to reduce short-lived climate pollutants are essential to address the many impacts of climate change on human health, especially in California's most at-risk communities, and on the environment.

As it pertains to solid waste, SB 1383 establishes targets to achieve a 50-percent reduction in the volume of statewide disposal of organic waste from 2014 levels by 2020 and a 75-percent reduction by 2025. The law grants CalRecycle the regulatory authority required to achieve the organic waste disposal reduction targets and establishes an additional target that not less than 20 percent of currently disposed edible food is recovered for human consumption by 2025.

California Environmental Quality Act

Appendix F of the State CEQA Guidelines sets forth goals for energy conservation, including decreasing per capita energy consumption and reliance on fossil fuels and increasing reliance on renewable energy sources. CEQA requires EIRs to describe potential energy impacts of projects, with an emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (Public Resources Code [PRC] Section 21100[b][3]).

Integrated Energy Policy Report

The California Energy Commission (CEC) prepares an integrated policy report every 2 years that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety. Energy efficiency is one of the key components of the state's strategy to reduce greenhouse gas emissions (GHGs) and to achieve reduction targets set forth by AB 32, SB 32, and Governor Brown's Executive Order B-30-15. Efficiency achieved through building codes, appliance standards, and ratepayer-funded programs has had a positive impact on GHG emissions in recent years. The most currently adopted 2023 Integrated Energy Policy Report indicates that buildings account for 25 percent of the state's GHG emissions and that decarbonizing buildings is a fundamental part of meeting the state's climate goals (CEC 2024).

Energy Efficiency Strategic Plan

The California Public Utilities Commission (CPUC) 2008 Energy Efficiency Strategic Plan established goals of having all new residential construction in California be zero net energy (ZNE) by 2020 and all new commercial construction ZNE by 2030 (CPUC 2008). The Strategic Plan was subsequently updated in January 2011 to include a lighting chapter.

California Code of Regulations, Energy Efficiency Standards

Energy consumption in new buildings in California is regulated by State Building Energy Efficiency Standards contained in Title 24 of the California Code of Regulations. The Building Energy Efficiency Standards are updated every 3 years. The Energy Code (Title 24, Part 6) contains energy and water efficiency requirements and indoor air quality requirements for newly constructed buildings, additions to existing buildings, and alterations to existing buildings. The most current adopted edition of the Energy Code builds on California's technology innovations, encouraging energy efficient approaches to encourage building decarbonization, emphasizing particularly heat pumps for space heating and water heating. The Energy Code also extends the benefits of photovoltaic and battery storage systems and other demand flexible technology to work in combination with heat pumps to enable California buildings to be responsive to climate change. This update provides crucial steps in the state's progress toward 100 percent clean carbon neutrality by mid-century (CEC 2023b). The California Green Building Code (CALGreen) is contained in Title 24, Part 11, and includes voluntary energy efficiency provisions.

Local

Given the statewide extent of the program and the large number of local and regional agencies responsible for providing water, wastewater, electricity, natural gas, telecommunications, and solid waste services, this EIR does not identify individual local plans, policies, or ordinances that may apply to future composting facilities and

operations. Local jurisdictions maintain their own utility-service standards, infrastructure-capacity requirements, and development policies through general plans, municipal codes, and utility-specific master plans. Implementation of the program is assumed to occur consistent with these locally adopted requirements to the extent that new or co-located composting facilities/operations are subject to them, because local land-use approvals and associated permits typically require compliance with applicable utility-service policies, capacity evaluations, and infrastructure-connection standards.

3.15.2 Environmental Setting

Water

California's water infrastructure (e.g., reservoirs, rivers, aqueducts, groundwater basins, and recycled-water systems) supports municipal, agricultural, industrial, and ecological uses statewide. The state's primary water supplies include Sierra Nevada snowmelt, coastal-range rainfall, imported Colorado River water, and groundwater, which provides about 30 percent of California's annual supply and up to 60 percent during drought conditions. Major conveyance and storage facilities are operated by the U.S. Bureau of Reclamation and DWR through the Central Valley Project and State Water Project.

Local water districts, irrigation districts, special districts, and cities and counties manage the treatment and delivery of water to individual developments, including small and medium composting facilities and operations. Depending on location, future facilities/operations may rely on domestic water service, purchased surface water, groundwater pumped from underlying basins, or recycled water where available. In areas not served by a public water provider, individual projects may need to develop on-site groundwater wells subject to local or State permitting requirements. This statewide variability in water-supply sources and infrastructure informs the evaluation of whether existing systems have sufficient capacity to serve future composting facilities and operations.

Wastewater

California's wastewater system is regulated by the SWRCB and the nine Regional Water Quality Control Boards (RWQCBs), which establish water-quality objectives, issue permits, and enforce discharge requirements for wastewater treatment and disposal. In most urban and developed areas, wastewater collection, treatment, and discharge are provided by local wastewater agencies, cities, counties, or special districts that operate publicly owned treatment works under RWQCB permits.

Because the program as evaluated in this EIR is statewide, future small and medium composting facilities and operations could be located in areas served by municipal sewer systems or in rural areas without centralized wastewater service. Where public wastewater service is available, facilities and operations would connect to the local system subject to capacity review and permitting by the local agency. In areas not served by a wastewater provider, individual projects may need to install on-site wastewater treatment systems such as septic systems or other approved on-site treatment technologies which require review and approval by the local land-use authority and the applicable RWQCB. This statewide variability in wastewater infrastructure informs the evaluation of whether existing systems have sufficient capacity to serve future composting facilities and operations.

Solid Waste

California's solid waste system is regulated by CalRecycle, which oversees the permitting, operation, and enforcement of solid waste disposal and recycling facilities statewide. Local jurisdictions may establish Local Enforcement Agencies (LEAs), approved by CalRecycle, to carry out permitting, inspection, and compliance responsibilities for landfills and recycling facilities within their boundaries.

Solid waste management infrastructure in California varies widely across the state and includes landfills, transfer stations, material recovery facilities, and existing composting facilities and operations. These facilities are owned and operated by cities, counties, special districts, or private companies, and solid waste is typically collected and hauled by public or private service providers under local franchise or service agreements.

Landfill capacity and solid waste handling practices differ by region, with some areas served by large regional landfills and others relying on smaller, locally operated facilities. Individual composting projects would coordinate with the local solid waste service provider (and receiving landfill) to confirm available disposal capacity for residual materials generated during composting operations. This statewide variability in solid waste infrastructure provides the context for evaluating whether existing systems can accommodate the additional residual waste associated with future small and medium composting facilities and operations.

Energy

California's energy system includes an extensive network of electricity generation, transmission, and distribution infrastructure, as well as natural gas pipelines and storage facilities that serve urban, suburban, and rural areas throughout the state. Electricity in California is supplied through the Western Interconnection, a large regional grid spanning multiple states and portions of Canada and Mexico. Power is generated from a diverse mix of resources, including hydropower, solar, wind, geothermal, natural gas, and other renewable and non-renewable sources. Renewable energy, particularly hydropower and solar, accounts for a substantial portion of the state's electricity supply.

Electricity and natural gas service are provided by a combination of investor-owned utilities, publicly owned utilities, and community choice aggregators. The largest electric utilities in California include Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric, while natural gas is supplied through statewide pipeline networks operated by utilities such as PG&E and Southern California Gas Company. Local availability of electricity and natural gas varies depending on proximity to existing distribution lines, substations, and pipeline infrastructure.

Future development sites may be located in areas with full utility service or in more rural areas where electrical infrastructure is limited and natural gas service may not be available. Future development sites may also occur at existing solid waste or composting facilities and operations may be able to use existing utility connections, while new sites may require coordination with local utilities to confirm available capacity or extend service. This variability in energy infrastructure across California provides the context for evaluating whether existing electricity and natural gas systems can accommodate the incremental demand associated with future composting facilities/operations.

Telecommunications

California's telecommunications infrastructure includes a broad network of wired and wireless systems that vary substantially across the state. High-speed internet service is commonly provided through coaxial cable in most

developed areas, with fiber-optic networks expanding in urban centers and some suburban communities. Rural regions often rely on older copper-based systems or limited broadband providers, resulting in slower speeds and more variable service availability.

Wireless telecommunications are supported by statewide 4G LTE and 5G networks operated by major private carriers such as AT&T, Verizon, and T-Mobile. Coverage is extensive in populated areas and along major transportation corridors, with service provided through traditional cell towers and increasingly through "small-cell" nodes in dense urban environments. More remote parts of the state may experience reduced coverage or slower data speeds due to fewer towers and greater distances between network infrastructure.

Future development sites may be located in areas with robust telecommunications service or in rural locations where broadband and wireless connectivity are limited, whereas development at existing solid waste or composting facilities and operations may be able to use existing telecommunications connections. This variability in telecommunications infrastructure across California provides the context for evaluating whether existing systems can support the communication needs of future composting facilities/operations.

3.15.3 Environmental Impacts and Mitigation Measures

Methodology

This analysis includes a program-level, qualitative assessment of impacts related to water supply, wastewater, stormwater, and solid waste. The EIR identifies the types of impacts that may occur throughout the State due to implementation of the reasonably foreseeable compliance responses. There is no attempt to provide site-specific information because the details, such as size and location, of future facilities constructed and operated to comply with the proposed regulation are unknown at this time. For example, water demand for composting is intrinsically tied to maintaining adequate moisture content of the active compost operation. The amount of water required varies widely by feedstock type, regional climate, compost operation, and season.

Water Supply

Impacts related to water supply were identified using a qualitative, program-level approach to estimate water demand associated with construction and operation of future small and medium composting facilities and operations, including composting activities, that may be co-located at existing sites. Anticipated water needs were compared broadly to the availability of municipal, agricultural, groundwater, and recycled-water supplies statewide.

Wastewater

Impacts related to wastewater were evaluated using a qualitative assessment of the types and volumes of wastewater that could be generated by future facilities and whether existing municipal systems or on-site treatment systems typical in rural areas could accommodate those flows. The analysis did not quantify site-specific discharge volumes but instead compared foreseeable wastewater needs to the general capacity of wastewater systems statewide.

Recycled Water

Recycled water impacts were evaluated using a qualitative, program-level approach that considers how future small and medium composting facilities and operations, whether new or co-located at existing sites, could use recycled water for dust control, irrigation, or limited operational needs. The analysis compared foreseeable

recycled-water demand to the general availability of recycled-water systems statewide, recognizing that access varies widely and is typically limited to urban or suburban areas with established treatment and distribution infrastructure.

Energy

Energy impacts were assessed qualitatively by identifying the types of electrical and natural gas demands associated with future composting facilities and operations and comparing them to the general availability of existing utility infrastructure across California. The analysis considered whether incremental demand could necessitate new or expanded energy facilities or whether existing systems could reasonably accommodate project needs.

Solid Waste

Solid waste impacts were evaluated using a qualitative assessment of the residual waste that could be generated during construction and operation of future composting facilities. The analysis compared foreseeable residual waste quantities to the general capacity of landfills, transfer stations, and processing facilities statewide.

Telecommunications

Telecommunications impacts were assessed qualitatively by identifying the communication needs of future composting facilities and operations and comparing them to the general availability of broadband, fiber-optic, and wireless networks across California. The analysis considered whether incremental demand could require new or expanded telecommunications infrastructure or whether existing systems could reasonably support facility operations.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the program would result in a potentially significant impact on utilities and service systems if it would:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.
- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.
- Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments.
- Generate solid waste in excess of state or local standards or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
- Fail to comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Issues Not Discussed Further

Impacts related to energy efficiency are addressed in Section 3.6, "Energy," and impacts related to stormwater are addressed in Section 3.10, "Hydrology and Water Quality," of this EIR. Therefore, these issues are not discussed further within this section.

Composting facilities and operations are, by definition, part of California's solid waste management and reduction system, not generators of new solid waste streams. Federal, state, and local solid waste laws, including the Integrated Waste Management Act, SB 1383, SB 1046, and local solid waste ordinances, require that organic materials be diverted from landfill disposal and processed at permitted facilities. Any small or medium composting facility developed under the program must obtain appropriate permits, comply with CalRecycle regulations, meet local solid waste handling requirements, and operate under conditions that ensure proper management of residual materials.

Because these facilities are designed to recover, process, and beneficially reuse organic materials, they inherently support statutory solid waste reduction goals. Residual solid waste generated at composting facilities is minimal, limited to routine employee waste and incidental contaminants in incoming feedstock, all of which must be disposed of through existing municipal solid waste systems in compliance with federal, state, and local regulations. The facilities themselves do not create new solid waste disposal burdens; instead, they reduce statewide disposal volumes by diverting organic materials away from landfills.

This inherent compliance, combined with the fact that the facilities directly advance SB 1383's and SB 1046's mandated diversion and infrastructure-expansion objectives, means that development of small and medium composting facilities would not adversely affect solid waste systems. Composting facilities are designed to divert organic materials from landfill disposal and operate under permits and conditions that ensure proper handling of residual solid waste. As a result, development of small and medium composting facilities and operations would not increase solid waste disposal demands or conflict with applicable solid waste requirements. These issues are not discussed further in this section.

Environmental Impacts and Mitigation Measures

Impact 3.15-1: Require or Result in New or Expanded Water, Wastewater Treatment, Stormwater Drainage, Electric Power, Natural Gas, or Telecommunications Facilities

Construction and operation of small and medium composting facilities and operations would not require expansion of regional water supply systems, wastewater treatment plants, stormwater conveyance systems, electrical distribution networks, natural gas infrastructure, or telecommunications systems. Impacts would be **less than significant**.

Discussion

Construction of small and medium composting facilities and operations would involve installation of localized, on-site utility improvements typical of small industrial or agricultural operations. These improvements may include:

- On-site water supply connections (municipal tie-ins, on-site wells, or water storage tanks)
- On-site wastewater conveyance (septic systems or municipal connections)
- On-site stormwater drainage features such as retention/detention basins

- Electrical service connections to support blowers, lighting, HVAC, and security
- Limited telecommunications connections for administrative and security functions

These improvements would occur within the facility footprint and would not require expansion of regional utility systems. Any off-site utility extensions such as short laterals to existing water or power lines would be minor, located within existing rights-of-way, and constructed to local jurisdiction standards. Composting facilities and operations are expected to be located in areas where utility infrastructure is already present or readily accessible, minimizing the need for new off-site construction.

Because construction-phase utility improvements would be small in scale, site-specific, and typical of similar industrial development, they would not result in the need for new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities. Therefore, construction-related impacts would be less than significant.

Operational demands for water, wastewater, stormwater, electricity, natural gas, and telecommunications at composting facilities would be modest and consistent with small-scale industrial operations. Water use would support compost moisture management, dust suppression, equipment cleaning, domestic uses, and fire suppression. Wastewater generation would be limited to domestic flows and minor equipment wash water, managed through onsite septic systems or municipal connections. Stormwater would be handled through on-site retention/detention facilities consistent with the Compost General Order (WQ 2020-0012-DWQ). Therefore, operational water demand impacts would be less than significant.

Energy demand would be modest, with electricity primarily needed for aeration blowers, lighting, HVAC, and security systems. Natural gas use, if any, would be limited to administrative buildings. Telecommunications needs would be minimal and restricted to administrative and security functions. Therefore, energy demand impacts would be less than significant.

Because utility demands are small and facilities/operations would likely be located in areas where infrastructure is already available, operation of composting facilities and operations would not require expansion of regional water supply systems, wastewater treatment plants, stormwater conveyance systems, electrical distribution networks, natural gas infrastructure, or telecommunications systems. As part of project-level permitting, proponents would coordinate with local service providers and obtain will-serve letters (or equivalent) confirming adequate service availability. Therefore, utility demand impacts would be less than significant.

Given the limited scale of utility demand and the availability of existing infrastructure, operation of composting facilities and operations under the program would not necessitate construction or expansion of utility facilities. Operational impacts would therefore be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.15-2: Increase Demand for Water Supplies

Given the relatively small size and limited water needs of composting facilities and operations under the program, construction and operational water demand is not anticipated to available supplies or require new water infrastructure. Therefore, the development of small and medium composting facilities and operations under the program would not result in a significant increase in water demand, and impacts would be **less than significant**.

Discussion

Construction of new small and medium composting facilities and operations would require short-term water use for dust suppression during grading and earthwork, soil compaction and moisture conditioning, equipment cleaning, temporary domestic use by construction workers, and fire suppression, if needed during construction. These activities are typical of small industrial or agricultural development and require modest water volumes. Water would be supplied through existing municipal water systems, onsite wells, or temporary water storage tanks, depending on site conditions. Construction water demand would be temporary and would not require expansion of water supply infrastructure. Therefore, construction-phase water demand would be less than significant.

Operational water use at composting facilities and operations would include wetting compost piles to maintain moisture levels, dust suppression on access roads and working surfaces, equipment cleaning, domestic water use in small administrative buildings (drinking fountains, restrooms), and fire suppression systems, if required by local code. Composting sites are generally small (5–11 acres in size) and include limited on-site structures (e.g., 8×20-foot administrative buildings). Operational water demand would be modest and consistent with small-scale industrial uses. For the purposes of this statewide analysis, it is assumed that up to half the annual throughput of a facility/operation may constitute the water demand for that facility. In other words, a 25,000-tpy medium composting facility may require up to 3.3 million gallons of water annually, which is roughly equivalent to the water demand of 25 single-family homes. Water supply would come from existing municipal systems, onsite wells, or onsite water tanks, depending on location.

Because future facility locations are not yet known, project-level review would require coordination with local water providers and issuance of will-serve letters (or equivalent) confirming adequate water supply. Given the relatively small size and limited water needs of a composting facility/operation, operational water demand is not anticipated to exceed available supplies or require new water infrastructure. Therefore, the development of small and medium composting facilities and operations under the program would not result in a significant increase in water demand. Impacts would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.15-3: Increase Demand for Wastewater Treatment

Wastewater generated on-site during the construction and operation of small and medium composting facilities and operations would be controlled on-site and in accordance with existing regulations, including the Compost General Order. Impacts would be **less than significant**.

Discussion

Construction wastewater generation would be minimal and limited to portable sanitation facilities for workers, minor equipment washing, and stormwater runoff managed under construction stormwater permits. Construction activity would not generate process wastewater requiring treatment at a wastewater treatment plant. Construction wastewater would be handled through temporary sanitary facilities or existing municipal systems. Therefore, construction- wastewater impacts would be less than significant.

Operational wastewater generation at composting facilities and operations would include domestic wastewater from administrative buildings, minor wastewater from equipment cleaning, and contact stormwater generated

during composting operations. Operational wastewater would be discharged via onsite septic systems or connections to existing municipal wastewater systems, depending on site conditions.

The Compost General Order (WQ 2020-0012-DWQ) requires separation of contact and non-contact stormwater, on-site containment and management of contact water, prohibition of unauthorized discharge, and compliance with Regional Water Board requirements for reuse or disposal. These requirements substantially limit the volume of wastewater requiring off-site treatment. Domestic wastewater volumes are small because staffing levels are low, and administrative buildings are small. Given these factors, operational wastewater generation would not exceed the capacity of local wastewater treatment providers or require expansion of wastewater treatment facilities. Therefore, operational wastewater treatment demand would be **less than significant**.

Mitigation Measures

No mitigation is required.

3.16 Wildfire

This section evaluates the effects of development of the program on wildfire risk and exposure. The following analysis considers drivers of wildfire risk, and the elements of the project that could add to such risks or expose people or structures to it. This section also provides background and context related to wildfires, including the regulatory setting, and concepts such as wildfire regime, wildfire behavior, and wildfire management practices.

One comment letter regarding wildfire or wildfire risk was received in response to the Notice of Preparation. It requested that the EIR identify potential fire prevention measures.

3.16.1 Regulatory Setting

Federal

There are no federal regulations related to wildfire that apply to the program.

State

California Building Code

The California Building Code (CBC) includes regulations that are consistent with nationally recognized standards of good practice, intended to facilitate protection of life and property. Among other things, its regulations address the hazards of fire explosion, storage, handling and use of hazardous materials and devices, mitigation of conditions considered hazardous to life or property in the use or occupancy of buildings, and provisions to assist emergency response personnel.

Chapter 7 of the CBC details the materials, systems, and assemblies used in the exterior design and construction of new buildings located within a Wildland-Urban Interface Fire Area. A Wildland-Urban Interface Fire Area is defined in Section 702A as a geographical area identified in accordance with Public Resource Code (PRC) Sections 4201 through 4204 and California Government Code Sections 51175 through 51189 be at significant risk from wildfires.

California Fire Code

California Fire Code (CFC) provides standards related to construction, maintenance, and use of buildings. Topics addressed in the CFC include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazard safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The CFC contains specialized technical regulations related to fire and life safety. The CFC is provided in Part 9 of Title 24 of the California Code of Regulations (CCR).

CFC Chapter 49: Requirements for Wildland-Urban Interface Areas

CFC Chapter 49 provides minimum standards to increase building resistance to the intrusion of flame or burning embers projected by a vegetation fire and identifies performance and prescriptive requirements. Section 4906 provides hazardous vegetation fuel management requirements for buildings and structures located on land in a Very High Fire Hazard Severity Zone (VHFHSZ) in Local Responsibility Areas (LRAs) and land in a Moderate Fire Hazard Severity Zone (MFHSZ), High Fire Hazard Severity Zone (HFHSZ), or VHFHSZ in State Responsibility Areas (SRAs). In addition, Section 4907 requires the local entity with jurisdictional authority over areas designated VHFHSZ in LRAs to maintain defensible space near buildings and structures.

California Board of Forestry and Fire Protection

The Board of Forestry and Fire Protection is a Governor-appointed body within the California Department of Forestry and Fire Protection (CAL FIRE). It is responsible for developing the general forest policy of the state, determining the guidance policies of CAL FIRE, and representing the state's interest in federal forestland in California. Together, the Board of Forestry and Fire Protection and CAL FIRE work to carry out the California Legislature's mandate to protect and enhance the state's unique forest and wildland resources.

The Board is charged with developing policy to protect all wildland forest resources in California that are not under federal jurisdiction. These resources include major commercial and non-commercial stands of timber, areas reserved for parks and recreation, woodlands, brush-range watersheds, and all private and state lands that contribute to California's forest resource wealth. In addition, the Board is responsible for identifying VHFHSZ in SRAs and LRAs. Local agencies are required to designate, by ordinance, VHFHSZ and to require landowners to reduce fire hazards adjacent to occupied buildings within these zones (Government Code Sections 51179 and 51182). The intent of identifying areas with very high fire hazards is to allow CAL FIRE and local agencies to develop and implement measures that would reduce the loss of life and property from uncontrolled wildfires (Government Code Section 51176).

PRC Sections 4114 and 4130 authorize the Board to establish a fire plan, which, among other things, determines the levels of statewide fire protection services for SRA lands. The primary goals of the 2024 Strategic Fire Plan for California include both suppression efforts and fire prevention efforts. Government Code Section 65302.5 gives the Board the regulatory authority to evaluate General Plan Safety Elements for their land use policies in the SRA and VHFHSZs, as well as methods and strategies for wildland fire risk reduction and prevention in those areas (CAL FIRE 2024a), which includes projects potentially covered by this EIR.

California Department of Forestry and Fire Protection

CAL FIRE is dedicated to the fire protection and stewardship of over 31 million acres of the state's privately-owned wildlands. In addition, CAL FIRE provides emergency services in 36 of the state's 58 counties via contracts with local governments. PRC Section 4291 gives CAL FIRE the authority to enforce 100 feet of defensible space around all buildings and structures on non-federal SRA lands, or non-federal forest-covered lands, brush-covered lands, grass-covered lands, or any land that is covered with flammable material. PRC Sections 4790 through 4799.04 provide the regulatory authority for CAL FIRE to administer the California Forest Improvement Program. PRC 4113 and 4125 give CAL FIRE the responsibility for preventing and extinguishing wildland fires in the SRA (PRC Sections 4113 and 4125). The PRC, beginning with Section 4427, includes fire safety statutes that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on construction equipment with internal combustion engines; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire suppression equipment that must be provided on site for various types of work in fire-prone areas.

CAL FIRE currently implements vegetation treatments under PRC Sections 4475 through 4495. PRC Sections 4461 through 4471 and 4491 through 4494 authorize CAL FIRE to implement its existing Chaparral Management Program (CMP), now known, in part, as the Vegetation Management Program (VMP). In addition, with the 2005 passage of Senate Bill (SB) 1084, the Legislature modified, and in some cases added language to PRC Sections 4475 through 4480 that:

- Broadened CAL FIRE's range of vegetation treatment practices beyond those described for the existing CMP and VMP.

- Added a definition of "hazardous fuel reduction."
- Made other changes to the major statutory provisions guiding CAL FIRE's vegetation treatment authorities.

In addition, individual CAL FIRE Units develop Unit Fire Plans, which are major strategic documents that establish a set of tools for each CAL FIRE Unit to achieve in its local area. Updated yearly, Unit Fire Plans identify wildfire protection areas, initial attack success, assets and infrastructure at risk, pre-fire management strategies, and accountability within their Units' geographical boundaries. The Unit Fire Plan identifies strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work locally. The plans include contributions from local collaborators and stakeholders and are aligned with other plans for the area, such as Community Wildfire Protection Plans.

Public Resources Code Section 4291

California PRC Section 4291 defines and describes mandatory fire protection measures and responsibilities for maintaining defensible space that apply to all property within SRAs in California. Property owners within SRAs are responsible for ensuring that their property is in compliance with California's building and fire codes that call for homeowners to take proactive steps to protect their property from a wildfire. The law requires that homeowners in SRAs clear out flammable materials such as brush or vegetation around their buildings to 100 feet (or the property line) to create a defensible space buffer. This helps halt the progress of an approaching wildfire and keeps firefighters safe while they defend the property (CAL FIRE 2026a).

CCR Title 14, Division 1.5

CCR Title 14, Division 1.5 establishes regulations for CAL FIRE and is applicable in all SRAs. Among other things, CCR Title 14, Section 1270 et seq. establishes minimum wildfire protection standards in conjunction with building, construction, and development in SRAs. Future design and construction activities in an SRA must provide for basic emergency access and perimeter wildfire protection measures, including private water supply reserves for emergency fire use and vegetation modification.

Executive Order B-52-18

On May 10, 2018, in response to the changing environmental conditions and the increased risk to California's citizens, California Governor Brown issued Executive Order (EO) B-52-18 to support the state's resilience to wildfire and other climate impacts, to address extensive tree mortality, increase forests' capacity for carbon capture, and to improve forest fire management. The Executive Order requires the California Natural Resources Agency, in coordination with the Board of Forestry and Fire Protection, CAL FIRE, and other agencies, to increase the pace and scale of fire fuel treatments on state and private lands. EO B-52-18 committed $96 million in additional state funds to these efforts and calls for doubling the land actively managed through vegetation thinning, prescribed burning, and restoration from 250,000 to 500,000 acres per year to reduce wildfire risk.

Senate Bill 1260

On February 15, 2018, Governor Brown signed SB 1260, which aims to help protect California communities from catastrophic wildfire by improving forest management practices to reduce the risk of wildfires in light of the changing climate. It recognizes that prescribed burning is an important tool to help mitigate and prevent the impacts of wildfire and includes provisions that encourage more frequent use of prescribed fire in managing California's forest lands.

Senate Bill 901

In August 2018, the California State Legislature passed Senate Bill 901. The bill was implemented to address wildfire liability of public utilities. The bill requires utility companies to develop annual wildfire mitigation plans. Additionally, the bill allows companies to increase prices for rate payers to recover costs associated with wildfire damages.

General Plan Safety Elements – Wildfire Hazard and Risk Reduction Requirements

SB 1241 (Kehoe, Chapter 311, Statutes of 2012) revised the safety element provisions in state law to require all cities and counties whose planning area is within the SRA or VHFHSZs to address and incorporate specific information regarding wildfire hazards and risk and to adopt policies and programs to address and reduce unreasonable risks associated with wildfire. The specific requirements are codified in Government Code Sections 65302(g)(3) and 65302.5(b).

Emergency Response and Evacuation Plans

The State of California Emergency Plan was most recently adopted on October 9, 2024. The Plan describes how state government mobilizes and responds to emergencies and disasters in coordination with partners in all levels of government, the private sector, non-profits, and community-based organizations. The Plan also works in conjunction with the California Emergency Services Act and outlines a robust program of emergency preparedness, response, recovery, and mitigation for all hazards, both natural and human-caused. All local governments with a certified disaster council are required to develop an emergency operations plan for their jurisdiction that meets State and federal requirements. Local emergency operations plans contain specific emergency planning considerations, such as evacuation and transportation, sheltering, hazard specific planning, regional planning, public-private partnerships, and recovery planning (Cal OES 2024).

Local

Given its statewide extent and the possible number of local and regional responsible agencies, this EIR does not identify individual, potentially applicable local government plans, policies, and ordinances. Types of local regulations relevant to wildfire issues may include general plan policies and ordinances, community wildfire protection plans, emergency response/operations plans, and emergency evacuation plans. This EIR assumes that the reasonably foreseeable compliance responses associated with implementation of the program would be consistent with local plans, policies, and ordinances to the extent that anticipated organic waste recovery infrastructure projects are subject to them, because local land use and permit approvals are typically conditioned upon such consistency.

Contract County Fire Plans

In most cases, the SRA is protected directly by CAL FIRE; however, in Kern, Los Angeles, Marin, Orange, Santa Barbara, and Ventura Counties, SRA fire protection is provided by the counties under contract to CAL FIRE. Known as “Contract Counties,” they protect 3.4 million acres of SRA. CAL FIRE provides funding to the 6 counties for fire protection services including wages of suppression crews, lookouts, maintenance of firefighting facilities, fire prevention assistants, pre-fire management positions, dispatch, special repairs, and administrative services. The funds also support infrastructure improvements and expanded firefighting needs when fires grow beyond initial attack. Contract Counties develop and annually update their own Fire Plans to establish a set of tools for a Contract County to achieve in its local area (CAL FIRE 2026b).

3.16.2 Environmental Setting

Wildfire Regime

The wildfire regime describes the spatial and temporal patterns and ecosystem impacts of fire on the landscape. It is characterized by fire frequency, intensity, severity, and area burned. “Fire frequency” refers to the number of fires that occur in a given area over a given period of time; “fire intensity” refers to the speed at which fire travels and the heat that it produces; “fire severity” involves the extent to which ecosystems and existing conditions are affected or changed by a fire; and “area burned” is the size of the area burned by wildfire. Fire hazard severity zones as designated by CAL FIRE and local agencies throughout the state is identified in Figure 3.16-1.

Wildfire Behavior and Controlling Factors

Wildfire behavior is a product of several variables that intermix to produce local and regional fire regimes that affect how, when, and where fires burn. Chief among these are climate, vegetation, topography, and human influence. It is important to understand how the variables that affect fire behavior produce fire risks.

Some of the variables that control wildfire behavior, namely, climate, vegetation, and human influence (discussed in the following section), are rapidly changing in California and elsewhere, and these changes are increasing our susceptibility to fire danger and causing wildfire to become more hazardous throughout the state. Warming, frequent droughts, and the legacy of past management policies, combined with the increase in development and expansion of the wildland-urban interface (WUI), have increased the risk of catastrophic damage during wildfires, which poses a substantial threat and cost to society. Recent trends have shown an increase in the number of ignitions, area burned, and impacts on ecosystems since 2007. In every year since 2000, the average annual acres burned in California has more than doubled the annual average during the 1960s (Board and CAL FIRE 2018). The 5-year annual average number of acres burned is 306,737 as of July 2026 (CAL FIRE 2026c). This trend is expected to continue, and wildfire frequency and severity in California are anticipated to increase over the next century.

Human Influence on Wildfire

Human influence on wildfire is broad and can be substantial. It includes direct influences, such as the ignition and suppression of fires, and indirect influence through climate change and alterations in land use patterns that support modified vegetative regimes and increased development in the WUI (refer to “Climate Change and Wildfire” section of this document, for more discussion on the indirect effect of climate change on wildfire).

Anthropogenic influence more directly controls fire frequency than size of a burn because humans are responsible for most wildfire ignitions. After a fire has started, its spread and behavior become a function of fuel characteristics, terrain, and weather conditions (Syphard et al. 2008). Human-induced wildfire ignitions can change fire characteristics in two ways: (1) changing the distribution and density of ignitions, and (2) changing the seasonality of burning activity (Balch et al. 2017). A study of wildfires across the United States for the 20-year period between 1992 and 2012 showed that 82 percent of wildfires during that period were started by human causes (Balch et al. 2017), while in California specifically, humans account for starting approximately 95 percent

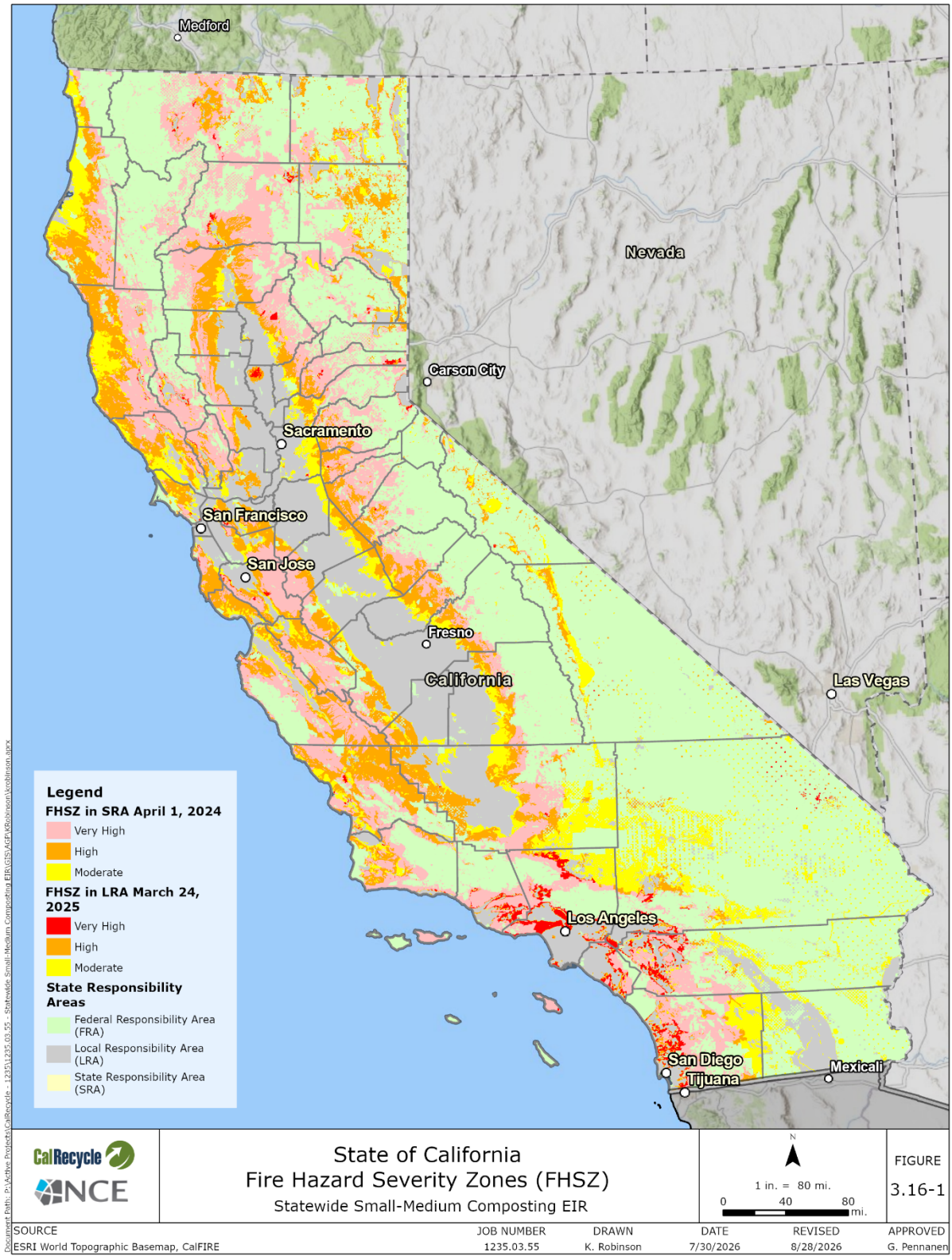


Figure 3.16-1. Fire Hazard Risk Severity Zones in California

of wildfires (Syphard et al. 2007). In California in 2025, more than half of all fires were caused by humans; when miscellaneous and undetermined causes are included in that statistic, it increases to 88 percent (CAL FIRE 2025).

Human ignitions include a multitude of sources, including escapes from debris and brush-clearing fires, electrical equipment malfunctions, campfire escapes, smoking, fire play (e.g., fireworks), vehicles, and arson. Consequently, areas near human development, especially in the WUI and along infrastructure corridors, such as roads or electrical transmission lines, generate fires at more frequently than very remote or urban areas (Syphard et al. 2007, Mann et al. 2016, Balch et al. 2017).

In California, electrical power and equipment use are common sources of wildfire ignition. "Electrical power" refers to electrical power distribution or transmission, and "equipment use" refers to the use or failure of mechanical or electrical equipment, excluding powerlines. Equipment use encompasses many of the facilities and infrastructure that would be developed under the program. In 2025, the most recent year for which data are available, electrical power and equipment use together accounted for 17 percent of fires in SRAs, or 642 of 3,693 total fires (CAL FIRE 2025).

Climate Change and Wildfire

Wildfires are a significant threat in California, particularly in recent years as the landscape responds to climate change and decades of fire suppression. It is estimated that since 1985, more than 50 percent of the increase in the area burned by wildfire in the western United States is attributable to anthropogenic climate change (Abatzoglou and Williams 2016). As climate change persists, it will produce increasing temperatures and drier conditions that will generate abundant dry fuels. Both natural and anthropogenic wildfires tend to be larger under drier atmospheric conditions and when fed by drier fuel sources (Balch et al. 2017).

Additionally, climate change has led to exacerbation of wildfire conditions during a longer period of the year as the spring season has warmed and as winter precipitation has decreased overall (Westerling et al. 2006). Further, wildfire activity is closely related to temperature and drought conditions, and in recent decades, increasing drought frequency and warming temperatures have led to an increase in wildfire activity (Westerling et al. 2006, Schoennagel et al. 2017). In particular, the western United States, including California, has seen increases in wildfire activity in terms of area burned, number of large fires, and fire season length (Westerling et al. 2006, Abatzoglou and Williams 2016). In recent years, these conditions have produced the largest wildfires on record in California history; the 2018 Mendocino Complex, the state's largest ever wildfire, burned 1.5 times as many acres as the next largest fire. Nine of the state's 10 largest wildfires have occurred since 2003 (Table 3.16-1).

While very large and destructive fires attract the most attention in press coverage and public awareness, from the perspective of wildfire risk reduction, it is also critical to understand and address the more frequent and more widespread smaller fires. Total burned acreage in California can be highly variable, from fewer than 150,000 acres in 2010 to more than 1 million acres in 2024 (CAL FIRE 2024b). In 5 of the last 12 years (2017, 2018, 2020, 2021, and 2024), total burned acreage in California has exceeded 1.0 million acres (CAL FIRE 2017, 2018, 2020, 2021, and 2024a). In 2020, over 4 million acres burned in the state during the calendar year (CAL FIRE 2020).

Table 3.16-1. Largest California Wildfires

Fire Name (Cause)	Acres	Date	County
August Complex (Lightning)	1,032,648	August 2020	Mendocino, Humboldt, Trinity, Tehama, Glenn, Lake, Colusa
Dixie (Powerlines)	963,309	July 2021	Butte, Plumas, Lassen, Shasta, Tehama
Mendocino Complex (Human Related)	459,123	July 2018	Colusa, Lake, Mendocino, Glenn
Park Fire (Arson)	429,603	July 2024	Butte, Plumas, Shasta, Tehama
SCU Lightning Complex (Lightning)	396,625	August 2020	Stanislaus, Santa Clara, Alameda, Contra Costa, San Joaquin
Creek (Undetermined)	379,895	September 2020	Fresno, Madera
Lnu Lightning Complex (Lightning/Arson)	363,220	August 2020	Napa, Solano, Sonoma, Yolo, Lake, Colusa
North Complex (Lightning)	318,935	August 2020	Butte, Plumas, Yuba
Thomas (Powerlines)	281,893	December 2017	Ventura, Santa Barbara
Cedar (Human Related)	273,246	October 2003	San Diego

Source: Caltrans 2024c

Climate change will continue to produce conditions that facilitate a longer fire season, which, when coupled with human-caused changes in the seasonality of ignition sources, will produce more, longer, and bigger fires during more times of the year. According to California's Fourth Climate Change Assessment, Statewide Summary Report (Bedsworth et al. 2018), if GHG emissions continue to rise, the frequency of extreme wildfires burning over 25,000 acres could increase by 50 percent by 2100, and the average area burned statewide could increase by 77 percent by the end of the century (Bedsworth et al. 2018). Refer to Section 3.8, "Greenhouse Gas Emissions and Climate Change," for additional discussion of climate change trends and the effects of climate change on the environment.

Wildfire Risk Reduction

Historically, humans have intervened deliberately and dramatically in the fire regime through fire suppression and, more recently, actions that affect fuel connectivity. The legacy land management practice of fire suppression has led to a buildup of forest fuels and an increase in the occurrence and threat of large, severe fires (Westerling et al. 2006). With the expansion of the WUI and the threat that large, severe, intense wildfires pose, fire suppression remains the primary management technique for over 95 percent of wildfires in the United States (Schoennagel et al. 2017).

Contemporary fire management practices include fuel management activities that are intended to reduce the intensity and severity of wildfires. Modern wildfire management practices may also encompass actions targeted at reducing human wildfire ignition through education programs. Contemporary fire management practices include fuel management activities that are intended to reduce the intensity and severity of wildfires. Modern wildfire management practices may also encompass actions targeted at reducing human wildfire ignition through education programs.

Vegetation (Fire Fuel) Management

Vegetation treatment is the primary approach to wildfire management because it can reduce the intensity and severity of wildfire, slowing fire movement and creating favorable conditions for firefighting to protect targeted, high-value resources (Carey and Schumann 2003, Prichard et al. 2010). Fuel reduction has proven successful where it is targeted at protecting specific resources in limited geographic areas, such as in areas of extreme fire danger or in the WUI (Loudermilk et al. 2014). Areas that are treated often exhibit different fire progression and severity characteristics from areas that are not treated. While evidence has not yet definitively concluded that forest fuel treatments lead to a reduction in the overall size of a fire (USFS 2009, Schoennagel et al. 2017), such treatments can aid in protecting public safety and structures by reducing wildfire intensity and severity in treated areas under normal fire conditions and by increasing firefighting effectiveness.

Community Wildfire Hazard Reduction Programs

Fire-adapted communities are communities located in a fire-prone area that require little assistance from firefighters during a wildfire. The general elements of a fire-adapted community are (University of Nevada 2010):

- Community protection: fuel breaks and safe areas are well-designed.
- Defensible space: vegetation surrounding the home is properly managed.
- Access: emergency responders can arrive in a timely manner.
- Evacuation: communities can evacuate safely and effectively.
- Built environment: home construction and maintenance is appropriate and can resist ignitions.

Implementing community wildfire hazard reduction practices is an important component of establishing a fire-adapted community; key practices include establishing defensible space and implementing home hardening features. Homes have become one of the most combustible parts of the landscape and are increasingly vulnerable as development extends into the WUI; in certain cases, trees may survive a fire while a home may burn. There are several requirements for the maintenance of defensible space in and around structures/facilities within both PRC and California Government Code. For example, PRC Section 4291, “Clearance Around Structures,” requires individual homeowners to clear and remove vegetation around homes and buildings. Compliance with PRC Section 4291 is required by any person who owns, leases, controls, operates, or maintains a building or structure in or adjoining any mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or any land that is covered with flammable material and is within the SRA. PRC Section 4291 requires 100 feet of defensible space (or to the property line if less than 100 feet) from every building or structure that is used for support or shelter of any use or occupancy. CAL FIRE has developed specific defensible space guidelines to help individuals and local agencies implement and maintain defensible space.

Land Use Decision-Making

Another important consideration for wildfire risk reduction is land use decision-making in cities and counties. The authority to approve land uses rests with local government, rather than with the State. Risk of damage, injury, and loss of life can increase by placing structures and occupied land uses in harm's way when development is approved by cities or counties and implemented by property owners within fire hazard areas. While millions of California residents currently live in VHFHSZs, making development decisions to avoid increasing residential uses in these hazard zones has been an important and growing topic for California land use planning. One important tool will be mandated wildfire sections of local general plans. Currently, city and county general plans must include a public safety element, and in the past, there have been no standards to which this element had to be prepared. Recent policy requires that safety elements of local general plans must be revised, upon the next update to the housing element, to address SRAs and VHFHSZs. The revisions must include information about wildfire hazards, as well as goals, policies, and feasible implementation measures for the protection of the community from the unreasonable risk of wildfire (Governor's Office of Planning and Research [OPR] 2022). In 2022, the OPR, now referred to as the Governor's Office of Land Use and Climate Innovation (LCI), has developed a technical advisory to help provide a robust fire hazard mitigation program to California communities, including a suite of voluntary recommendations and potential actions local governments can take to reduce community wildfire risk (OPR 2022). In addition, programs have been developed to help local governments reduce wildfire risks, reduce associated costs, and create fire-adapted communities. For example, Community Planning Assistance for Wildfire was developed in response to increasing wildfire risk nationwide and works to help communities become better fire-adapted through improved land use planning (Headwaters Economics 2018). Local land use planning and decision-making will continue to play an important role in community wildfire risk reduction and will need to work in tandem with State and federal efforts to most effectively reduce community wildfire risks.

3.16.3 Environmental Impacts and Mitigation Measures

Methodology

This impact analysis considers the potential for increased wildfire risk from the implementation of the project in terms of exposure of more people and structures to wildfires, and of the potential for increased wildfire frequency and intensity. It also evaluates the effects of implementing the project on emergency planning and evacuation in the event of a wildfire, and any conflicts with existing emergency plans and policies. To determine the potential increased risks associated with the project, the baseline condition (i.e., existing wildfire risk) was established as of the date the Notice of Preparation was published. In doing this, natural conditions and existing features of the project area landscape contributing to wildfire risk, as well as emergency ingress and egress, and other emergency planning features that reduce risks, are presented and discussed in the impacts in the following "Thresholds of Significance" section.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the program would result in a potentially significant impact with respect to wildfire if it would:

- Substantially impair an adopted emergency response plan or emergency evacuation plan.

- Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
- Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.
- Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Issues Not Discussed Further

The effects of the installation or maintenance of infrastructure on other environmental resources are addressed in the applicable resource sections throughout this EIR. "Infrastructure," in this case, refers to the roads, utility connections, and other supporting facilities that may be associated with small and medium composting facilities and operations developed under the program. Such effects are varied and may affect numerous resources, including biology (addressed in Section 3.5, "Biological Resources"), hydrology (addressed in Section 3.10, "Hydrology and Water Quality"), hazards (addressed in Section 3.9, "Hazards and Hazardous Materials"), and scenic resources (addressed in Section 3.1, "Aesthetics").

Environmental Impacts and Mitigation Measures

Impact 3.16-1: Impair Planned Wildfire Emergency Response or Evacuation

Small and medium composting facilities and operations could be developed throughout the state and could likely be developed at or near existing waste management facilities or in areas zoned for industrial or other appropriate use. In the event of a wildfire, such facilities would be attended to by the appropriate local response agency and according to existing wildfire emergency response plans or evacuation plans for the area. These facilities would be of limited number throughout the state and would have a limited number of employees. However during construction, temporary disruptions may occur along emergency evacuation routes, and as a result, this impact would be **potentially significant.**

Discussion

In the event of an emergency, such as a wildfire, evacuation coordination is dealt with at various levels of government through State, federal, or local agencies as appropriate. CAL FIRE is responsible for coordinating wildfire response and protection within SRAs. CAL FIRE does not have responsibility for fire response in LRAs or Federal Responsibility Areas, which are defined based on land ownership, population density, and land use. These areas include densely populated areas, such as cities and towns; agricultural lands; and lands administered by the federal government. In densely populated areas, local fire departments respond to fires and emergencies. Fire response on federal lands is coordinated by the appropriate federal agency. For example, on National Forest System lands, the U.S. Forest Service coordinates fire response, and on lands administered by the U.S. Bureau of Land Management (BLM), BLM coordinates fire response.

The program does not involve actions that would alter existing fire response or evacuation plans. Small and medium composting facilities and operations would tie into existing infrastructure and be developed in appropriately zoned areas. They would adhere to existing zoning regulations, CAL FIRE regulations, and existing evacuation plans. As such, facilities and operations under the program are not anticipated to require or result in the alteration of existing evacuation routes. Facilities and operations would likely be developed in areas that are

zoned for industrial or other appropriate uses; therefore, changes or modifications to existing fire response and evacuation plans would not be necessary. Furthermore and as noted in Chapter 2, "Project Description," each facility is anticipated to require up to 12 employees (for medium composting facilities) on site. As such, projects implemented under the program would not create growth substantial enough to impede emergency response or affect evacuation route capacity. However, construction of small and medium composting facilities and operations may occur along emergency evacuation routes, which could cause temporary disruptions to the flow of traffic along such routes. As such, this impact would be considered **potentially significant**.

Mitigation Measures

Implement Mitigation Measure 3.14-1.

Significance after Mitigation

Implementation of Mitigation Measure 3.14-1 would reduce impacts from construction-related traffic because as part of the planning, design, and engineering for future projects, the implementing agency would implement measures to minimize overall disruptions and ensure that overall circulation (including emergency access and routes) in a project area is maintained. Implementation of the mitigation measure at a project level would ensure that for each project under the program, a transportation construction plan is prepared by the project proponent and is implemented and maintained throughout all construction phases. The implementation and maintenance of the transportation construction plan as part of this mitigation measure would ensure that temporary disruptions to the flow of traffic along potential emergency evacuation routes are **less than significant**.

Impact 3.16-2: Substantially Worsen Wildfire Risk Related to Infrastructure Development

The program would involve development of composting facilities/operations and associated infrastructure. Such infrastructure developments, including the facilities themselves, could increase the risk of wildfire ignitions. However, development standards, safety inspections, and regulatory oversight substantially reduce the risk of wildfire ignitions caused by infrastructure, especially electrical infrastructure. Adherence to State minimum standards (14 CCR 17867[a][9]) that apply to all compostable materials handling operations related to fire prevention, protection, and control measures would ensure that program implementation would not introduce substantial wildfire risk. Consequently, this impact would be **less than significant.**

Discussion

Development of compost facilities and operations would require either expanding existing waste management sites or developing new sites in areas zoned appropriately for such uses. Development associated with small and medium composting facilities/operations may require expanding existing infrastructure or adding new infrastructure to accommodate these facilities/operations. In some cases, depending on the distance between new facilities and existing power connections that can accommodate the required electrical demand or generation, new electrical transmission or distribution lines may be required. Such infrastructure systems could contribute to an increased risk of wildfire ignitions. Ignitions of this type are unpredictable because they can occur at any point in the electrical grid, including in remote areas where immediate access to fire suppression may not be possible.

New aerated static pile and windrow compost facilities and operations would be constructed under the program and would require power connections to operate. While the precise locations of future small and medium compost facilities and operations are unknown and would be subject to approval by local jurisdictions, it is

anticipated that these operations and facilities would be sited near or at existing waste disposal sites or landfills. Consequently, new electrical infrastructure demands would be limited.

Compost operations can pose a unique fire risk related to the spontaneous combustion of material. Spontaneous combustion in a compost pile can occur as a result of biological processes, which can create temperatures high enough to sustain heat-releasing chemical reactions (between 200 °F and 300 °F for organic materials; Coker 2019). Compost piles that are too tall, have reduced moisture content or limited air flow, or include a non-uniform mix of materials are likely candidates of spontaneous combustion because they prevent composting materials from cooling properly. Best management practices for compost operations to minimize fire risk include keeping compost piles small (less than 12 feet in height), monitoring moisture content and internal pile temperature, maintaining aisles between piles and on-site soil stockpiles for fire suppression, and isolating equipment from piles (Coker 2019, 2021). Fires at composting facilities occur frequently (Coker 2019). Planning for proper procedures to prevent fires, and to manage them when they occur, are key components of every facility's operation protocol.

In accordance with 14 CCR Section 17867 (9), operators of compostable materials handling operations and facilities must also implement minimum State requirements to provide fire prevention, protection, and control measures, including, but not limited to, temperature monitoring of windrows and piles, adequate water supply for fire suppression, and the isolation of potential ignition sources from combustible materials. Fire lanes must also be provided to allow fire control equipment access to all operation areas. Collectively, these standard operational practices and design standards minimize the risk of spread of fire.

In addition to the risk of wildfire ignition from facilities implemented under the program, there are environmental consequences related to other wildfire risks, including wildfire intensity and size. It is currently not known where individual facilities would be built or where new electrical support infrastructure would be required. Although placement of new facilities in areas of high wildfire hazard would expose both workers and the facility structures themselves to wildfire events, with the exception of the risk of fire ignition, it is unlikely that placement of such facilities alone would contribute to a worsening of wildfire characteristics (i.e., intensity, severity, or size of fires).

Although new infrastructure could increase the risk of wildfire starts, new safety initiatives, development standards, and regulatory oversight for electric utilities have been implemented in response to numerous devastating wildfires in California in recent years. These efforts aim to reduce the risk of wildfire ignition associated with such facilities and include the provisions of SB 901, such as the implementation of wildfire mitigation plans, collaboration between utilities and CAL FIRE, and retention by California Public Utilities Commission (CPUC) of independent evaluators that can assess the safety of electrical infrastructure. Additionally, new facilities would be subject to the applicable chapters of the California Fire Code and any additional local provisions identified in local fire safety codes. These factors (adherence to local plans, policies, codes, and ordinances; adherence to the California Fire Code and the provisions of wildfire prevention plans; and oversight by CPUC) would substantially reduce the risk of wildfire ignitions caused by infrastructure development. Consequently, this impact would be **less than significant.**

Mitigation Measures

No mitigation is required.

Impact 3.16-3: Substantial Risk Related to Postfire Flooding or Landslides

Wildfire creates conditions that increase the risk of postfire flooding and mass wasting events. However, the program would result in a limited number of new structures and personnel to staff them, which would limit possible exposure during such events. Additionally, new facilities/operations and associated infrastructure would be subject to local geotechnical and hydrological code requirements, which would reduce possible risks to structures associated with flooding or unstable geological conditions. Therefore, this impact would be **less than significant.**

Discussion

Moderate- to high-severity wildfire can greatly increase the likelihood of debris flows and landslides; reduce hydrologic function of soils, leading to uncontrolled runoff; and cause degradation of soil structure and productivity. See Chapter 3.7, "Geology and Soils," for background information on soils and geomorphological processes. Rainstorms following wildfire can generate flash flooding and debris flows, which can affect people or structures located below an area that has burned.

A modest number of new structures would be constructed throughout the state, and a limited number of personnel would be required to operate the facilities/operations. Further these facilities would be located within predominantly flat areas where the potential for soil-related risks would be minimal. These structures would be subject to local codes regulating development of projects, including codes addressing geotechnical and hydrological considerations. Therefore, exposure of people or structures to risks related to postfire flooding or mass wasting would be limited. This impact would be **less than significant.**

Mitigation Measures

No mitigation is required.

4 Cumulative Impacts

4.1 Introduction to the Cumulative Analysis

As required by Section 15130 of the California Environmental Quality Act Guidelines (State CEQA Guidelines), this EIR provides an analysis of cumulative impacts of the proposed program taken together with other past, present, and reasonably foreseeable future projects producing related impacts. The goal of such an exercise is twofold: first, to determine whether the overall long-term impacts of all such projects would be cumulatively significant; and second, to determine whether the incremental contribution to any such cumulatively significant impacts by the project would be "cumulatively considerable" (and thus significant). (See State CEQA Guidelines Sections 15130[a]–[b], Section 15355[b], Section 15064[h], and Section 15065[c]; and Communities for a Better Environment v. California Resources Agency [2002] 103 Cal. App. 4th 98, 120.) In other words, the required analysis intends first to create a broad context in which to assess cumulative impacts, viewed on a geographic scale beyond the project site itself, and then to determine whether the project's incremental contribution to any significant cumulative impacts from all projects is itself significant (i.e., "cumulatively considerable").

Cumulative impacts are defined in State CEQA Guidelines Section 15355 as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." A cumulative impact occurs from "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" (State CEQA Guidelines Section 15355[b]).

Consistent with State CEQA Guidelines Section 15130, the discussion of cumulative impacts in this EIR focuses on significant and potentially significant cumulative impacts. Section 15130(b) of the State CEQA Guidelines provides, in part, the following:

> [t]he 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.

A proposed project is considered to have a significant cumulative effect if:

- The cumulative effects of development without the project are not significant and the project's additional impact is substantial enough, when added to the cumulative effects, to result in a significant impact.
- The cumulative effects of development without the project are already significant and the project contributes measurably to the effect.

The term "measurably" is subject to interpretation. The standards used herein to determine measurability are that the impact must be noticeable to a reasonable person or must exceed an established threshold of significance (defined throughout the resource sections in Chapter 3 of this EIR).

4.2 Approach to Cumulative Analysis

The State CEQA Guidelines identify two basic methods for establishing the cumulative context within which a project is considered: (1) the use of a list of past, present, and probable future projects, and (2) the use of adopted projections from a general plan, other regional planning document, or a certified EIR for such a planning document (Section 15130). A combination of these approaches may also be used. The following describes the approach used for evaluating the cumulative impacts of the proposed regulation.

The proposed regulation is applicable statewide over a long-term future horizon to achieve organic waste disposal reduction and edible food recovery targets. Consequently, the impact analyses for the resource topics in Chapter 3 of this Draft EIR are programmatic in that they address the statewide context of impacts in a general manner, rather than describe potential site-specific or project-specific effects. This EIR contains a description and analysis of a series of reasonably foreseeable compliance actions that are part of a statewide program. The descriptions of mitigation measures presented in Chapter 3 provide generally recognized methods to reduce significant and potentially significant impacts but do not offer details related to specific project locations or design characteristics, because the locations and project plans cannot be known at this time. As a result of the statewide context of the environmental analysis, the impact conclusions and mitigation measures in the sections of Chapter 3 are easily integrated into cumulative impacts because they describe the potential effects associated collectively with the full range of reasonably foreseeable compliance responses related to implementing the proposed regulation.

4.2.1 Related Projects

Taking into consideration the statewide nature of the program as well as the potential for cumulative impacts within that context, CalRecycle has identified several relevant projects/programs that could result in related impacts and would be considered part of the cumulative context. These include:

- Senate Bill (SB) 1383 – Short-lived Climate Pollutants Regulations
- Assembly Bill (AB) 827 – Commercial Organics and Recycling Collection
- AB 1826 – Mandatory Commercial Organics Recycling
- SB 279 – Solid Waste: Compostable Materials
- California Vegetative Treatment Program
- Healthy Soils Initiative

Senate Bill 1383

SB 1383 (Chapter 395, Statutes of 2016) established two targets by 2025, including a 75% reduction of statewide organics waste disposal from 2014 levels, and 20% or greater recovery (for human consumption) of edible food currently disposed of in California. Among other things, compliance with the regulatory framework and organic waste reduction targets established by SB 1383 is expected to result in development of new and expanded composting facilities, anaerobic digestion facilities, chipping and grinding facilities, recycling facilities, biomass conversion facilities, and enhanced organic waste recovery.

Assembly Bill 827

As passed in 2019, AB 2019 requires commercial food service businesses that do not provide full service (i.e., customers are seated and served by staff) to provide accessible recycling and organic waste bins next to every front-of-house trash can.

Assembly Bill 1826

As passed in 2014, AB 1826 requires businesses and multifamily residential developments that generate at least 2 cubic yards of solid waste per week to recycle organic waste.

Senate Bill 279

As passed in 2025, SB 279 modified and expanded one of the regulatory tiers established by CalRecycle for solid waste handling facilities, including composting facilities and operations. Prior to its passage, the lowest tier (Excluded) had an established limit for on-site material of 100 cubic yards (cy) and 750 square feet (sf) of operation. SB 279 expanded that regulatory tier to 500 cy and 750 sf. SB 279 also required a composting operation to be included in the enforcement agency Notification (second) tier and authorized the operation to accept up to 10%food material by volume for a period not to exceed 5 years before applying for a full solid waste facility permit if specified conditions were met.

California Vegetation Treatment Program

The California Vegetation Treatment Program (CalVTP) is a statewide program of the California Board of Forestry and Fire Protection implemented to reduce fire fuel and reduce wildfire risk. The California Department of Forestry and Fire Protection (CAL FIRE) has the primary responsibility to implement CalVTP. The intent of this program is to reduce wildfire risk to diminish or avoid the harmful effects of wildfire on people, property, and natural resources. The program provides for vegetation treatment activities and expands upon vegetation treatment practices that were previously occurring under CAL FIRE's Vegetation Management Program. Vegetation treatment activities include manual and mechanical treatments in the wildland-urban interface area and can result in the generation of woody biomass. The existing program does involve the creation of organic waste feedstock materials capable of being processed at composting facilities and operations. As of the writing of this EIR, CalVTP is undergoing an update that includes consideration of 1) an expansion of the treatable landscape for vegetation treatment regardless of fire suppression responsibility designations; 2) incorporation of the disposition of biomass (including commercial sale) into the program; 3) recognition of the dual objectives of cultural resource protection and ecological restoration through vegetation management; 4) clarification and revision of standard project requirements and mitigation to promote efficiency; and 5) increased efficiency of the subsequent analysis process for vegetation treatment activities covered by CalVTP.

Healthy Soils Initiative

California's Healthy Soils Initiative is a collaboration of State agencies and departments, led by the California Department of Food and Agriculture, to promote the development of healthy soils on California's farmlands and ranchlands. Actions related to the Healthy Soils Initiative are to:

- protect and restore soil organic matter in California's soil;
- identify sustainable and integrated financing opportunities;

- provide for research, education, and technical support;
- increase governmental efficiencies to enhance soil health on public and private lands; and
- promote interagency coordination and collaboration.

The Healthy Soils Program (HSP) stems from the California Healthy Soils Initiative and has 2 components: the HSP Incentives Program and the HSP Demonstration Projects. The HSP Incentives Program provides financial assistance for implementation of conservation measures that improve soil health, sequester carbon, and reduce greenhouse gas (GHG) emissions. The HSP Demonstration Projects showcase California farmers' and ranchers' implementation of HSP practices. The program evaluated in this EIR, like SB 1383, would support the California Healthy Soils Initiative by facilitating the development of small and medium composting facilities and operations that produce finished compost that could be used to improve the health of the state's soils. Healthy soils reduce GHG emissions (a primary objective of SB 1383 and as noted in Section 3.9, "Greenhouse Gas Emissions and Climate Change"); improve crop yields, drought and flood tolerance, and air and water quality; and reduce water demand.

4.3 Analysis of Cumulative Impacts

The following sections contain an analysis of the potential cumulative effects from implementation of the program, together with related projects for each of the 16 environmental issue areas evaluated in the EIR. The analysis conforms with Section 15130(b) of the State CEQA Guidelines, which specifies that 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.

For purposes of this EIR, the project would result in a significant cumulative effect if:

- The cumulative effects of related projects (past, present, and reasonably foreseeable future projects) are not significant and the incremental impact of implementing the project is substantial enough, when added to the cumulative effects of related projects, to result in a new cumulatively significant impact.
- The cumulative effects of related projects (past, present, and reasonably foreseeable future projects) are already significant and implementation of the project makes a considerable contribution to the effect. The standards used herein to determine a considerable contribution are that either the impact must be substantial or must exceed an established threshold of significance.

This cumulative analysis assumes that all mitigation measures identified in Chapter 3, "Environmental Impacts and Mitigation Measures," to mitigate project-level impacts are adopted and implemented. The analysis herein analyzes whether, after implementation of project-specific mitigation and performance criteria that minimize environmental effects, the residual impacts of the project would contribute considerably to existing/anticipated (without the project) cumulatively significant effects. Where the project would result in a cumulatively considerable contribution, additional mitigation is recommended where feasible.

4.3.1 Aesthetics

Implementation of the statewide programs listed in Section 4.2.1 would result in further development throughout the state, including anaerobic digesters and other organic waste recovery facilities, renewable energy projects, and other infrastructure to support GHG reduction programs. There is uncertainty as to the specific location of the potential new development. Construction could require disturbance of undeveloped land, such as clearing of vegetation; earth movement and grading; trenching for utility lines; erection of new buildings; and paving of parking lots, delivery areas, and roadways. These activities would have the potential to adversely affect aesthetic conditions in the area of the activities. Development could temporarily or permanently introduce or increase the presence of visible artificial elements in areas of scenic importance, such as views from state scenic highways. Development within the cumulative context could also result in substantial new sources of light and glare, and facilities located in agricultural or undeveloped areas not previously developed and could degrade the visual character or quality of public views of a given site or the area.

Implementation of the program as evaluated in this EIR could also require construction and operational activities associated with new or modified facilities or infrastructure. There is uncertainty as to the specific locations of new small and medium composting facilities and operations, and they could introduce artificial elements into areas of scenic importance such that there would be substantial degradation of the visual character or quality of public views of the sites. Furthermore, implementation of the program could also result in temporary or permanent new sources of substantial light or glare, which would adversely affect day or nighttime views in areas near project sites. Implementation of Mitigation Measures 3.1-1, 3.1-2, and 3.1-4 would require site-specific considerations (e.g., the screening of composting facilities and operations and lighting design) to be implemented as part of individual projects under the program and would likely reduce the cumulative contribution of the program. However, there may be individual projects under the program that incorporate all feasible measures but would still be determined by the lead agency to contribute to a substantial adverse effect on aesthetics. For that reason, the program is considered cumulatively considerable. No additional mitigation is considered feasible to reduce the program's potential contribution to the cumulative aesthetic condition, and impacts would be considered **significant**.

4.3.2 Agriculture and Forestry Resources

Implementation of the statewide programs listed in Section 4.2.1 would result in the development of new facilities throughout the state, including anaerobic digesters and other organic waste recovery facilities, renewable energy projects, and other infrastructure to support GHG reduction programs. There is uncertainty as to the specific locations of these new facilities and the extent that the modification of existing facilities would achieve program directives. Construction could require disturbance of undeveloped land, such as vegetation clearing; earth movement and grading; trenching for utility lines; erection of new buildings; and paving of parking lots, delivery areas, and roadways. These activities would have the potential to adversely affect agricultural resources (Prime Farmland, Important Farmland, or Farmland of Statewide Importance [Farmland]) and forestry resources (forestland, timberland, and Timber Production Zones) or conflict with zoning for agricultural or forestry uses present in those areas.

Implementation of the program described within this document would result in the development of new small and medium composting facilities/operations at locations to be determined throughout the state. Construction could require vegetation clearing, earth movement and grading, trenching for utility lines, erection of new buildings, and roadway construction. These activities have the potential to adversely affect agricultural

resources (Prime Farmland, Important Farmland, or Farmland of Statewide Importance (collectively, Important Farmland) and forestry resources (forest land, timberland, and Timber Production Zones (TPZs) or conflict with zoning for agricultural or forestry uses present in those areas. With implementation of the mitigation measures described herein, projects permitted under the program would not result in significant adverse environmental impacts to Important Farmland or forest land, timberland, and TPZs. Facilities would be sited on land outside of sensitive resource areas, within locations compliant with local zoning for such resources, and should impacts to forest land, as described in PRC 12220(g), be required as part of project implementation, trees would be replaced 1:1 to ensure no net loss of canopy cover. Indirect effects to agriculture and forest resources from fugitive dust and invasive species would be mitigated to less than significant levels through implementation of standard dust control measures, compliance with local air quality laws, and preparation of an invasive species management plan for the proposed facility.

The agriculture and forestry resources that could be affected by the construction and operation of small and medium composting facilities and operations under the proposed program would depend on the location, footprint, and environmental setting of each individual facility. Potential impacts could include conversion of Important Farmland to nonagricultural use; conversion of forest land to non-forest use; conflicts with applicable agricultural, TPZ, or other forestry zoning; conflicts with Williamson Act contracts; and construction or operational activities that could reduce the viability of adjacent agricultural or forest uses and thereby contribute to their indirect conversion. Because the locations of future composting facilities and operations are not known, the extent and nature of these impacts cannot be determined at the program level.

Implementation of Mitigation Measures 3.2-1 through 3.2-3, described in Section 3.2, “Agriculture and Forestry Resources,” would reduce potential impacts on agriculture and forestry resources by prohibiting program facilities on specified categories of Important Farmland, timberland, and TPZs; requiring avoidance or replacement of native trees where forest land would be affected; requiring consistency with applicable agriculture and forestry zoning requirements and Williamson Act contracts; and require implementation of measures to minimize indirect effects on agriculture and forest uses. Therefore, the program would not be considered cumulatively considerable, and impacts would be **less than significant**.

4.3.3 Air Quality

Implementation of the statewide programs listed in Section 4.2.1 would result in the development of new facilities throughout the state, including anaerobic digesters and other organic waste recovery facilities, renewable energy projects, and other infrastructure to support GHG reduction programs. There is uncertainty as to the specific locations of these new facilities and the extent that the modification of existing facilities would achieve program directives. Construction could require the use of heavy-duty equipment, development of facilities that could generate unpleasant odors, and increased vehicle miles traveled (VMT).

Implementation of the program would also result in activities (during construction and operation) and associated emissions of criteria air pollutants and toxic air contaminants (TACs), and would generate unpleasant odors that could affect sensitive receptors. Based on the types of activities that could be conducted, emissions may exceed established thresholds of a local or regional air quality management district depending on the location of the emissions. In addition, the operation of new small and medium composting facilities and operations could generate objectional odors. With implementation of Mitigation Measures 3.3-1, 3.3-3, 3.3-5, and 3.3-6, future project proponents would be required to prepare site-specific air quality and odor analyses and implement site-specific minimization measures to reduce criteria pollutant, TAC, and odor emissions to the

extent feasible. Implementation of these measures would likely reduce emissions, as well as the cumulative contribution of the program. However, there may be individual projects under the program that incorporate all feasible measures but would still be determined by the lead agency to contribute to a substantial adverse effect on air quality. For that reason, the program is considered cumulatively considerable. No additional mitigation is considered feasible to reduce the program's potential contribution to cumulative air quality conditions, and impacts would be considered **significant**.

4.3.4 Archaeological, Historical, and Tribal Cultural Resources

Implementation of the statewide programs listed in Section 4.2.1 would result in further development throughout the state, including anaerobic digesters and other organic waste recovery facilities, renewable energy projects, and other infrastructure to support GHG reduction programs, Construction could require disturbance of undeveloped land, such as clearing of vegetation, earth movement and grading, trenching for utility lines, erection of new buildings, and paving of parking lots, delivery areas, and roadways. The archaeological and historical resources that could be affected by ground disturbance activities could include, but would not be limited to, prehistoric and historical archaeological sites, historic buildings, structures, and heritage landscapes. Properties important to Native American communities and other ethnic groups, including tangible properties possessing intangible traditional cultural values, also may exist and could be affected.

Implementation of the program described in this EIR could result in further earth-moving activities that could affect archaeological, historical, and Tribal cultural resources. Similar to the related statewide programs, there is uncertainty as to the specific locations of these small and medium composting facilities and operations. Construction activities could require disturbance of undeveloped areas, such as clearing of vegetation; earth movement and grading; trenching for utility lines; erection of new buildings; and paving of parking lots, delivery areas, and roadways. The archaeological, historical, and Tribal cultural resources that could be affected by ground disturbance activities could include, but would not be limited to, prehistoric and historical archaeological sites, historic buildings, historic structures, and heritage landscapes. Historic buildings and structures may also be adversely affected by any necessary demolition-related activities.

With implementation of Mitigation Measures 3.4-1, 3.4-2, and 3.4-3, future project proponents would be required to evaluate site-specific conditions and implement appropriate treatment and avoidance measures to ensure that any resources are treated in accordance with pertinent laws and regulations. However, there may be individual projects under the program that incorporate all feasible measures but may require the removal or disturbance of historical and tribal cultural resources by the local lead agency to represent a significant adverse effect on historical or Tribal cultural resources. For that reason, the program is considered cumulatively considerable. No additional mitigation is considered feasible to reduce the program's potential contribution to cumulative historical and Tribal cultural resources conditions, and impacts would be considered **significant**.

4.3.5 Biological Resources

Implementation of the statewide programs listed in Section 4.2.1 would result in the development of new facilities throughout the state, including anaerobic digesters and other organic material diversion facilities, renewable energy projects, and other infrastructure to support GHG reduction programs. It is reasonably foreseeable to expect new or expanded composting facilities and operations may be located within agricultural or rural lands, at or near existing landfills, transfer stations or material recovery facilities, or in urban locations zoned for industrial or heavy commercial use, so they would not conflict with local or regional conservation

plans and policies. Even if located on the urban/rural edge, development of new composting facilities and operations associated with the proposed regulation would not occupy substantial natural landscape. Nonetheless, construction could require disturbance of undeveloped land, such as clearing of vegetation; earth movement and grading; trenching for utility lines; erection of new buildings; and paving of parking lots, delivery areas, and roadways. These activities would have the potential to adversely affect special-status species and sensitive habitats and could result in temporary or permanent loss or degradation of habitat for special-status species or sensitive habitats, including wetlands, sensitive natural communities, and designated critical habitat.

Although new small and medium composting facilities and operations permitted under the proposed program are likely to be sited within previously developed areas, such as adjacent to existing resource recovery facilities, or within areas zoned for industrial uses, composting facilities and operations could also be located in rural or undeveloped areas. Even if new composting facilities and operations are located on urban/rural edges, their development is unlikely to occupy large areas of natural landscape, because facilities would require access to existing infrastructure like roadways for feedstock delivery, and are likely to be located near sources of feedstock or final compost product consumers. Additionally, composting facilities and operations permitted under this program are limited to a certain feedstock volume, limiting land coverage. Construction of new composting facilities and operations could result in activities that disturb vegetation or habitat and affect special-status species, including vegetation clearing, grading, vehicle access, equipment staging, and the introduction or spread of invasive or noxious weeds.

The contribution of the proposed program to cumulative effects would generally be limited by the relatively small amount of development anticipated under the program. Currently, the program is predicted to produce 15 small and 25 medium composting facilities, which would occupy, on average, 5 and 11 acres, respectively. The program area (state of California) is approximately 100 million acres, and total program buildout represents development on approximately 350 acres or 0.00035% of the total program area. This relatively small development footprint indicates that the overall extent of habitat disturbance attributable to the program would be limited when considered on a statewide basis; however, the significance of effects on biological resources would also depend on the location, type, and sensitivity of biological resources affected and cannot be determined solely from the acreage disturbed.

With implementation of Mitigation Measures 3.5-1a, 3.5-1b, 3.5-1c, 3.5-2a, 3.5-2b, and 3.5-3, future project proponents would be required to evaluate site-specific conditions and implement appropriate avoidance measures that would reduce the cumulative contribution of the program. However, there may be individual projects under the program that incorporate all feasible site-specific measures but may require the removal or disturbance of sensitive habitat and/or special status species. For that reason, the program is considered cumulatively considerable. No additional mitigation is considered feasible to reduce the program's potential contribution to cumulative biological resource conditions, and impacts would be considered **significant**.

4.3.6 Energy

Implementation of the related statewide programs listed in Section 4.2.1 would result in the development of new facilities throughout the state, including anaerobic digesters and other organic waste recovery facilities, renewable energy projects, and other infrastructure to support GHG reduction programs. The expansion of small and medium composting facilities and operations permitting within the state would happen concurrently with increases in statewide supplies of green material generated by CalVTP and with increased organic waste separation, as required by AB 827 and AB 1826. The small and medium composting facilities and operations

under the program could handle woody biomass from urban landscaping and it is reasonably foreseeable that some woody biomass generated from implementation of CalVTP could be processed by composting facilities/operations under the program. The integration of these feedstocks would depend on the location of the composting facility/operation. Nonetheless, the diversion of organic waste and the development of small and medium facilities and operations to (in part) process this material would be compatible with numerous statewide programs aimed at the sustainable management of energy resources; therefore, the program would not be cumulatively considerable with respect to energy impacts. Impacts would be **less than significant**.

4.3.7 Geology and Soils

Implementation of the statewide programs listed in Section 4.2.1 would result in the development of new facilities throughout the state, including micro-composting facilities, renewable energy projects and other infrastructure. There is uncertainty as to the specific location of these new facilities and operations, however construction could require disturbance of undeveloped land, such as clearing of vegetation; earth movement and grading; trenching for utility lines; erection of new buildings; and paving of parking lots, delivery areas, and roadways. These activities would have the potential to adversely affect site-specific geology and soils resources (e.g., cause localized erosion, or destroy paleontological resources). Localized and cumulative construction impacts on erosion, unstable soils, and seismic risks are effectively prevented through compliance with statewide and local regulations, such as General Order 2022-0057-DWQ, the Composting General Order, and California Building Code Title 24, as detailed in Section 3.7, "Geology and Soils." Similarly, the protection of significant mineral deposits is mandated through local permitting in accordance with Section 2762 of the Surface Mining and Reclamation Act. Therefore, no significant cumulative impacts are anticipated.

With respect to paleontological resources, conditions would likely vary by site, and there are no comprehensive state or federal regulations that would protect against the cumulative loss of such resources without site specific mitigation. Incorporation of Mitigation Measure 3.7-5 would ensure that the program and small and medium composting facilities and operations developed as part of it would not result in a cumulatively considerable contribution to paleontological resources impacts. As such, cumulative geology and soils impacts would be **less than significant**.

4.3.8 Greenhouse Gas Emissions and Climate Change

Implementation of the statewide programs previously listed would result in the development of new facilities throughout the state, including anaerobic digesters and other organic waste recovery facilities, renewable energy projects, and other infrastructure to support GHG reduction programs. Specific, project-related construction activities could result in increased generation of short-term GHG emissions in limited amounts associated with the use of heavy-duty off-road equipment, materials transport, and worker commutes.

Because no single project is large enough to result in a measurable increase in global concentrations of GHG emissions, climate change impacts of the program are already considered on a cumulative basis. Specifically, the analysis in Section 3.8, “Greenhouse Gas Emissions” is consistent with CEQA Guidelines Section 15064.4(b) and considers whether the incremental contributions of reasonably foreseeable means of compliance with the program could be cumulatively considerable. The CEQA Guidelines state that, “[p]ursuant to Sections 15064(h)(3) and 15130(d), a lead agency may determine that a project’s incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously adopted plan or mitigation program under specified circumstances.” The likely conformance of new small and

medium composting facilities and operations with these plans and policies is discussed in Section 3.8, and as discussed there the program would not represent a substantial contribution to GHG impacts. In addition, the program has the potential to reduce GHG emissions and have a beneficial impact with regard to GHG. As such, impacts would be **less than significant**.

4.3.9 Hazards and Hazardous Materials

Implementation of the statewide programs listed in Section 4.2.1 would result in the development of new facilities throughout the state, including anaerobic digesters and other organic waste recovery facilities, renewable energy projects, and other infrastructure to support GHG reduction programs. As there is uncertainty regarding the specific locations of these new facilities, it is generally assumed that construction could require disturbance of undeveloped land, such as clearing of vegetation; earth movement and grading; trenching for utility lines; erection of new buildings; and paving of parking lots, delivery areas, and roadways. These activities would have the potential to create substantial health hazards, including upset or accident conditions that release hazardous materials, exposure of people or the environment to significant health hazards, and impairment of an emergency response plan or emergency evacuation plan. The hazards and hazardous materials effects from construction and operation of new composting facilities/operations from the statewide programs identified would depend on the specific locations of the facilities and operations and the environmental settings of those sites.

Similarly, the program has the potential to disturb land and could result in the potential release of hazardous materials or risk release as a result of accident conditions, including in proximity to airports and nearby schools. However, implementation of Mitigation Measures 3.9-4, 3.9-5, and 3.14-1 would require site-specific evaluation and consideration of potential hazards (including emergency access/response), as well as implementation of avoidance/control measures to ensure that no significant risks would occur. Combined with requirements already imposed for composting activities by the State Water Resources Control Board (SWRCB), CalRecycle, and local air districts, implementation of the program would not be considered cumulatively considerable. Impacts would be **less than significant**.

4.3.10 Hydrology and Water Quality

The statewide programs identified in Section 4.2.1 would result in the development of new facilities throughout the state, including organic waste recovery facilities, renewable energy projects, and other infrastructure to support programs involving some aspect of organic waste diversion from landfills. Implementation of the proposed program would specifically facilitate the development of up to 40 new small and medium composting facilities in various parts of the state. Construction and operation of composting facilities and operations implemented through the cumulative projects and this proposed program would involve ground disturbance and could cause an increase in sediment, nutrients, and other contaminants in adjacent surface waters. In addition, leachate or process water from organic waste management and composting operations can migrate through soils to contaminate groundwater if not properly managed. Additionally, facilities could be constructed in areas subject to inundation where stockpiles and detention ponds could contaminate floodwaters.

These potential impacts are common, and existing regulations in California include robust water quality protections and restrictions related to the siting, construction, and operation of facilities that may adversely affect hydrology and water quality. For example, the Compost General Order requires that no commercial composting activities may be conducted within 100 feet of a water body or well. These regulations are discussed

in detail in Section 3.10, "Hydrology and Water Quality." The cumulative projects and the reasonably foreseeable condition associated with the program evaluated in this EIR would be required to comply with the water quality protections included in National Pollutant Discharge Elimination System permits administered by SWRCB and regional water quality control boards, as well as the Composting General Order. Existing requirements associated with these regulations, coupled with required monitoring and reporting, would minimize the off-site risk of cumulative adverse water quality effects from construction and operation of new or expanded composting facilities and operations. Therefore, the program would not be considered cumulative considerable, and impacts would be **less than significant.**

4.3.11 Land Use and Planning

Implementation of the statewide programs listed in Section 4.2.1 would result in the development of new facilities throughout the state, including anaerobic digesters and other organic waste recovery facilities, renewable energy projects, and other infrastructure. While there is uncertainty regarding the specific locations of these facilities, they could result in potential cumulative impacts related to conflicts with land use plans, policies, or regulations. Collectively, implementation of these programs could result in cumulative impacts to land use resulting from conflicts with locally adopted land use plans and zoning ordinances.

These facilities, however, would be developed on lands owned or managed by a range of entities, including state agencies, private landowners, special districts, nonprofit organizations, cities, and counties. All such development would be subject to applicable general plans, zoning ordinances, and locally adopted land use policies. Projects proposed on state-owned or state-managed lands would similarly be subject to land use plans adopted by the local land use and/or permitting agencies. During implementation of projects under these programs, as well as the program evaluated in this EIR, proponents would be required to demonstrate consistency with local land use plans, policies, and ordinances as part of the permitting process. Given that the development and operation of small and medium composting facilities and operations must comply with local land use authority, zoning requirements, and project-level conditions of approval, the program would not be considered cumulatively considerable. Impacts would be **less than significant**.

4.3.12 Noise and Vibration

Implementation of the statewide programs listed in Section 4.2.1 would result in the development of new facilities throughout the state, including anaerobic digesters and other organic waste recovery facilities, renewable energy projects, and other infrastructure to support GHG reduction programs. There is uncertainty as to the specific location of these new facilities and to the extent that the modification of existing facilities would achieve program directives. These activities could result in the generation of short-term construction and long-term operational noise in excess of applicable standards or that result in a substantial increase in ambient levels at nearby sensitive receptors, and exposure to excessive vibration levels.

The development of small and medium composting facilities and operations could include noise and vibration associated with various types of construction equipment and activities (e.g., bulldozers, blasting). Operation of composting facilities/operations associated with the program could require use of equipment that processes and handles material at these facilities and operations (such as tub grinders and off-road heavy-duty trucks) that can emit high levels of noise. However, in order for noise levels within the cumulative context to be considered cumulatively considerable, they would have to combine (to some degree) with other noise in the area (likely within 150 feet) and be perceived as combined noise at a nearby receptor. The probability of this occurring with

respect to the cumulative condition is considered low. As noted in Section 3.12, "Noise and Vibration" construction noise is not anticipated to exceed applicable thresholds, and combined with the low likelihood of nearby construction noise that could combine with that of a development under the program, construction noise and vibration is not considered cumulatively considerable. However, with respect to operational noise, significant impacts were identified within a greater distance. Implementation of Mitigation Measure 3.12-2 would reduce operational noise within 2,000 feet of nearby receptors through site-specific requirements, however it cannot be precluded that the operational noise associated with small and medium composting facilities and operations under the program may combine with other nearby development associated with the statewide programs listed. For this reason, the program is considered cumulatively considerable, and impacts would be **significant**.

4.3.13 Public Services

Implementation of the statewide programs within the cumulative context would include the development of new facilities throughout the state, including anaerobic digesters and other organic waste recovery facilities, renewable energy projects, and other infrastructure. Collectively, implementation of these programs could result in cumulative impacts to existing public services in the state and could affect the availability, service level, and/or capacity of public services, including fire-protection services and police-protection services, within local jurisdictions.

However, development of such facilities would not be anticipated to generate substantial population growth, as they would involve incremental increases in employment opportunities and would not involve the construction of substantial new housing. Consequently, these facilities would not create a demand for new or physically altered school or park facilities, nor would they place substantial pressure on existing educational or recreational resources. Because development under the statewide programs within the cumulative context and the program itself would not involve residential development or population increases, they would not contribute to enrollment growth in local schools or increased use of public parks or recreational facilities. For these reasons, cumulative development of composting facilities/operations would not result in substantial adverse physical impacts on schools, parks, libraries, or other public facilities.

With respect to fire- and police-protection services, the development of composting facilities and operations could increase demand for fire-protection and police-protection services associated with construction activities, operational equipment use, and worker presence, as noted in Section 3.13, "Public Services." Compost facilities/operations would be developed across jurisdictions served by a wide range of public service providers, including local fire-protection districts and police departments. Although the specific locations of new facilities/operations to existing facilities cannot be determined at this time, composting facilities/operations are typically sited in industrial, agricultural, or other working landscape settings where public service providers already maintain established service ratios, response times, and performance objectives. New facilities/operations would be required (during local agency planning and design review) to comply with applicable fire safety regulations, building and site access requirements, and emergency response standards under the California Fire Code, California Building Standards Code, and local fire-protection ordinances. As a result, the development of new small and medium composting facilities and operations is not anticipated to be cumulatively considerable with respect to potential increases in police and fire services demand and would not necessitate construction of new or expanded fire or police facilities. Because all composting facilities/operations must comply with applicable state and local public service regulations and because local land use and/or

permitting agencies retain full authority to impose project-level conditions of approval to maintain acceptable service ratios and response times, the program would not be cumulatively considerable, and impacts would be **less than significant**.

4.3.14 Transportation

Implementation of the statewide programs listed in Section 4.2.1 would result in the development of new facilities throughout the state, including anaerobic digesters and other organic waste recovery facilities, renewable energy projects, and other infrastructure. There is uncertainty as to the specific locations of these new facilities and the extent that the modification of existing facilities would achieve program directives. The development of facilities could result in increased vehicular trips related to construction and operation of new and expanded facilities through both worker commute trips and material deliveries. Depending on the number of trips generated and the location of new facilities, implementation of these statewide programs could conflict with applicable programs, plans, ordinances, and policies (e.g., performance standards, congestion management, VMT goals).

The development of small and medium composting facilities and operations under the program would also result in short-term construction traffic (primarily motorized) from worker commute- and material delivery-related trips. The amount of construction activity would vary depending on the particular type, number, and duration of usage for the varying equipment, and the phase of construction. In addition, distribution of produced compost and collected edible food could affect existing traffic patterns. Implementation of Mitigation Measure 3.14-1 would require the preparation and implementation of a site-specific construction traffic management plan that would minimize potential off-site transportation impacts of each development under the program and ensure that the program's potential impact on transportation safety is less than cumulatively considerable.

In addition to construction-related traffic, the proposed regulation would affect VMT for both worker commute trips and material deliveries. According to The Technical Advisory for Evaluating Transportation Impacts Under CEQA (OPR 2018), projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact. As previously listed, the small and medium composting facilities/operations (as evaluated in this EIR) are anticipated to result in no more than 110 trips per facility per day. However, as noted in Chapter 2, "Project Description," the annual throughput of a given medium facility may exceed the reasonably foreseeable condition evaluated in this EIR (i.e., annual throughput for a single facility could exceed 25,000 tpy on an annual basis). Therefore, statewide VMT may increase by greater than 110 trips per day for one or more facilities under the program, which would be considered cumulatively considerable within the context of CEQA. As a result, cumulative transportation impacts associated with the program would be considered **significant**.

4.3.15 Utilities and Service Systems

Implementation of the aforementioned statewide programs would include the development of new facilities throughout the state, including anaerobic digesters and other organic waste recovery facilities, renewable energy projects, and other infrastructure. Collectively, implementation of these programs could result in cumulative impacts related to increased demand for water supplies, wastewater treatment capacity, stormwater system capacity, energy infrastructure, telecommunications networks, and solid waste handling capacity across the state.

Development of new facilities could require increased provision of water supply, wastewater treatment, stormwater drainage systems, electric power, natural gas, and telecommunications service. These activities have the potential to incrementally increase demand on existing utility infrastructure and, in limited circumstances, could require localized upgrades or extensions of service. Although the specific locations of new facilities and the extent of modifications to existing facilities cannot be determined at this time, development of new facilities would typically occur in areas where utility infrastructure is already available, and connections could be made without adverse environmental effects. To address uncertainty in utility availability, which varies substantially across the state, project proponents would be required to obtain formal assurances, such as will-serve letters, from the relevant utility providers during project design to confirm system capacity and service compatibility.

As such, program implementation would not result in a considerable contribution to a significant cumulative impact because future composting facilities and operations must comply with federal, state, and local utility-service requirements, demonstrate adequate capacity through local permitting processes, and inherently support statewide solid waste reduction and infrastructure-efficiency goals. Impacts would be **less than significant**.

4.3.16 Wildfire

Implementation of the statewide programs listed in Section 4.2.1 would result in the development of new facilities throughout the state, including anaerobic digesters and other organic waste recovery facilities, renewable energy projects, and other infrastructure to support GHG reduction programs. There is uncertainty as to the specific locations of these new facilities and the extent that the modification of existing facilities would achieve program directives. In the event of a wildfire, such facilities would be addressed by the appropriate response agency based on their location and by any existing wildfire emergency response plans or evacuation plans for that area. Although these facilities would be of limited number throughout the state and would have a limited number of employees, when they are combined with other developments within the same region that may also require coverage by the dedicated emergency response agency, the existing capacity for wildfire response could be exceeded.

Implementation of the program would facilitate the construction and operation of new small and medium composting facilities and operations. During construction of these composting facilities and operations, access may be limited. Emergency and evacuation access would be provided at all phases of construction through implementation of Mitigation Measure 3.14-1, which would require preparation and implementation of a transportation construction plan for all phases of construction. With implementation of this measure, each project under the program would not be considered cumulatively considerable with other potential impacts to emergency evacuation/access, safe travel around each new compost facility/operation would be maintained. Further, and with respect to operational evacuation considerations, each facility is anticipated to employ between 8 and 12 employees for small operations and medium facilities, respectively. As such, no significant delays or impairments to existing evacuation routes or plans are anticipated.

Individual facilities and associated infrastructure would be placed within response areas for various jurisdictions and would be dealt with in the same manner as existing infrastructure. Adherence to local plans, policies, codes and ordinances, the California Fire Code, and the provisions of wildfire prevention plans, as well as oversight by the California Public Utilities Commission, would substantially reduce the risk of wildfire ignitions caused by infrastructure development and, consequently, risks related to post-wildfire flooding or mass wasting. Furthermore, compost pile storage would adhere to best management practices for compost operations to

minimize fire risk, such as keeping compost piles small (less than 12 feet in height), monitoring moisture content and internal pile temperature, maintaining aisles between piles and on-site soil stockpiles for fire suppression, and isolating equipment from piles (Coker 2019, 2021). These practices would help reduce the risk of spontaneous combustion. With adherence to local regulations related to wildfire, implementation of the transportation construction plan, and adherence to best practices for reduction of fire risk in compost piles, the program would not result in a considerable contribution to a cumulative wildfire impact. Impacts would be **less than significant**.

5 Other CEQA Sections

5.1 Growth Inducement

California Public Resources Code Section 21100(b)(5) specifies that the growth-inducing impacts of a project must be addressed in an EIR. Section 15126.2(e) of the State CEQA Guidelines provides guidance for assessing growth-inducing impacts of a project. It states that an EIR shall discuss 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. This would include projects which may remove obstacles to population growth (e.g., a major expansion of a wastewater treatment plant might allow for more construction within the proposed service area for the plant). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also, an EIR shall discuss the characteristics 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.

A project can induce growth directly, indirectly, or both. Direct growth inducement could occur if a project involved construction of new housing. Indirect growth inducement could occur if implementing a project resulted in any of the following:

- Substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises).
- Substantial short-term employment opportunities (e.g., construction employment) that indirectly stimulate the need for additional housing and services to support the temporary employment demand.
- Removal of an obstacle to additional growth and development, such as removing a constraint on a required public utility or service (e.g., construction of a major sewer line with excess capacity through an undeveloped area).

Growth inducement itself is not an environmental effect but may foreseeably lead to physical changes that could have environmental effects. If substantial growth inducement occurs, it can result in secondary environmental effects, such as increased demand for housing, demand for other community and public services and infrastructure capacity, increased traffic and noise, degradation of air or water quality, degradation or loss of plant or animal habitats, conversion of agricultural and open-space land to urban uses, and other effects.

5.1.1 Summary of Growth-inducing Impacts

State CEQA Guidelines Section 15126.2(e) requires an EIR to discuss the ways in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment, including whether the growth is already approved by and consistent with local plans. It is not assumed that growth in any area is beneficial or detrimental, consistent with the State CEQA Guidelines (California Code of Regulations Section 15126.2[d]).

Environmental effects resulting from induced growth fit the definition of “indirect” effects in the State CEQA Guidelines (Section 15358[a][2]). These indirect or secondary effects of growth, which, although caused by a project, occur later in time or are further removed in distance, may be significant. CEQA requires an analysis of reasonably foreseeable environmental effects; however, CEQA does not require that the EIR speculate unduly

about the precise location and site-specific characteristics of significant, indirect effects caused by induced growth, but a good-faith effort is required to disclose what is feasible to assess. Potential secondary effects of growth could include consequences—such as conversion of open space to developed uses, increased demand on community and public services and infrastructure, increased traffic and noise, degradation of air and water quality, or degradation or loss of plant and wildlife habitat—that are the result of growth fostered by the project.

5.1.2 Growth-Inducing Impacts of the Program

This analysis examines the following potential growth-inducing impacts related to implementation of the program:

1. Foster population growth;
2. Foster the construction of new housing in the surrounding environment;
3. Foster economic growth; and
4. Remove obstacles to growth by expanding facility capacity or infrastructure.

In and of itself, the program is intended to modify the way in which existing waste streams generated by existing development and the population of California. In terms of its potential to remove obstacles to growth, implementing the program would likely lead to the construction of new small and medium composting facilities and operations statewide, and the creation of new jobs at those facilities and operations. Based on the total program potential identified in Chapter 2, "Project Description," 30 small operations and 50 medium facilities are considered reasonably foreseeable. Assuming that up to eight employees would operate a small operation and 12 employees would operate a medium facility, up to 840 jobs would be created as part of the program. This increase in employment may result in localized growth from new construction and organic waste management jobs. However, if these changes are viewed as percentage changes over business as usual (i.e., if the program is not implemented), the statewide changes to employment levels are essentially 0.01% and therefore are minor in the overall economy. Thus, because this potential increase in employment levels in the state would be slight, implementation of the program would not increase employment opportunities so substantially that it could foster economic or population growth.

In terms of its potential to remove obstacles to growth, program implementation would require the construction of new small and medium composting facilities and operations and creation of new jobs to support efforts to meet the State's organic waste disposal reduction target established by SB 1383. The development of new infrastructure would increase the rate at which organic waste is diverted from landfill disposal, effectively prolonging the usable lifetime of landfills throughout the state. However, landfill capacity is generally not a limiting factor to growth within a jurisdiction, because ongoing planning efforts and capacity study requirements ensure that anticipated waste associated with growth has a designated disposal location. Unlike more finite resources, such as water or wastewater treatment capacity that have limited service areas based on available infrastructure (i.e. pipelines), solid waste is hauled and may be transported to any number of disposal facilities, including those outside the state. Thus, although infrastructure necessary to support development would be expanded, the expansion would not be considered removal of an obstacle to growth.

5.2 Significant and Unavoidable Adverse Impacts

Section 15126.2(c) of the State CEQA Guidelines states that an EIR shall "[d]escribe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance…." Accordingly, this section provides a summary of significant environmental impacts of the program that cannot be mitigated to a less than significant level. Chapter 3, "Environmental Impacts and Mitigation Measures," provides a description of the potential environmental impacts of the project and recommends various mitigation measures to reduce impacts to the extent feasible. Chapter 4, "Cumulative Impacts," determines whether the incremental effects of the project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects. As documented throughout Chapters 3 and 4 of this Draft EIR, after implementation of the recommended mitigation measures, most of the impacts associated with growth and development that would occur with implementation of the project would be reduced to a less than significant level.

The following impacts are considered significant and unavoidable; that is, no feasible mitigation is available, or the mitigation measures available are not enough, to reduce the project's impacts to a less than significant level.

- Impact 3.1-1: Substantial Adverse Effect on a Scenic Vista or Visual Character or Quality of Public Views, or Damage to Scenic Resources in a State Scenic Highway from Construction of New Composting Facilities.
- Impact 3.1-2: Long-Term, Substantial Degradation of a Scenic Vista or Visual Character or Quality of Public Views, or Damage to Scenic Resources in a State Scenic Highway from Operation of New Composting Facilities.
- Impact 3.3-2: Short-Term Construction-Related Emissions of Reactive Organic Gases (ROG), Nitrous Oxides (NO_X), Particulate Matter (PM_{10}), and Fine Particulate Matter ($PM_{2.5}$)
- Impact 3.3-3: Long-Term Operational Emissions of ROG, NOX, PM_{10}, and $PM_{2.5}$
- Impact 3.3-5: Exposure of Sensitive Receptors to Toxic Air Contaminant Emissions
- Impact 3.4-1: Substantial Adverse Change in the Significance of Historical Resources
- Impact 3.4-3: Substantial Adverse Change to the Significance of Tribal Cultural Resources
- Impact 3.5-1: Adversely Affect Special-Status Species, Either Directly or Through Habitat Modification
- Impact 3.5-2: Adversely Affect Riparian Habitat, Aquatic Resources, or Other Sensitive Natural Communities through Direct Removal, Filling, Hydrological Interruption, Vegetation Modification, or Other Methods
- Impact 3.12-2: Long-Term Operations Noise Effects
- Impact 3.14-4: Reasonably Anticipated Increase in Vehicle Miles Traveled

Cumulative impacts related to aesthetics; air quality; archaeological, historical, and Tribal cultural resources; biological resources; noise; and transportation would also be significant and unavoidable as a result of implementation of the program.

5.3 Significant and Irreversible Environmental Changes

The State CEQA Guidelines require a discussion of any significant irreversible environmental changes that would be caused by the project. Specifically, the State CEQA Guidelines section 15126.2(c) states that the use of nonrenewable resources during the initial and continued phases of a 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 that provides access to a previously inaccessible area) generally commit future generation to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to ensure that such current consumption is justified.

Generally, a project would result in significant irreversible environmental changes if:

- The primary and secondary impacts would generally commit future generations to similar uses.
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project.
- The project would involve a large commitment of nonrenewable resources.
- The project consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

The construction and operation of small and medium composting facilities and operations under the program would involve the commitment of renewable and nonrenewable environmental resources, including land, water resources, construction materials, and fossil fuels. Irretrievable commitments of nonrenewable resources associated with the program would include those described in the following section. These issues are addressed in various sections of Chapter 3, as follows:

- The consumption of substantial amounts of nonrenewable energy for construction, maintenance, and operation of small and medium composting facilities and operations is discussed in Chapter 3.6, “Energy.”
- The use of building materials, fossil fuels, and other resources for construction, maintenance, and operation of small and medium composting facilities and operations is addressed in Chapter 3.6, “Energy.”
- Degradation of ambient air quality through construction and operation of small and medium composting facilities and operations is addressed in Chapter 3.3, “Air Quality.”
- Emission of greenhouse gases from small and medium composting facilities and operations that would contribute to global climate change is addressed in Chapter 3.8, “Greenhouse Gas Emissions and Climate Change.”

6 Alternatives

6.1 Introduction

California Code of Regulations (CCR) Section 15126.6(a) (State CEQA Guidelines) requires an EIR to 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 range of potentially feasible alternatives that will avoid or substantially lessen the significant adverse impacts of a project and foster informed decision making and public participation. An EIR is not required to consider alternatives that 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." This section of the State CEQA Guidelines also provides guidance regarding what the alternatives analysis should consider. Subsection (b) further states the purpose of the alternatives analysis is as follows:

> Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code [PRC] 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.

The State CEQA Guidelines require that the EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with a proposed project. If an alternative would cause one or more significant effects in addition to those that would be caused by a project as proposed, the significant effects of the alternative must be discussed, but in less detail than the significant effects of the project as proposed (CCR Section 15126.6[d]).

The State CEQA Guidelines further require that the "no project" alternative be considered (CCR Section 15126.6[e]). The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving a proposed project with the impacts of not approving the proposed project. If the no project alternative is the environmentally superior alternative, CEQA requires that the EIR "…shall also identify an environmentally superior alternative among the other alternatives." (CCR Section 15126[e][2]).

In defining "feasibility" (e.g., "… feasibly attain most of the basic objectives of the project …"), CCR Section 15126.6(f) (1) states, in part:

> 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.

In determining what alternatives should be considered in the EIR, it is important to consider the objectives of the project (or program, in this case), the significant effects, and unique project/program considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). Although, as noted, EIRs must contain a discussion of "potentially feasible" alternatives, the ultimate determination as to whether an alternative is feasible or infeasible is made by the lead agency's decision-making body, here the Trustees. (See PRC Sections 21081.5, 21081[a] [3].)

6.2 Considerations for Selection of Alternatives

6.2.1 Attainment of Project Objectives

In determining what alternatives should be considered in the EIR, the objectives of the program must be considered, as attainment of most of the basic objectives forms one of the tests of whether an alternative is feasible. CalRecycle identified the following objectives, as previously described (see Chapter 2, "Project Description"):

- Provide a consistent approach for streamlining approval of small and medium composting facilities and operations throughout the state.
- Support the development of small and medium composting facilities and operations that accept agricultural, food, and green materials.
- Help California achieve and maintain the SB 1383 goal of reducing statewide organic waste disposal by 75% below 2014 levels.

6.2.2 Environmental Impacts of the Small and Medium Composting Facilities and Operations Program

The Executive Summary chapter of this EIR presents a detailed summary of the potential environmental impacts of implementation of the program. Overall, the program and small and medium composting facilities and operations under it would result in significant and unavoidable impacts with respect to aesthetics; air quality; archaeological, historical, and Tribal cultural resources; biological resources; noise; and transportation.

6.3 Alternatives Considered But Not Evaluated Further

As described in Section 6.1, State CEQA Guidelines Section 15126.6(c) provides that the range of potential alternatives for a 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. Alternatives that fail to meet the fundamental purpose and need of a project need not be addressed in detail in an EIR. (*In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1165-1167.)

In determining what alternatives should be considered in the EIR, it is important to acknowledge the objectives of a project, its significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). Although, as previously noted, EIRs must contain a discussion of "potentially feasible" alternatives, the ultimate determination as to whether an alternative is feasible or infeasible is made by lead agency decision-makers (See PRC Section 21081(a)(3).) At the time of action on a project, the decision-maker(s) may consider evidence beyond that found in this EIR in addressing such determinations. The decision-maker(s), for example, may conclude an alternative is

infeasible from a policy standpoint, and may reject an alternative on that basis provided that the decision-maker(s) adopts a finding, supported by substantial evidence and provided that such a finding reflects a reasonable balancing of the relevant economic, environmental, social, and other considerations supported by substantial evidence. (*City of Del Mar v. City of San Diego* (1982) 133 Cal.App.3d 401, 417; *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 998.)

The EIR should also identify any alternatives that were considered by the lead agency but were rejected during the planning or scoping process and briefly explain the reasons underlying the lead agency's determination. Accordingly, the following alternatives were considered by CalRecycle but is not evaluated further in this Draft EIR for the reasons provided.

6.3.1 Program As Proposed and Including Large Composting Facilities

Under this alternative, the program would expand to also address and facilitate the development of large composting facilities. Under this alternative, the program would include small and medium composting facilities and operations, as proposed, but would also be expanded to allow for facilitation of larger composting facilities (capable of storing more than 12,500 cubic yards [cy] at one time on-site). This was based partially on a scoping meeting comment that was received.

This alternative could result in several reductions in impacts, as this alternative would likely reduce the number of new facilities reasonably anticipated to occur under the program (as currently proposed) due to the greater capacity of individual facilities to meet the statewide composting need to meet SB 1383 targets. As a result, the number of new composting facilities/operations that may occur statewide would go down, thereby reducing the number of areas within which composting-related emissions and other impacts could occur. However, this alternative would result in potentially greater site-specific impacts due to the higher throughput and larger on-site capacity for materials than under the program. It is also reasonable to conclude that larger facilities would increase the distance between feedstock sources and finished compost destinations, as fewer facilities would be necessary statewide in order to achieve the State's SB 1383 goals for organic waste reduction. This could increase vehicle miles travelled (VMT), air quality, energy, and greenhouse gas (GHG) impacts associated with bringing compostable material to the larger facilities from more rural locations versus trips to a more local but smaller facility/operation.

Therefore, although this alternative would reduce environmental impacts (localized aesthetics, agriculture and forestry resources, biological resources, and cultural resources impacts), it would increase impacts to air quality, greenhouse gas emissions, energy consumption, and transportation (by increasing VMT). Further and more importantly, this alternative would go beyond the legislative mandate of SB 1046, which directed CalRecycle to prepare an EIR that addresses small and medium composting facilities and operations. It should also be noted that this alternative would help the State to achieve SB 1383 goals, similar to the program. Because this alternative would go beyond the scope of SB 1046, it would conflict with one of the basic program objectives. For this reason, and because it would result in greater potential impacts to air quality, energy consumption, greenhouse gas emissions, and VMT, this alternative was not fully analyzed.

6.4 Alternatives Selected for Detailed Analysis

The following alternatives are fully analyzed in this Draft EIR.

- **Alternative 1: No Project Alternative**. Under this alternative, small and medium composting facilities and operations would be constructed at the same rate as existing conditions. As noted in Chapter 2, "Project Description" of this EIR, approximately 5.5 facilities are currently permitted per year (based on an average annual number of reviews of facilities and operations by CalRecycle). In comparison to the reasonably foreseeable condition of the program (seven small and medium composting facilities and operations per year) the No Project alternative would achieve approximately 80% of the level of development under the program.
- **Alternative 2: Reduced Program with Location Limitations.** Under this alternative, the program would limit the siting and permitting of small and medium composting facilities and operations to existing solid waste disposal facilities, transfer stations, and grazing land.
- **Alternative 3: Removal of Food Material as an Allowable Feedstock**. Under this alternative, food material (beyond vegetative food material) would not be considered an allowable feedstock for small and medium composting facilities and operations.

Further details on these alternatives, a statement about why they were selected, and an evaluation of environmental effects relative to the program, are provided in the following section.

6.4.1 Alternative 1: No Project Alternative

State CEQA Guidelines Section 15126.6(e)(1) requires that the "no project" alternative be described and analyzed "to allow decision makers to compare the impacts of approving the project with the impacts of not approving the project." The no-project analysis is required to discuss "the existing conditions at the time the notice of preparation is published…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" (Section 15126.6[e][2]). The guidelines further state (Section 15126[e][3][B]):

> If the project is…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.

This EIR assumes that the reasonably foreseeable compliance responses associated with the permitting of individual composting facilities/operations would be consistent with their respective local plans, policies, and ordinances, because local land use and permit approvals are typically conditioned upon such consistency. It is

assumed the mix of developed and undeveloped locations where new small- and medium-sized facilities/operations would be constructed would be the same for Alternative 1 and the program. The new small and medium composting facilities and operations are assumed to be proposed in locations that are appropriate for such land use such as: secluded land; vacant, relatively flat land/open field; sufficient size; proper zoning or land use designation; sufficient distance from airports; appropriate vehicle access; and proximity to feedstock sources and/or compost users.

Under the No Project alternative (Alternative 1), small- and medium-sized compost facilities and operations would be constructed at the same rate as has been noted in the Project Description of this EIR. The average of about 5.5 facilities permitted per year would apply to Alternative 1 as compared to 7 per year that is estimated for the program. Thus, the amount of land affected under the No Project alternative would be about 80% of the amount of land affected under the program.

Aesthetics

Under this alternative, composting facilities and operations would continue to be generally located in areas already suitable for such land uses, including existing solid waste facilities, industrial parks, agricultural lands, and other working landscapes. There would reasonably be fewer facilities permitted and constructed under this alternative, which would result in less potential alteration of the visual character of the surrounding areas, and less potential alteration of views from sensitive areas such as state scenic highways. In addition, less development would result in statewide reductions in temporary or permanent sources of light and glare from composting activities. Compared to the program, there would be lesser impacts on a programmatic level due to a lower number of new facilities and operations permitted and constructed annually. However, significant and unavoidable impacts associated with site-specific considerations would likely remain under this alternative.

Agricultural and Forestry Resources

As noted in Section 3.2, “Agriculture and Forestry Resources,” approximately 8.7 million of the 101-million-acre program area contains Prime Farmland, Farmland of Statewide Importance, or Unique Farmland (Important Farmland). The Central Valley (Sacramento and San Joaquin valleys) contains a contiguous area of Important Farmland. Due to the lesser level of development and lower number of small and medium composting facilities and operations permitted statewide, the impacts of the No Project alternative to agriculture and forestry resources would be less than the program.

Air Quality

There would be less ground disturbance and fewer small- and medium-sized compost facilities/operations permitted under the No Project alternative than under the program. With a reduction in the number of facilities permitted and constructed statewide, there would be less composting activity and hauling of feedstock to composting facilities and operations , thereby resulting in lower emissions of criteria pollutants, toxic air contaminants (TACs), and odors. Impacts associated with the No Project alternative would be less compared to the program. However, significant and unavoidable impacts associated with site-specific considerations would likely remain under this alternative.

Archaeological, Historical, and Tribal Cultural Resources

There would be less ground disturbance and fewer small and medium composting facilities and operations permitted statewide under this alternative compared to the program. However, the characteristics of future locations of new composting facilities and operations are not known. It is not known if the sites to be developed under the No Project alternative would have a greater or lesser chance of having previously undiscovered resources than sites developed under the program. Even with a lower number of facilities permitted, if additional excavation and grading would occur in undeveloped, ungraded areas to facilitate construction of these facilities, these areas might contain previously undiscovered archaeological, historical, or Tribal cultural resources. Due to the potential for site-specific development to result in impacts to archaeological, historical, and Tribal cultural resources, impacts of the No Project alternative would remain significant and unavoidable but would be less than the program due to the lesser level of ground disturbance.

Biological Resources

Under the No Project alternative, only about 80% of the number of composting facilities and operations expected under the program would be constructed. Similar to the program, for all composting facilities/operations permitted and constructed, avoidance of sensitive biological resource areas would occur where feasible. Areas where new composting facilities and operations would be constructed would most likely be largely devoid of sensitive natural communities or aquatic resources that could support special status species. These areas would also likely be devoid of wildlife migration corridors or nursery areas. Thus, impacts to biological resources from the No Project alternative would be less than the program. However, significant and unavoidable impacts associated with site-specific considerations would likely remain under this alternative.

Energy

Under the No Project alternative, fewer small and medium composting facilities and operations would be constructed and operated statewide than under the program (5.5 facilities permitted annually compared to seven facilities under the program). Less energy would be required to construct and operate a lower number of composting facilities and operations . Therefore, energy-related impacts of the No Project alternative would be less than those of the program.

Geology and Soils

Under the No Project alternative, fewer small- and medium-sized composting facilities/operations would be permitted statewide compared to the program. As noted in Section 3.7 of this EIR, regardless of the number of composting facilities and operations constructed, all new facilities/operations that may occur in seismically active areas, areas of liquefaction, or areas of expansive or unstable soil would require a site-specific geotechnical investigation and any new structures built would need to comply with seismic requirements of the California Building Code. Regarding impacts to topsoil or erosion, all new facilities would have to comply with SWRCB's Construction Stormwater General Order, and any new facilities/operations requiring more than 1 acre would require a SWPPP. Given the uncertainty as to the locations of new composting facilities/operations, paleontological resources could be found on any sites developed for new composting facilities and operations, and should this occur, any such sites would be required to implement the same mitigation measures to protect these resources. Although the overall land area associated with this alternative would be less than the program, the potential for site-specific impacts related to geology and soils would be similar. Therefore, impacts of the No

Project alternative to geology and soils, including paleontological resources, would be similar to those of the program.

Greenhouse Gas Emissions and Climate Change

Under the No Project alternative, fewer small and medium composting facilities and operations would be permitted compared to the program. This would result in fewer composting facilities and operations. GHG emissions would decrease due to lower VMT associated with fewer composting facilities and operations . Therefore, due to the decreased emissions associated with construction and operation of fewer facilities, the impacts of the No Project alternative would be lower than those associated with the program.

Hazards and Hazardous Materials

Although fewer compost facilities and operations would be constructed under the No Project alternative than under the program, any of the new small and medium composting facilities and operations constructed could expose workers to hazardous chemicals, pests or vectors. Regardless of the number of facilities and operations constructed, new composting facilities and operations would be subject to the same state and federal laws that regulate worker safety, CAL/OSHA and others described in Section 3.9, “Hazards and Hazardous Materials” of this EIR. Similar to the program, the No Project alternative would not identify specific locations for new small and medium composting facilities and operations. As such, it would still be unknown whether a new composting facility/operation would be located within 5 miles of an airport, thus potentially increasing bird strike hazards. As a result, impacts of the No Project alternative would be same as the program.

Hydrology and Water Quality

Construction of new small and medium composting facilities and operations under this alternative could result in soil erosion, sedimentation, reduction of soil surfaces, and additional storm runoff under the No Project alternative, similar to existing conditions. However, any project constructed as part of this alternative would be subject to a State Water Resources Control Board (SWRCB) Construction Stormwater Order (as part of National Pollutant Discharge Elimination System [NPDES] requirements) and would require implementation of a Stormwater Pollution Prevention Plan (SWPPP) (if the area to be disturbed is greater than 1 acre). Organic waste composting facilities and operations require impervious surfaces and specialized water drainage and collection systems to comply with the Compost General Order and associated Waste Discharge Requirements (WDRs). As noted in Section 3.10, “Hydrology and Water Quality” of this EIR, compliance with these requirements would control site drainage and prevent new small and medium composting facilities and operations from generating substantial amounts of erosion, causing on- or off-site flooding, or creating substantial and unmanaged volumes of polluted runoff. As a result, impacts related to hydrology and water quality from the No Project alternative would be similar to the program.

Land Use and Planning

Albeit reduced compared to the program, the construction of small and medium composting facilities and operations under the No Project alternative would require review by private landowners, local governments, and state agencies. In general, small and medium compost facilities/operations would be developed by private or local entities and would still be subject to local plans (e.g., general plans), policies, and ordinances, and project proponents would design and develop facilities and operations in a manner consistent with local

requirements, as applicable, and consistent with the program. Therefore, impacts under the No Project alternative would be the same as the program.

Noise and Vibration

Under the No Project alternative, approximately 80% of the composting facilities that are reasonably anticipated under the program would be constructed. While there would be a reduced number of locations statewide associated with composting activities under this alternative, the potential for localized/site-specific noise impacts associated with the construction and operation of such uses would remain the same as the program. As there would be a reduction in construction and operational activities, overall construction and operational noise (traffic and facility related noise) would decrease compared to the program, and the impacts associated with implementation of this alternative would be less than the program. However, significant and unavoidable impacts associated with site-specific considerations would likely remain under this alternative.

Public Services

Under the No Project alternative, there would be reduced operational intensity statewide as fewer composting facilities and operations would be constructed on an annual basis. While lower operational activity would result in lower demand for police, fire, and emergency services, no significant impacts are anticipated with respect to public services. Further and as noted with respect to the program, it is assumed that local agency review by qualified/designated emergency, fire, and police entities of new compost facilities and operations under this alternative would ensure that the proposed ingress/egress points of each facility and on-site components of each facility/operation comply with emergency access/service requirements. These service providers would also ensure that they have adequate staff and facilities to maintain acceptable service ratios. As a result, the overall demand for public services is anticipated to be less than significant under this alternative, similar to the program.

Transportation

Under the No Project alternative, there would be reduced vehicle trips and VMT compared to the program due to a lower number of small and medium composting facilities and operations permitted statewide. The reduced construction activity would also have a reduced impact on emergency services or evacuation. As a result, impacts would be less than under the program. However, significant and unavoidable impacts associated with site-specific considerations would likely remain under this alternative.

Utilities and Service Systems

Under the No Project alternative, there would be reduced utility demand statewide as fewer composting facilities/operations would be constructed. Lower operational activity would result in lower demand for utility services, and thus impacts would be less compared to the program.

Wildfire

Under the No Project alternative there would be reduced operational activity statewide since fewer small and medium composting facilities/operations would be constructed. Lower operational activity would result in lower likelihood of wildfire risk associated with composting facilities and operations, and thus impacts would be less compared to the program.

Achievement of Project Objectives

Compared to the program, the No Project alternative would result in partial attainment of the program objectives. Small and medium compositing facilities/operations would continue to be permitted at an average of 5.5 facilities annually, which is about 80% of the anticipated rate of permitted new facilities for the project. This alternative would not fully meet objective 2 – enhance and encourage the development small and medium-sized compost facilities and operations throughout the state. Nor would this alternative fully meet objective 3 – assist the State in achieving and maintaining SB 1383 goals.

6.4.2 Alternative 2: Reduced Program with Location Limitations

Under this alternative, the program would limit the construction of small and medium composting facilities and operations to existing solid waste disposal facilities, transfer stations, and grazing land. With implementation of this alternative, this would likely place new small and medium composting facilities and operations further from nearby sensitive receptors and away from undisturbed land. Due to the limitations on potential site locations, the degree to which new facilities and operations may be permitted is unknown at this stage, but for the purposes of this analysis, the overall level of development is assumed to be the same as the program.

Aesthetics

Under Alternative 2, composting facilities and operations would be limited to areas already developed and suitable for such land uses, including existing solid waste facilities, industrial parks, agricultural lands, and other working landscapes. These locations typically exhibit a utilitarian visual character influenced by built infrastructure, equipment, access roads, and associated operational features. Under this alternative, some undeveloped areas where composting facilities and operations cannot be developed may include visual resources and have sensitive views (e.g., along a scenic highway). Impacts to aesthetics from Alternative 2 would be less than the program. This alternative would avoid the significant and unavoidable impact associated with substantial adverse changes in visual character/conditions.

Agriculture and Forestry Resources

Under Alternative 2, no composting facilities/operations would be constructed on Prime Farmland or Unique Farmland, or Farmland of Statewide Importance, nor within areas designated or qualifying as forestry resources. Therefore, impacts on agricultural and forestry resources would be less than those of the program. The significant impact to Important Farmland would be avoided altogether, through program design (rather than a programmatic mitigation as shown in Section 3.2, “Agriculture and Forestry Resources”) would ensure that no significant and unavoidable impacts would occur.

Air Quality

Under Alternative 2, the permitting of small- and medium-sized composting facilities/operations would occur only in already disturbed areas suitable for development. This could result in construction of fewer new composting facilities and operations in less-populated areas than under the program, since the current distribution of composting facilities and operations statewide is associated with more developed, urban areas. Avoiding these locations would require greater haul lengths for feedstocks and finished compost, and thus emissions of criteria pollutants would likely increase. With respect to TACs, small and medium composting facilities and operations under this alternative could still be located proximate to receptors which could result in

potential health risks. Due to the potential increase in criteria air pollutants, the air quality impacts of Alternative 2 would be greater than those associated with the program.

Archaeological, Historical, and Tribal Cultural Resources

Under Alternative 2, constructing small- and medium-sized composting facilities/operations would occur only in already disturbed areas suitable for development. With the exception of grazing areas, these areas would most likely have already been subjected to grading and excavation, and if cultural resources were present they may have been discovered at this time. However, the grazing areas may have never been graded or excavated, increasing the chances of finding previously undiscovered archaeological, historical, and Tribal resources. Impacts from Alternative 2 on these resources would be similar to the program.

Biological Resources

Under Alternative 2, the permitting of small- and medium-sized composting facilities/operations would occur only in already disturbed areas suitable for development. Compared to other undeveloped areas, these areas with existing disturbance would most likely be largely devoid of sensitive natural communities or aquatic resources that could support special status species. These areas would also likely be devoid of wildlife migration corridors or nursery areas. Under this alternative, impacts on biological resources would be less compared to the program.

Energy

Compared to the program, the same number of small- and medium-sized composting facilities/operations would be permitted, but their locations would be more restricted to already developed sites. The amount of energy required to construct and operate the composting site would be same as the program, but the amount of energy consumed for hauling agricultural waste longer distances would increase, since most existing composting facilities and operations , where construction would be allowed, are located closer to urban areas. Therefore and due to increased fuel usage, energy-related impacts of Alternative 2 would be more than the program.

Geology and Soils

Under Alternative 2, permitting small and medium composting facilities/operations would occur only in already disturbed areas suitable for development. As noted in Section 3.7 of this EIR, regardless of where composting sites would be constructed, all new composting facilities and operations that might occur in seismically active areas, areas of liquefaction, or areas of expansive or unstable soil would require a site-specific geotechnical investigation and any new structures built would need to comply with seismic requirements of the California Building Code. Regarding impacts to topsoil or erosion, all new facilities would have to comply with SWRCB's Construction Stormwater General Order, and any new composting facilities and operations requiring more than 1 acre would require a SWPPP. Given the uncertainty as to the specific locations where new composting facilities/operations will be constructed, paleontological resources could be found on any sites developed for new composting activities; and if this should occur, any of these sites would be required to implement the same mitigation measures to protect these resources. Impacts of Alternative 2 on geology and soils, including paleontological resources, would be similar to the program.

Greenhouse Gas Emissions and Climate Change

Under Alternative 2, permitting small and medium composting facilities and operations would occur only in already disturbed areas suitable for development. This would result in fewer composting activities constructed in rural areas compared to the program and could result in increased travel distances between the composting facilities, feedstock sources, and destinations for finished compost. Thus, GHG emissions would increase due to increased VMTs associated with increasing hauling distances for feedstock from more rural areas. Impacts of Alternative 2 would be greater than those associated with the program.

Hazards and Hazardous Materials

Under Alternative 2, permitting small and medium composting facilities and operations would occur only in already disturbed areas suitable for development. Operation of the new composting facilities and operations could expose workers to hazardous chemicals, pests, or vectors. Given that the exact locations where future composting activities would be constructed are unknown, some could be located within 5 miles of an airport, thereby increasing bird strike hazards similar to the program. Regardless of where composting facilities and operations would be constructed they would be subject to the same state and federal laws that regulate worker safety, (e.g., CAL/OSHA). Thus, impacts of Alternative 2 on hazards and hazardous materials would be similar to the program.

Hydrology and Water Quality

Under Alternative 2, new construction would be limited to already developed locations. Any small or medium facilities and operations constructed as part of this alternative would be subject to the Construction Stormwater Order and would require a SWPPP (required for all projects with a disturbance area of greater than 1 acre). Organic waste composting facilities require impervious surfaces and specialized water drainage and collection systems to comply with NPDES permits. As noted in Section 3.10, “Hydrology and Water Quality” of this EIR, compliance with these requirements would control site drainage and prevent new small and medium composting facilities and operations from generating substantial amounts of erosion, causing on- or off-site flooding, or creating substantial and unmanaged volumes of polluted runoff. The Composting General Order would also place specific restrictions on composting operations to prevent the release of pollutants off-site. Impacts from Alternative 2 on hydrology and water quality would be similar to the program.

Land Use and Planning

The construction of new small and medium composting facilities and operations at limited locations would still require review by private landowners, local governments and state agencies. In general, facilities/operations would be developed by private or local entities and would still be subject to local plans (e.g., general plans), policies, and ordinances. It is assumed, similar to the program, that project proponents would design and develop facilities and operations in a manner consistent with applicable local requirements. Therefore, impacts to land use and planning under Alternative 2 would be similar to the program.

Noise and Vibration

Under Alternative 2, constructing small and medium composting facilities and operations would occur only in already disturbed areas suitable for development. This would reduce but not preclude the potential for sensitive receptors to be exposed to composting-related noise. As such, stationary source noise from facilities/operations

would be equivalent to or less than the program. However, traffic-related noise associated with increased hauling distances for feedstock and finished compost would also occur. As such, mobile source operational noise would be higher due to longer trips exposing additional receptors to vehicle noise from composting. Impacts of Alternative 2 on noise and vibration would be higher than those associated with the program.

Public Services

Under Alternative 2, small and medium composting facilities and operations would occur only in already disturbed areas suitable for development. Under this alternative, service providers would go through the same review process to determine if additional resources would be needed to maintain service ratios in response to new composting facilities and operations calls for service. The total number of facilities and operations constructed would not change compared to the program, and therefore, the projected increase in demand for public services and recreation would not change. Impacts associated with implementation of this alternative would be the same as the program.

Transportation

Under Alternative 2, small and medium composting facilities/operations would occur only in already disturbed areas suitable for development (e.g., industrial-zoned properties, solid waste facilities, and grazing land). Due to the more limited potential for facilities/operations proximate to feedstock sources and locations for finished compost, haul distances may be greater and result in greater VMT per facility/operation. Impacts of Alternative 2 on transportation would be more than those associated with the program.

Utilities and Service Systems

Under Alternative 2, small and medium composting and operations facilities would occur only in already disturbed areas suitable for development. There would be no change in demand for utility services, thus impacts would be the same as the program.

Wildfire

Alternative 2 would involve development of composting facilities/operations and associated infrastructure but would be limited to locations where development has already occurred. Such infrastructure developments, regardless of their locations, including the composting facilities and operations themselves, could increase the risk of wildfire ignitions. However, for all new composting facilities/operations development standards, safety inspections and regulatory oversight substantially reduce the risk of wildfire ignitions caused by infrastructure, especially electrical infrastructure. Adherence to State minimum standards (14 CCR 17867[a][9]) that apply to all compostable materials handling operations related to fire prevention, protection, and control measures would ensure that program implementation would not introduce substantial wildfire risk. Compared to the program, impacts from Alternative 2 would be the same.

Achievement of Program Objectives

This alternative would meet most of the basic program objectives. Alternative 2 would fully achieve the first objective (use a consistent approach to streamlining construction and operations of small and medium composting facilities and operations throughout the state). It would also fully achieve the third objective (assist the State in achieving and maintaining SB1383 goals). Alternative 2 would not achieve the second objective (enhance and encourage developing small- and medium-sized facilities and operations throughout the state) to

the extent of the program since development would be restricted to existing solid waste disposal facilities, transfer stations, and grazing land.

6.4.3 Alternative 3: Removal of Food Material as an Allowable Feedstock

Under this alternative, food material would no longer be considered an allowable feedstock for small and medium composting facilities and operations. As noted in Chapter 2, "Project Description," it is considered unlikely under the program and generally for small composting operations to accept food waste (beyond vegetative food material) as an allowable feedstock due to compost mix requirements and costs associated with proper handling/processing of the feedstock. This alternative would fully remove food material as an allowable feedstock and small and medium composting facilities/operations under this alternative would only accept agricultural material, green material, and vegetative food material. The same criteria to site new composting facilities and operations would apply to Alternative 3. As a result, this alternative would result in a similar number of potential facilities/operations across the state, but food material would be an allowable feedstock only at large composting operations.

Aesthetics

Under Alternative 3, food material would be removed as an allowable feedstock. The same criteria to site new composting facilities and operations would apply to Alternative 3 and the reasonably foreseeable condition would remain the same. Similar to the program, the potential exists for some future composting facilities and operations to adversely affect scenic vistas and/or resources, such as those along a state scenic highway. Therefore, impacts of Alternative 3 on aesthetics would be the same as for the program.

Air Quality

Under Alternative 3, food material would be removed as an allowable feedstock. Compared to the program there would be decreased odors and potentially lower pollutant emissions because of the removal of food material, which includes a higher nutrient content and moisture than agricultural material, green material, and vegetative food material. Impacts of Alternative 3 on air quality would be less than the program.

Biological Resources

Under Alternative 3, the same number of small and medium composting facilities and operations would be developed as under the program. Due to the same level of development and potential to disturb special status species, habitat, and sensitive natural communities, this alternative would have similar impacts to biological resources as the program.

Archaeological, Historical, and Tribal Cultural Resources

Under Alternative 3, the same number of small and medium composting facilities and operations would be constructed as under the program. Due to the similar potential for land disturbance (including native soils), the potential for discovery of a previously undiscovered archaeological/historical/tribal cultural resource would remain the same as the program, and similar mitigation would be required. Overall, impacts would be similar to the program under this alternative.

Energy

Under Alternative 3, the same number of small and medium composting facilities and operations would be constructed as under the program. Although food material would not be accepted, the remaining allowable feedstocks would remain appropriately proportioned so as to allow for efficient composting, and the energy demand of the potential small and medium composting facilities/operations would remain the same. As a result, impacts would be the same as the program.

Geology and Soils

Under Alternative 3, food material would not be an acceptable feedstock for small and medium composting facilities and operations. However, regardless of where new facilities and operations would be constructed, all new facilities/operations that might occur in seismically active areas, areas of liquefaction, or areas of expansive or unstable soil would require a site-specific geotechnical investigation. Any new on-site structures built would be subject to the seismic requirements of the California Building Code. Regarding impacts to topsoil or erosion, all new facilities/operations would also have to comply with SWRCB's Construction Stormwater General Order and Compost General Order, and any new composting facilities and operations requiring more than 1 acre of disturbance would require a SWPPP. Given the uncertainty as to the specific locations where new composting facilities and operations could be constructed, paleontological resources could be found on any sites developed for new construction facilities/operations, and should this occur any of these sites would be required to implement the same mitigation measures to protect these resources. Due to the similar level of development that would occur under this alternative, impacts of Alternative 3 on geology and soils, including paleontological resources, would be similar to the program.

Greenhouse Gas Emissions and Climate Change

Alternative 3 would not allow composting of food material, including non-vegetative material. As a result, GHG's specifically associated with small and medium composting facilities/operations would be lower under this alternative because this source of feedstock would not be composted on-site as part of the reasonably foreseeable condition. However, GHGs associated with waste decomposition within a landfill are generally higher than GHGs associated with composting. As such and from a statewide perspective, the level of reduction in GHG emissions of the program would not be realized with this alternative, and as such, Alternative 3 would have greater impacts (due to the lesser reduction in GHG emissions) than the program.

Hazards and Hazardous Materials

Regardless of the type of feedstock composted, all composting facilities and operations could expose workers to hazardous chemicals, pests, or vectors, but they would still be subject to the same state and federal laws that regulate worker safety, CAL/OSHA and others described in Section 3.9, "Hazards and Hazardous Materials" of this EIR. Thus, impacts of Alternative 3 on hazards and hazardous materials would be similar to the program.

Hydrology and Water Quality

Alternative 3 would not allow the acceptance of food material as a feedstock at small and medium composting facilities and operations under the program. Regardless of the type of feedstock allowed, small and medium composting facilities and operations would be required to comply with SWRCB Construction Stormwater Order, as well as the Compost General Order, and would require a SWPPP (if greater than 1 acre). Compliance with

these requirements would control site drainage and prevent new small and medium composting facilities and operations from generating substantial amounts of erosion, causing on or off-site flooding, or creating substantial and unmanaged volumes of polluted runoff. Impacts from Alternative 3 on hydrology and water quality would be similar to the program.

Land Use and Planning

The construction and operation of small- and medium-sized composting facilities and operations under this alternative would require review by private landowners, local governments, and state agencies, similar to the program. In general, facilities/operations would be developed by private or local entities and would still be subject to local plans (e.g., general plans), policies, and ordinances. Project proponents under this alternative would design and develop facilities and operations in a manner consistent with local regulations, as applicable. Therefore, impacts to land use and planning under Alternative 3 would be similar to the program.

Noise and Vibration

The modification of allowable feedstocks under this alternative would not modify the range of potential locations for small and medium composting facilities/operations, nor would it modify the on-site capacity or anticipated throughput of the facilities/operations such that noise and vibration impacts associated with its implementation would change. Transportation-related noise associated with the transport of feedstocks to and finished compost from each facility/operation would remain dependent on the capacity of a given facility/operation, and operational noise associated with the movement and processing of materials on-site would remain the same. Impacts would be similar to the program.

Public Services

Under this alternative, the demand for public service providers would be similar to the program as the number and potential locations of small and medium facilities and operations would be the same. As a result, impacts to public services would be the same as the program.

Transportation

Under Alternative 3, the operation of small and medium composting facilities and operations would be similar to the program. The on-site capacity and anticipated throughput of small and medium composting facilities and operations would be maintained under this alternative. As a result, potential transportation impacts, including VMT, would remain the same as under the program.

Utilities and Service Systems

Under Alternative 3, the location and permitting of small and medium composting facilities and operations would be similar to the program. It is possible that water demand may change slightly for medium facilities based on the removal of food material as an allowable feedstock but overall, this alternative would have similar utility demands as the program and would be served by local utility providers. Impacts would be similar to the program under this alternative.

Wildfire

This alternative would remove food material as an allowable feedstock but would not change the number, type, or capacity of small and medium composting facilities and operations that could be developed. Any new composting facilities and operations would be subject to the regulations identified for the program to reduce wildfire risk. Impacts would be the same as the program.

Achievement of Program Objectives

Alternative 3 would fully achieve the first objective of the program. However, it would only partially achieve the second and third objectives as the removal of food material as an allowable feedstock would not be fully consistent with SB 1046's direction to CalRecycle, nor would it be as consistent with furthering the State's goal to achieve SB 1383 waste reduction target.

6.5 Comparison of Alternatives

Table 6-1 summarizes the environmental analysis provided for the No Project alternative and two other alternatives. Alternative 1, the No Project alternative, would reduce impacts in 11 of the 17 topics analyzed in this EIR. Alternative 2, Reduced Program with Location Limitations, would have less impacts for 5 of the 17 topics, and more impacts for five of the topics due to longer hauling distances of feedstock. Alternative 3, Removal of Food material as an Allowable Feedstock, would have less impacts for one of the topics, and more impacts for one of the topics.

Table 6-1. Summary of Environmental Effects[1] of the Alternatives Relative to the Program

Environmental Topic	Program	Alternative 1: No Project Alternative	Alternative 2: Reduced Program with Location Limitations	Alternative 3: Removal of Food Waste as an Allowable Feedstock
Aesthetics	SU	Less	Less	Same
Air Quality	LTS/M	Less	Less	Less
Agricultural and Forestry Resources	SU	Less	Greater	Same
Archaeological, Historical, and Tribal Cultural Resources	SU	Less	Same	Same
Biological Resources	SU	Less	Less	Same
Energy	LTS	Less	Greater	Same
Geology and Soils	LTS/M	Same	Less	Same
Greenhouse Gas Emissions and Climate Change	LTS	Less	Greater	Greater
Hazards and Hazardous Materials	LTS/M	Same	Same	Same

Environmental Topic	Program	Alternative 1: No Project Alternative	Alternative 2: Reduced Program with Location Limitations	Alternative 3: Removal of Food Waste as an Allowable Feedstock
Hydrology and Water Quality	LTS	Same	Same	Same
Land Use and Planning	LTS	Same	Same	Same
Noise and Vibration	SU	Less	Greater	Same
Public Services	LTS	Similar	Same	Same
Transportation	SU	Less	Greater	Same
Utilities and Service Systems	LTS	Less	Same	Same
Wildfire	LTS/M	Less	Same	Same

Impact Status:
LTS = less-than-significant impact
LTS/M = LTS with mitigation
SU = Significant and Unavoidable

6.6 Environmentally Superior Alternative

The State CEQA Guidelines Section 15126.6 states that an EIR should identify the "environmentally superior" alternative. "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." As shown in the Executive Summary chapter of this EIR, there would be significant impacts associated with the program and the statewide development and operation of small and medium composting facilities and operations. These impacts are related to aesthetics; air quality; archaeological, historical, and Tribal cultural resources; biological resources; geology and soils; hazards; noise; and transportation.

When considering the extent to which alternatives reduced the program's significant effects, Alternative 1, the No Project alternative, would reduce impacts for the majority of topics analyzed in this EIR. Alternative 2, Reduced Program with Location Limitations, would have lesser impacts compared program for several issue areas but would also increase impacts for others. Similarly, Alternative 3 would have less impact with respect to air quality but potentially greater impact with respect to GHG. On balance and for the reasons stated, the environmentally superior alternative would be the No Project alternative, although it would not achieve any of the basic program objectives to the degree the program would. Among the other alternatives, Alternative 2 would be the environmentally superior alternative, as it would avoid two significant impacts associated with program implementation. However, it would not achieve the program objectives to the extent the program would.

7 Report Preparers

7.1 Department of Resources Recycling and Recovery (CalRecycle)

Martin Perez	Environmental Program Manager
Jeffery Esquivel	Project Manager, Senior Environmental Scientist

7.2 NCE

Mike Leacox	Principal-in-Charge
Chris Mundhenk	Project Manager, Principal
Ryan Bast	Senior Geologist
Gail Ervin	Principal
Emily Pullman	Senior Biologist
Jeremy Hall	Senior Cultural Resources Specialist
Stuart Rathbone	Archaeologist
Charles Zeier	Archaeologist
Nora Pizzella	Transportation Planner
Catrina Vaz	Environmental Scientist
Caleb Hute	Environmental Scientist/Biologist
Katie Robinson	Senior Field Scientist
Beki Croston	Technical Editor

7.3 Yorke Engineering

Julie Mitchell	Principal Scientist
Russell Kingsley	Principal Engineer
Tina Darjazanie	Senior Engineer
Harry Wilfong	Senior Engineer
Samantha Hing	Engineer

7.4 CreativEnvironment Group (CEG)

Stephanie Parsons	Principal
Geo Graening	Senior Consultant

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Chapter 5 Other CEQA Sections

No references cited.

Chapter 6 Alternatives

No references cited.

Appendix A

NOP and Comments Received

NCE has made every effort to provide this report and all associated information in an accessible format. If you need the appendices in an alternative format please contact Jeffrey Esquivel, (916) 341-6337, jeffery.esquivel@calrecycle.ca.gov.

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT AND PUBLIC SCOPING MEETING DATE

July 22, 2026

TO: California Governor's Office of Land Use and Climate Innovation, State Clearinghouse; California Responsible and Trustee Agencies; Other Interested Public Agencies; and Interested Parties and Organizations

SUBJECT: Notice of Preparation of a Program Environmental Impact Report and Notice of Public Scoping Meetings

PROJECT: Small and Medium Composting Facilities and Operations Program Environmental Impact Report

LEAD AGENCY: California Department of Resources Recycling and Recovery (CalRecycle)

REVIEW PERIOD: July 22, 2026, through August 21, 2026

The California Department of Resources Recycling and Recovery (CalRecycle), as the Lead Agency, is preparing a Program Environmental Impact Report (PEIR) pursuant to the California Environmental Quality Act (CEQA) for small and medium composting facilities and operations consistent with the requirements of Senate Bill (SB) 1046, which is further described below. CalRecycle is requesting identification of the scope and content of environmental issues and information that you or your organization believe should be considered in the PEIR.

PROJECT LOCATION: As shown in Figure 1 below, the Proposed Program would occur throughout the entirety of the State of California.

BACKGROUND: With the passage and implementation of SB 1383 in 2016, CalRecycle, in consultation with CARB, developed a series of goals (and associated regulations) to reduce disposal of organic waste (statewide) by 50 percent of 2014 levels by 2020 and 75 percent by 2025. In addition, a recovery goal of at least 20 percent by 2025 of edible food in the organic waste stream was established. CalRecycle prepared an EIR related to SB 1383 (certified in 2019) that evaluated the expansion and development of large composting facilities throughout the state in response to the established goals. The SB 1383 EIR evaluated the potential impacts of the development and expansion of larger (i.e., greater than 25,000 tons per year [tpy]) composting facilities, as well as other types of waste reduction facilities, throughout the state.

In 2024, CalRecycle prepared an evaluation of current practices and permitting related to the development of small (less than 10,000 tpy) and medium (less than 25,000 tpy) composting facilities that accept agricultural, food, and green material. As identified in that study, the entitlement and environmental review of small and medium composting facilities and operations has been historically approached in many different ways with some facilities non-discretionary (i.e., not a project under CEQA) while others would involve preparation of either a Notice of Exemption, Negative Declaration, or Mitigated Negative Declaration pursuant to CEQA requirements. This historic approach has led to challenges associated with permitting and development, following initial approval by the local jurisdiction. In order to ensure that the State continues to achieve and exceed SB 1383 targets, it is reasonably foreseeable that the

development of additional small and medium composting facilities and operations is necessary, especially within more rural areas of the state.

PROPOSED PROJECT: CalRecycle is now proposing adoption of a statewide PEIR to assist in the process to approve, site, and develop small and medium compostable material handling facilities and operations throughout the State of California, as required by the Organic Waste Reduction Bill (SB 1046, Laird, Chapter 452, Statutes of 2024). SB 1046 requires CalRecycle to prepare a PEIR to provide a consistent approach and consider impacts associated with construction and operation of small and medium composting facilities and operations statewide. The PEIR is also intended to provide an opportunity that will allow for a more consistent approach to siting and permitting (consistent with Section 15168 of the State CEQA Guidelines). The PEIR may serve as the first-tier analysis for later, more detailed, site-specific environmental reviews as necessary. Lead agencies and responsible agencies such as local land use and planning agencies, local enforcement agencies, and CalRecycle may use the CEQA document in considering subsequent discretionary actions.

ISSUES TO BE ADDRESSED IN THE ENVIRONMENTAL IMPACT REPORT: As permitted by Section 15060(d) of the State CEQA Guidelines, CalRecycle has not prepared an Initial Study/Environmental Checklist, as preparation of a PEIR is mandated by SB 1046 (2024). Based on the PEIR description and CalRecycle's understanding of the environmental issues associated with future development of small and medium composting facilities, it is anticipated that the PEIR has the potential to result in environmental effects associated with some or all of the following environmental resource areas, which will be addressed in the PEIR:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gases
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise and Vibration
- Public Services
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

As the project would be intended to increase composting within the state and would not increase population or result in the removal of substantial housing opportunities within the state, evaluation of potential impacts associated with population and housing, as well as recreation, is not anticipated. Alternatives to be analyzed in the PEIR are to be defined and analyzed consistent with the requirements of CEQA Guidelines, Section 15126.6. The specific project alternatives to be evaluated in the PEIR may include, but are not limited to, the "No PEIR" alternative, as required by CEQA.

PUBLIC REVIEW AND COMMENTS: CalRecycle is soliciting comments from responsible and trustee agencies as well as interested parties as to the scope and content of the environmental information to be included in the PEIR. In

accordance with CEQA, agencies are requested to review the Proposed PEIR provided in this Notice of Preparation (NOP) and to provide comments on environmental issues related to the statutory responsibilities of each responsible or trustee agency.

SUBMITTAL OF WRITTEN COMMENTS: In accordance with CEQA Section 15082, this NOP is being circulated for a 30-day comment period. CalRecycle requests that written or typed comments be provided at the earliest possible date, but no later than **August 21, 2026**. Comments may be submitted via the following:

Electronically to: Permittrainingassistance@calrecycle.ca.gov

Or Mail to: Department of Resources Recycling and Recovery (CalRecycle)
Waste Permitting, Compliance, & Mitigation Division
Permitting and Assistance Branch
Attn: Jeffery Esquivel
1001 I Street, MS#10A
Sacramento, CA 95814

Please include the following information in your response:

- For all respondents, please provide name and contact information and identify the environmental information and issues that you believe should be addressed in the PEIR.

- For agency respondents, please provide the name of the responsible individual with contact information (mailing address, e-mail, and telephone number). List any potential permit(s) or approval(s) for the project under your agency's authority and any reasonably foreseeable projects, programs, or plans that may have an overlapping influence with the proposed project.

- Comments provided by email should include "**Small and Medium Composting Facilities Program EIR**" in the subject line and the name and physical address of the commenter in the body of the email.

DOCUMENT AVAILABILITY: Proposed PEIR information materials, including this NOP, can be viewed on the CalRecycle website at: https://calrecycle.ca.gov/swfacilities/permitting/ceqa/ Future CEQA documents, including the PEIR, will also be made available at this webpage and at CalRecycle's Public Notice webpage, https://www2.calrecycle.ca.gov/publicnotices/ .

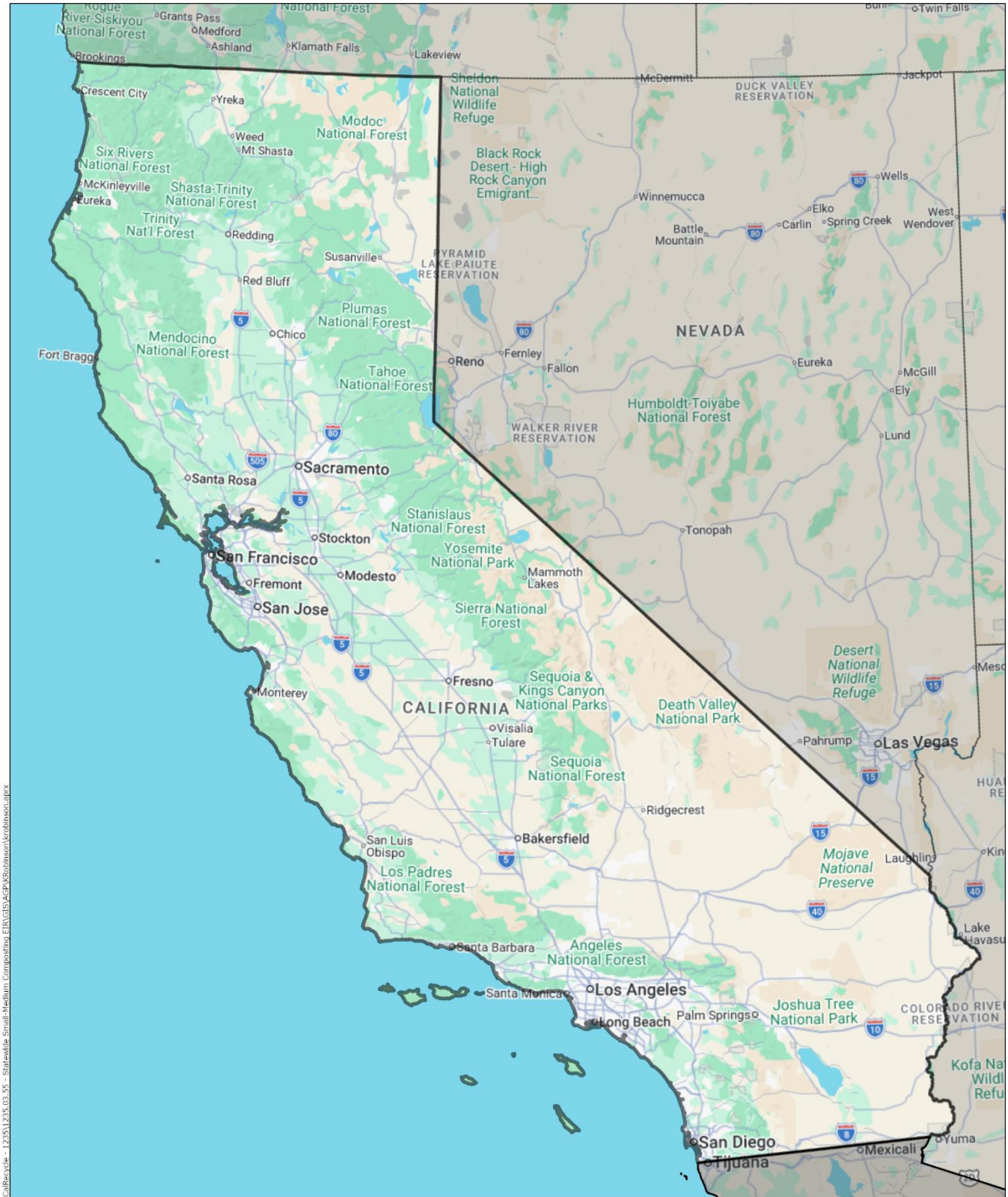
NOTICE OF SCOPING MEETINGS: CalRecycle will conduct two scoping meetings for the purposes of soliciting written comments from interested parties, responsible agencies, agencies with jurisdiction by law, trustee agencies, and involved federal agencies, as to the appropriate scope and content of the PEIR. The meetings will be held virtually on August 6, 2026. The first meeting is intended for public agencies only and will take place between 3 and 4:30 pm, and the second meeting will be held later for interested members of the public between 6 and 7:30 pm.

To attend either meeting, participants must register here:

Local and State public agencies register here: https://us02web.zoom.us/meeting/register/Zjh0phRnQVaCgwoRU4VCfA

Members of the public register here: https://us02web.zoom.us/meeting/register/zq3cCvEqTNa4TdTG7E3BFQ

After registering, participants will receive a link via email to join the appropriate webinar.



Legend

State of California

CalRecycle

NCE

Project Location

N

1 in. = 80 mi.

0 40 80 mi.

FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Google Roads Basemap	1235.03.55	K. Robinson	7/8/2026	-	-

Document Path: P:\Active Projects\CalRecycle - 1235\1235.03.55 - Statewide Small-Neilium Composting EIR\GIS\AEPX\Robinson\krobinson.aprx

NATIVE AMERICAN HERITAGE COMMISSION

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COMMISSIONER
Vacant

EXECUTIVE SECRETARY
Andrew Alejandre
Paskenta Band of Nomlaki Indians

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

August 6, 2026

Jeffrey Esquivel
California Department of Resources Recycling and Recovery (CalRecycle)

Via Email to: Jeffery.Esquivel@calrecycle.ca.gov

Re: 2026070901, Small and Medium Composting Facilities and Operations Project, Statewide Counties

To Whom It May Concern:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation of a Draft Environmental Impact Report for the project referenced above. The California Environmental Quality Act (CEQA) includes a separate category of cultural resources, "tribal cultural resources" 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. Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. To determine whether a project will cause a substantial adverse change in the significance of a tribal cultural resource, a lead agency will need to determine whether there are tribal cultural resources within the project area.

Consultation with California Native American Tribes that are traditionally and culturally affiliated with the geographic area of your proposed project should occur as early as possible. Early consultation will assist in developing a plan for protecting tribal cultural resources and avoiding inadvertent discoveries of Native American human remains.

For a list of tribes that are traditionally and culturally affiliated with your project area, or for any questions or additional information regarding tribal consultation, please contact me at Mathew.lin@nahc.ca.gov.

Sincerely,

Mathew Lin

Mathew Lin, MPP
Cultural Resources Analyst

cc: State Clearinghouse

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

August 19, 2026

Jeffery Esquivel
California Department of Resources Recycling and Recovery
Waste Permitting, Compliance, & Mitigation Division
1001 I Street, MS #10A
Sacramento, CA 95814

Project: Small and Medium Composting Facilities and Operations Program Environmental Impact Report

District CEQA Reference No: 20260895

Dear Mr. Esquivel:

The San Joaquin Valley Air Pollution Control District (District) has reviewed the Notice of Preparation (NOP) from the California Department of Resources Recycling and Recovery (CalRecycle) for the proposed project above. Per the NOP, the project consists of the adoption of a statewide Program Environmental Impact Report (PEIR) to assist in the process to approve, site, and develop small and medium compostable material handling facilities and operations throughout the State of California (Project). The Project is located throughout the entirety of the State of California.

The Project is a program-level project and, while project-specific data may not be available until specific approvals are being granted, the PEIR should include a discussion of policies, which when implemented, will reduce or mitigate impacts on air quality at the individual project level.

The District offers the following comments at this time regarding the Project:

1) Project Related Emissions

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, and PM2.5 standards.

Samir Sheikh
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: (661) 392-5500 FAX: (661) 392-5585

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As such, the District recommends that the PEIR stipulate that future development projects within the Small and Medium Composting Facilities and Operations PEIR identify and characterize project construction and operational air emissions. The District recommends the air emissions be compared to the District significance thresholds as identified in the District's Guidance for Assessing and Mitigating Air Quality Impacts: https://ww2.valleyair.org/media/g4nl3p0g/gamaqi.pdf.

The District recommends that future projects be mitigated to the extent feasible, and that future projects with air emissions above the aforementioned thresholds be mitigated to below these thresholds.

The District understands that the Small and Medium Composting Facilities and Operations PEIR is a program-level project where future individual project-specific data may not be available at this time. As such, the PEIR should include a discussion of policies, which when implemented, will require assessment and characterization of project-level emissions, and subsequently require mitigation of air quality impacts to the extent feasible at the individual project-specific level. Environmental reviews of potential impacts on air quality should incorporate the following items:

1a) Construction Emissions

The District recommends, to reduce impacts from construction-related diesel exhaust emissions, future development projects should utilize the cleanest available off-road construction 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://ww2.valleyair.org/media/g4nl3p0g/gamaqi.pdf.

Recommended Mitigation Measure: At a minimum, project related impacts on air quality should be reduced to levels below the District's significance thresholds 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) Recommended Model for Quantifying Air Emissions

Future development 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

CalRecycle 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 future development projects that may be approved under implementation of 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. Please contact the District for assistance with performing a Prioritization analysis.

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.

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.

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: https://ww2.valleyair.org/permitting/ceqa/.

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 to prevent the creation of a significant health risk 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 any future development projects that may be approved under implementation of the Project with emissions that exceed 100 pounds per day of any pollutant.

An AAQA uses air dispersion modeling to determine if emission increase from a project will cause or contribute to a violation of State or National Ambien Air Quality Standards. 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: https://ww2.valleyair.org/permitting/ceqa/.

4) Voluntary Emission Reduction Agreement

Future development projects from the Project could have a significant impact on air quality. The District recommends the PEIR include a feasibility discussion on implementing a Voluntary Emission Reduction Agreement (VERA) as a mitigation measure for future development projects that may be approved under implementation of the Project that are determined to exceed the District's CEQA significance thresholds.

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.

5) Allowed Uses Not Requiring Project-Specific Discretionary Approval

In the event that CalRecycle determines that a project be approved as an allowed use not requiring a project-specific discretionary approval, the District recommends the PEIR include language requiring such projects to prepare a technical assessment, in consultation with the District, to determine if additional analysis and/or mitigation is required.

6) Vegetative Barriers and Urban Greening

For future development projects within the Project area, and at strategic locations throughout the Project area in general, the District suggests CalRecycle consider incorporating vegetative barriers and urban greening as a measure to further reduce air pollution exposure on sensitive receptors (e.g., residences, schools, healthcare facilities).

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.

7) 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 CalRecycle consider incorporating solar power systems as an emission reduction strategy for future development projects that may be approved under implementation of the Project.

8) 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.

CalRecycle should consider all available pertinent information to determine if future development projects 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.

As the future development projects that will fall within the Small and Medium Composting Facilities and Operations PEIR do not yet exist, CalRecycle should stipulate odor mitigation measures in the PEIR as conditions of approval for those business and industry types. An example would be for a project proponent whose project is determined to have a potentially significant odor impact to draft and implement an odor management plan as a mitigation measure in the PEIR.

9) 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: https://ww2.valleyair.org/rules-and-planning/current-district-rules-and-regulations. 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.

9a) 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).

Future development projects may be subject to District Rule 2010 (Permits Required) and Rule 2201 (New and Modified Stationary Source Review) and may require District permits. Prior to construction, project proponents shall obtain an ATC permit from the District for equipment/activities subject to District permitting requirements.

Recommended Mitigation Measure: For projects subject to permitting by the San Joaquin Valley Air Pollution Control District, demonstration of compliance with District Rule 2201 (obtain ATC permit from the District) shall be provided to CalRecycle before issuance of the first building permit.

For further information or assistance, project proponents may contact the District's SBA Office at (559) 230-5888.

9b) District Rule 9510 - Indirect Source Review (ISR)

Future development projects within the Small and Medium Composting Facilities and Operations PEIR may be subject to District Rule 9510 if upon full buildout, the project would equal or exceed any of the following applicability thresholds, depending on the type of development and public agency approval mechanism:

Table 1: ISR Applicability Thresholds

Development Type	Discretionary Approval Threshold	Ministerial Approval / Allowed Use / By Right Thresholds
Residential	50 dwelling units	250 dwelling units
Commercial	2,000 square feet	10,000 square feet
Light Industrial	25,000 square feet	125,000 square feet
Heavy Industrial	100,000 square feet	500,000 square feet
Medical Office	20,000 square feet	100,000 square feet

General Office	39,000 square feet	195,000 square feet
Educational Office	9,000 square feet	45,000 square feet
Government	10,00 square feet	50,000 square feet
Recreational	20,000 square feet	100,000 square feet
Other	9,000 square feet	45,000 square feet

District Rule 9510 also applies to any transportation or transit development projects where construction exhaust emissions equal or exceed two tons of NOx or two tons of PM.

The purpose of District Rule 9510 is to reduce the growth in both NOx and PM emissions associated with development and transportation projects from mobile and area sources; specifically, the emissions associated with the construction and subsequent operation of development projects. The Rule requires developers to mitigate their NOx and PM emissions by incorporating clean air design elements into their projects.

Should the proposed development project clean air design elements be insufficient to meet the required emission reductions, developers must pay a fee that ultimately funds incentive projects to achieve off-site emissions reductions.

In the case the individual development project is subject to District Rule 9510, per Section 5.0 of the rule, an Air Impact Assessment (AIA) application is required to be submitted no later than applying for project-level approval from a public agency so that proper mitigation and clean air design under ISR can be incorporated into the public agency's analysis.

Information about how to comply with District Rule 9510 can be found online at: https://ww2.valleyair.org/permitting/indirect-source-review-rule-overview

The AIA application form can be found online at: https://ww2.valleyair.org/permitting/indirect-source-review-rule-overview/forms-and-applications/

District staff is available to provide assistance with determining if future development projects will be subject to Rule 9510, and can be reached by phone at (559) 230-5900 or by email at ISR@valleyair.org.

9c) District Rule 9410 (Employer Based Trip Reduction)

Future development projects may be subject to District Rule 9410 (Employer Based Trip Reduction) if the project would result in employment of 100 or more "eligible" employees. District Rule 9410 requires employers with 100 or more "eligible" employees at a worksite to establish an Employer Trip Reduction

Implementation Plan (eTRIP) that encourages employees to reduce single-occupancy vehicle trips, thus reducing pollutant emissions associated with work commutes. Under an eTRIP plan, employers have the flexibility to select the options that work best for their worksites and their employees.

Information about District Rule 9410 can be found online at: https://ww2.valleyair.org/compliance/rule-9410-employer-based-trip-reduction/.

For additional information, you can contact the District by phone at 559-230-6000 or by e-mail at etrip@valleyair.org

9d) District Rule 4002 (National Emissions Standards for Hazardous Air Pollutants)

In the event an existing building will be renovated, partially demolished or removed, Future development projects may be subject to District Rule 4002. This rule requires a thorough inspection for asbestos to be conducted before any regulated facility is demolished or renovated. Information on how to comply with District Rule 4002 can be found online at: https://ww2.valleyair.org/compliance/demolition-renovation/

9e) District Rule 4601 (Architectural Coatings)

Future development projects may be subject to District Rule 4601 since they may utilize architectural coatings. Architectural coatings are paints, varnishes, sealers, or stains that are applied to structures, portable buildings, pavements or curbs. The purpose of this rule is to limit VOC emissions from architectural coatings. In addition, this rule specifies architectural coatings storage, cleanup and labeling requirements. Additional information on how to comply with District Rule 4601 requirements can be found online at: https://ww2.valleyair.org/media/tkgjeusd/rule-4601.pdf

9f) District Regulation VIII (Fugitive PM10 Prohibitions)

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://ww2.valleyair.org/media/fm3jrbsq/dcp-form.docx

Information about District Regulation VIII can be found online at: https://ww2.valleyair.org/dustcontrol

10) Future Projects / Land Use Agency Referral Documents

Future development projects may require an environmental review and air emissions mitigation. A project's referral documents and environmental review documents provided to the District for review should include a project summary, the land use designation, project size, air emissions quantifications and impacts, and proximity to sensitive receptors and existing emission sources, and air emissions mitigation measures. For reference and guidance, more information can be found in the District's Guidance for Assessing and Mitigating Air Quality Impacts at: https://ww2.valleyair.org/media/g4nl3p0g/gamaqi.pdf

If you have any questions or require further information, please contact Jacob Torrez by e-mail at Jacob.torrez@valleyair.org or by phone at (559) 230-6558.

Sincerely,

Mark Montelongo
Director of Policy and Government Affairs



For Daniel Martinez
Program Manager

County Administration South
601 North Ross Street
Santa Ana, CA 92701

P.O. Box 4048
Santa Ana, CA 92702

(714)667-8800

projectinfo@pw.oc.gov

pw.oc.gov

Administrative Services

OC Agricultural Commissioner's Office

OC Construction

OC Environmental Resources

OC Development Services

OC Facilities Design & Construction Management & CUF

OC Facilities Maintenance

OC Fleet Services

OC Infrastructure Programs

OC Operations & Maintenance

OC Public Works

August 20, 2026

Jeffery Esquivel
Department of Resources Recycling and Recovery (CalRecycle)
Waste Permitting, Compliance, & Mitigation Division
Permitting and Assistance Branch
1001 I Street, MS#10A
Sacramento, CA 95814

Subject: NCL-26-0008 – Notice of Preparation (NOP) of a Program Environmental Impact Report (PEIR) for small and medium composting facilities and operations in California.

Dear Jeffery Esquivel,

Thank you for the opportunity to comment on the Notice of Preparation (NOP) of a Program Environmental Impact Report (PEIR) for small and medium composting facilities and operations in California. The County offers the following comments:

OC Environmental Resources:
Composting facility sites can be throughout Orange County, CA. Environmental Resources recommends the following water quality issues be addressed in the subsequent environmental documents:

1. Projects that, as part of a common plan of development, disturb one or more acres are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity, Order 2022-0057-DWQ and implement a Storm Water Pollution Prevention Plan (SWPPP) and monitoring program consistent with permit requirements.
2. Specific mention should be made of whether or not the project qualifies as a *Priority Development Project* under the city's municipal stormwater permit (Santa Ana Regional Board Order R8-2009-0030) or instead is a Non-Priority Project which would require preparation of a Non-Priority Water Quality Project Plan.
3. For projects that occur in Orange County, CA, specific mention should be made of the Orange County Stormwater Program's Drainage Area Management Plan (DAMP). The DAMP is Orange County's principal policy and program guidance document for stormwater management and includes a Technical Guidance Document to follow when preparing the project's Water Quality Management Plan.
4. Specific mention should be made of the potential water quality impacts from the proposed project, and identification of the anticipated pollutants to be generated by the project should be provided.

Thank you again for the opportunity to review the NOP. If you have any questions regarding these comments, please contact Kylie Sanchez at (714) 667-8895 for OC Development Services or Matt Tucker at (714) 955-0669 for OC Environmental Resources. Please continue to keep the County of Orange on the distribution list for future notifications related to the PEIR.

Sincerely,

Signed by:
4176EFD2B6E5496...

Kylie Sanchez, Land Use Manager
OC Public Works /OC Development Services
601 North Ross Street
Santa Ana, California 92701
kylie.sanchez@pw.oc.gov

cc: Cindy Salazar, Planning Division Manager, OC Development Services
Virginia Gomez, Senior Planner, OC Development Services
Tracy Ingebrigtsen, Countywide Compliance Manager, OC Environmental Resources
Matt Tucker, Environmental Resource Specialist, OC Environmental Resources

Local Enforcement Agency

AMY HARBERT
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH AND QUALITY
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
Phone: (858) 505-6700 | www.sdcdehq.org

HEATHER BUONOMO, REHS
DIRECTOR OF ENVIRONMENTAL HEALTH

August 20, 2026

Jeffery Esquivel
Permitting & Assistance Branch
Waste Permitting, Compliance & Mitigation Division
Department of Resources Recycling and Recovery (CalRecycle)
1001 I Street, MS #10A
Sacramento, CA 95814

RE: *Small and Medium Composting Facilities Program EIR – LEA Comments on Notice of Preparation*

Dear Mr. Esquivel,

The Department of Environmental Health and Quality, Local Enforcement Agency (LEA) for San Diego County appreciates the opportunity to comment on the Notice of Preparation (NOP) for the Small and Medium Composting Facilities and Operations Program Environmental Impact Report (PEIR), released July 22, 2026. These comments are provided in accordance with the California Environmental Quality Act (CEQA) and consistent with the duties of a Responsible Agency under CEQA Guidelines §15096, which require Responsible Agencies to respond to NOPs and identify environmental information relevant to their regulatory authority.

In general, the PEIR should clearly identify how environmental review under the statewide program will interface with existing LEA responsibilities, including solid waste facility permitting, inspections, and enforcement actions. The PEIR should also clearly explain how local agencies — including LEAs — can rely on this statewide document when reviewing and permitting future small and medium composting facilities and operations.

The LEA submits the following comments, organized by environmental resource category, focusing on what information or guidance would be most helpful for local oversight and permitting of small and medium composting facilities.

Aesthetics

The PEIR should describe general site-design practices that reduce visual impacts, such as organized pile layout, screening, equipment storage, and lighting considerations. Clear, practical expectations would help LEAs guide operators and reduce community complaints.

Agriculture and Forestry Resources

Many operations will be located on agricultural or rural land. The PEIR should address potential compatibility considerations — for example, how composting activities may interact with farming operations — so LEAs can direct applicants to appropriate land-use agencies when agricultural concerns arise. For sites in high-fire-hazard areas, the PEIR should include general fire safety principles relevant to those environments.

Air Quality

Odors and dust are significant sources of public complaints to LEAs. The PEIR should include practical, achievable guidance on odor management, feedstock handling, pile management, watering practices, and dust control measures. Standardized expectations would support consistent operational expectations and regulatory oversight.

Biological Resources

The PEIR should identify common biological considerations and include basic procedures operators should follow if biological resources are discovered and provide consistent statewide process for notifying appropriate authorities. This helps LEAs direct applicants appropriately and ensures early coordination with the correct agencies.

Cultural Resources

The PEIR should include basic procedures for operators to follow if cultural or archaeological materials are unexpectedly discovered during site preparation. LEAs would benefit from a consistent statewide process for notifying appropriate authorities.

Energy

The PEIR should describe typical energy needs for small and medium composting operations, including blowers, pumps, and equipment, so LEAs can ensure operators plan appropriately and maintain adequate power for safe operations.

Geology and Soils

The PEIR should identify basic soil and grading considerations that support safe and compliant operations, such as stable operating surfaces, proper slopes, stormwater controls, and erosion-prevention measures. These conditions directly affect nuisance control and enforcement.

Greenhouse Gases

Composting reduces methane emissions by diverting organics from landfills. The PEIR should outline general statewide assumptions about GHG reductions and identify typical sources of emissions for small and medium operations (equipment, transportation). This allows LEAs to provide consistent information to applicants and the public.

Hazards and Hazardous Materials

Feedstock contamination and fire hazards are major LEA concerns. The PEIR should clearly identify acceptable feedstocks, load-checking expectations, and minimum fire-prevention measures (pile size limits, spacing, water access, emergency procedures). This guidance is essential for inspections and enforcement.

Hydrology and Water Quality

Runoff and leachate can create odor, vector, and nuisance conditions. The PEIR should provide foundational guidance on pad construction, slopes, drainage, stormwater controls, and water-supply needs. LEAs rely heavily on these features to assess operational safety.

Land Use and Planning

The PEIR should identify common land-use compatibility considerations and clarify the respective roles of local planning departments and LEAs. This will help LEAs provide accurate direction to applicants and support consistent interagency coordination.

Mineral Resources

The PEIR should acknowledge that some rural areas contain mineral resource zones and provide general guidance on avoiding conflicts. This helps LEAs flag potential issues early and direct operators to land-use authorities.

Noise and Vibration

Noise from grinders, loaders, and truck traffic can generate nuisance complaints. The PEIR should outline general operating practices — such as limiting noisy activities to certain hours or maintaining distance from nearby sensitive receptors. Standardized expectations would support consistent operational expectations and regulatory oversight.

Public Services

The PEIR should describe the types of public-service coordination commonly required for composting operations, including fire departments, stormwater programs and potentially code enforcement programs. This helps LEAs ensure applicants identify responsible agencies and required approvals.

Transportation

Truck traffic is a frequent community concern. The PEIR should include general guidance on routing, scheduling, and on-site traffic management to help minimize nuisance impacts. LEAs may receive traffic-related complaints and would benefit from statewide direction.

Tribal Cultural Resources

The PEIR should describe when coordination with Tribal governments may be needed and outline a basic notification process for unexpected discoveries. This helps LEAs identify when and what, other agencies that need to be engaged.

Utilities and Service Systems

Adequate water supply is crucial for compost moisture management and fire prevention. The PEIR should define minimum utility expectations so LEAs can confirm proposed operations have sufficient resources to operate safely.

Wildfire

San Diego County includes extensive high-fire-risk areas. The PEIR should identify foundational fire-prevention measures such as defensible space, pile size and spacing, emergency access, and onsite water availability. These measures are essential for safe operations in rural areas and for LEA inspection oversight.

The San Diego County LEA appreciates CalRecycle's efforts to develop a comprehensive statewide PEIR that supports consistent permitting, operational safety, and effective oversight of small and medium composting facilities. We look forward to continued coordination as the PEIR is developed. I can be reached at 619-204-0702 or via email catherine.dean@sdcounty.ca.gov.

Sincerely,



Catherine Dean
Supervising EHS
Solid Waste Local Enforcement Agency

cc. Joanne Lee, DEHQ
Colleen Hines, DEHQ

PUBLIC WORKS
VENTURA COUNTY

WATERSHED PROTECTION

WATERSHED PLANNING AND PERMITS DIVISION
800 South Victoria Avenue, Ventura, California 93009

M E M O R A N D U M

DATE: August 17, 2026

TO: Philip Hess, Case Planner
County of Ventura

FROM: Jack Schlenger, PWA-WP Case Reviewer

SUBJECT: RMA26-019
APN:083006132
CEQA Review Comments and Conditions

Pursuant to your request dated 7/23/2026, this office has reviewed the submitted materials and provides the following comments.

PROJECT LOCATION:

Location Map:



PROJECT DESCRIPTION:
CalRecycle is now proposing adoption of a statewide PEIR to assist in the process to approve, site, and develop small and medium compostable material handling facilities and operations throughout the State of California, as required by the Organic Waste Reduction Bill (SB 1046, Laird, Chapter 452, Statutes of 2024). SB 1046 requires CalRecycle to prepare a PEIR to provide a consistent approach and consider impacts associated with construction and operation of small and medium composting facilities and operations statewide. The PEIR is also intended to provide an opportunity that will allow for a more consistent approach to siting and permitting (consistent with Section 15168 of the State CEQA Guidelines). The PEIR may serve as the first-tier analysis for later, more detailed, site-specific environmental reviews as necessary. Lead agencies and responsible agencies such as local land use and planning agencies, local enforcement agencies, and CalRecycle may use the CEQA document in considering subsequent discretionary actions

APPLICATION COMPLETENESS:
Complete **-** from our area of concern.

ENVIRONMENTAL IMPACT ANALYSIS:
Item 31a. Flood Control Facilities/Watercourses – Ventura County Public Works Agency, Watershed Protection is deemed to be Less Than Significant.

The proposed project is situated about 0 feet from the Statewide, which is a WP jurisdictional redline channel. No new or modified direct stormwater drainage connections to this WP channel, activities within WP's easement, or activities over, under, or within the redline channel appear to be proposed or indicated on the applicant's submitted materials.

This proposed project would result in NO increase of impervious area within the subject property.

WP staff determines that the environmental impact is less than significant (LS) on redline channels under the jurisdiction of the Ventura County Public Works Agency - Watershed Protection.

WATERSHED PROTECTION COMMENTS:
None.

WATERSHED PROTECTION CONDITIONS:
None.

If you have any questions, please feel free to contact me by email at jack.schlenger@venturacounty.gov or by phone at 805-654-2005.

END OF TEXT.

From: Grunder, Nikolaus S
To: Permit Training & Assistance
Subject: Small and Medium Composting Facilities Program EIR – Humboldt County LEA Comments
Date: Friday, August 21, 2026 3:58:26 PM
Attachments: image001.png

Caution: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello CalRecycle Permitting and Assistance Branch,
The Humboldt County LEA appreciates the opportunity to provide comments on the scope of the Small and Medium Composting Facilities and Operations PEIR. Humboldt County has an ongoing need for additional local capacity to process food waste. We have experienced challenges trying to get this type of project started in our rural coastal area and are hopeful that the PEIR can help make the environmental review and permitting process more practical for future projects.
The LEA recommends that CalRecycle consider the following as the PEIR is developed:

- **Rural and coastal siting constraints:** The PEIR should consider the challenges of developing small and medium composting facilities in rural coastal counties. In Humboldt County, agricultural properties can be some of the more practical locations for small composting operations. However, much of our agricultural land is also within the Coastal Zone, which can add another layer of permitting and environmental review. These projects may already require coordination between the LEA, CalRecycle, local Planning Department, Regional Water Quality Control Board, and other agencies. We encourage CalRecycle to consider these challenges when evaluating land use and siting of composting facilities in rural and coastal areas.
- **Usefulness for future local projects:** We see one of the greatest benefits of the PEIR as providing a useful starting point for environmental review of future small and medium composting projects. We encourage CalRecycle to provide enough detail on common environmental impacts and mitigation measures that local jurisdictions can make use of the PEIR when reviewing individual projects. This could be especially helpful in rural counties where suitable locations and resources for developing organics infrastructure can be limited.
- **Coordination between regulatory agencies:** Small and medium composting projects can require review and approval from several state and local agencies. We encourage the PEIR to clearly identify the roles of these agencies and look for opportunities to better coordinate the environmental review and permitting process. Better coordination between CalRecycle, LEAs, local land use agencies, Regional Water Quality Control Boards, and other agencies could make the process easier to navigate while still providing the necessary environmental protections.

Thank you again for this opportunity.
Nik Grunder, REHS, M.S.

Senior Environmental Health Specialist
Solid Waste-LEA Program
Humboldt County DHHS-Division of Environmental Health
100 H Street - Suite 100 - Eureka, CA 95501
Environmental Health | Humboldt County, CA - Official Website

Phone - (707) 298-5620



COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
http://dpw.lacounty.gov

MARK PESTRELLA, Director

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

September 2, 2026

IN REPLY PLEASE
REFER TO FILE: LD-1

Mr. Jeffery Esquivel
Department of Resources Recycling and Recovery (CalRecycle)
Waste Permitting, Compliance, and Mitigation Division
1001 I Street, MS#10A
Sacramento, CA 95814

Dear Mr. Jeffery Esquivel:

ENVIRONMENTAL PLAN (RPPL2026002936)
SMALL AND MEDIUM COMPOSTING FACILITIES AND OPERATIONS PROGRAM
NOTICE OF PREPARATION OF A PROGRAM ENVIRONMENTAL IMPACT REPORT

As requested, Public Works has reviewed the Small and Medium Composting Facilities and Operations Program Notice of Preparation. The project proposes preparing a Program Environmental Impact Report, pursuant to the California Environmental Quality Act, for small and medium composing facilities and operations.

We offer the following comment for your consideration:

1. General Comments

1.1. Compliance with the National Flood Insurance Program and applicable local jurisdiction floodplain management codes must be considered when determining suitable locations.

For questions regarding comment 1.1, please contact Diana Ibarra of Public Works, Stormwater Engineering Division, at (626) 458-6132 or dibarra@pw.lacounty.gov.

1.2. Consider stormwater and water quality concerns related to compost materials, compost liquid runoff, sediment, nutrients, or other non-stormwater discharges in future environmental reviews.

1.3. There may be potential impacts to groundwater recharge areas and groundwater quality, including potential contamination.

1.4. Future site-specific projects may still need the Los Angeles County Flood Control District review, permits, or approvals if they affect District facilities, drainage connections, discharges, or property. The Program Environmental Impact Report should not prevent applicable Los Angeles County Flood Control District review or approvals for future site-specific projects.

For questions regarding comments 1.2-1.4, please contact Daniel Bradbury of Public Works, Stormwater Planning Division, at (626) 458-5988 or dbradbury@pw.lacounty.gov.

1.5. Best Management Practices should be effectively implemented during construction and on-going/future operations/maintenance activity corresponding to the expansion/development of composting facilities, that could affect the water quality of nearby/adjacent District drains, channels, rights-of-way, etc.

For questions regarding comment 1.5, please contact Timothy Marino of Public Works, Stormwater Quality Division, at (626) 300-3331 or tmarino@pw.lacounty.gov.

If you have any questions or require additional information, please contact Toan Duong of Public Works, Land Development Division, at (626) 458-4945 or tduong@pw.lacounty.gov.

Very truly yours,

MARK PESTRELLA, PE
Director of Public Works



JAMES CHON, PE
Principal Engineer
Land Development Division

DK:ec
P:\ldpub\SUBPCHECK\Plan Checking Files\Projects submitted by Other Agencies\RPPL2026002936 - Small and Medium Composting Facilities and Operations Program EIR\2026-08-19 Submittal\DPW_Cleared_2026-08-20_RPPL2026002936.docx

COUNTY OF ORANGE
OC Waste&Recycling
Our Community. Our Commitment.

Thomas D. Koutroulis, Director
601 N. Ross Street, 5th Floor
Santa Ana, CA 92701

www.oclandfills.com
Telephone: (714) 834-4000
Fax: (714) 834-4183

(Letter Sent Via Email)

September 1, 2026

Kylie Sanchez, OC Development Services/Planning
Kylie.Sanchez@pw.oc.gov

CC: Virginia.Gomez@pw.oc.gov

Subject: NCL-26-0008

Dear Kylie:

OC Waste & Recycling (OCWR) appreciates receiving your July 28, 2026 transmission of CalRecycle's Notice of Preparation (NOP) dated July 22, 2026 of the Program Environmental Impact Report (PEIR) for small and medium composting facilities and operations in California. This response letter clarifies OCWR's role as a Reviewing agency under CEQA, which underlies our statutory responsibilities in responding to the referenced NOP. Specifically, OCWR is being asked to provide comments and guidance on the scope of the Project's PEIR including any potentially significant environmental impacts and reasonable alternatives and mitigation measures that may be germane to OCWR and therefore recommended for evaluation in the PEIR, if applicable.

We recognize that OCWR would not be responsible for issuing any discretionary approvals or permits for future development of small and medium composting facilities and operations within Orange County and therefore would not have a Responsible agency role under CEQA.

Furthermore, we assume that future development of such facilities is not expected to occur at any of our active or closed landfill properties. As such, we assume that the proposed Project would not have any direct environmental impacts on our active or closed landfill properties, facilities and operations.

Nevertheless, we recognize that information related to landfill capacity in Orange County may be of interest to the PEIR preparer as part of the solid waste analysis in the Public Services section with respect to potential organic and solid waste disposal needs associated with future development of small and medium composting facilities within Orange County. Therefore, as a Reviewing Agency under CEQA, OCWR looks forward to responding to any such data requests from the PEIR preparer.

Sincerely,

Leila Barker
CEQA & Habitat Program Manager
OC Waste & Recycling
Email: Leila.barker@ocwr.ocgov.com

From: Esquivel, Jeffery@CalRecycle
To: "Lauren Spellman"
Cc: Perez, Martin@CalRecycle
Subject: RE: CalRecycle EIR

Hello –

Thanks for attending the meeting this evening and Im not sure why you unable to raise a hand or ask a question through the chat box. Thanks for reaching out with your question. I would like to confirm dairies were brought up in a previous scoping meeting and I would expect a discussion in the EIR on this topic. If you have further comments, please feel free to submit via email or letter.

Jeffery Esquivel
Training & Assistance Section
Permitting & Assistance Branch
Waste Permitting, Compliance, & Mitigation Division
Department of Resources Recycling and Recovery (CalRecycle)
1001 I Street, MS#10A
Sacramento, CA 95814
916.341.6337

From: Lauren Spellman
Sent: Thursday, August 6, 2026 6:31 PM
To: Esquivel, Jeffery@CalRecycle
Subject: CalRecycle EIR

Caution: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good evening, Jeffery,

I apologize for the late email, I was just in the Scoping #2 meeting on zoom but did not have access to the chat or have the raise hand function.

Will this EIR apply to dairies?

Thank you,

Lauren Spellman
Account Assistant

1225 8th Street, Suite 230
Sacramento, CA 95814
M: (559) 670-0860
lspellman@cogentcc.com

August 20, 2026

Electronically to: Permittrainingassistance@calrecycle.ca.gov

Jeffery Esquivel
Department of Resources Recycling and Recovery (CalRecycle)
Waste Permitting, Compliance, & Mitigation Division Permitting and Assistance Branch
1001 I Street, MS#10A
Sacramento, CA 95814

RE: Small and Medium Composting Facilities Program EIR

Dear Mr. Esquivel:

We appreciate being part of the Scoping Meetings held by CalRecycle on August 6, 2026, where we provided verbal comments that are presented in this letter. Please combine meetings in the future for both stakeholders and regulators as we work together every day on these issues and would welcome hearing each other's points of view.

We welcome the Program EIR for Small and Medum Composting Facilties. The Program EIR for Anaerobic Digestion (AD) Facilties in 2010 helped unlock the mysteries of AD where that that Program EIR was pertinent in launching the AD industry. The NOP alluded that the EIR for SB 1383 in 2019 was for a Program EIR for commercial covered aerated static pile (CASP) facilities, but it was not the Program EIR for CASP that could have been done at the time, although it had useful information for SB 1383 implementation.

We understand that for small composting facilities of under 5,000 cubic yards on site will need to align with SB 279 that was adopted by the Legislature in 2025. Our comments are exclusive to medium volume composting facilities that can store up to 12,500 cubic yards which would need to be permitted with an Enforcement Agency Notification (EAN) under CalRecycle regulatory authority. We have the following comments:

Feedstock Types – Include Biochar – Exclude Food Waste
Feedstock should be limited to agricultural and green materials which are allowed under the EAN application process. There is no allowance for food waste other than vegetative food material from agricultural operations.

We would recommend to include biochar as an additive to the feedstocks being analyzed. Up to 10% biochar additions can reduce VOCs to up to 33% and significantly reduce odors. Since air quality is the major concern for these types of facilities, biochar would be an important feedstock to add. Biochar is readily available for this type of use and has so many co-benefits that the Program EIR should evaluate facilities with and without biochar to provide the needed information for so many local air districts throughout California.

Tonnages – Design for Peak of 60,000 Tons Per Year with several business models
Medium volume composting facilities that can store up to 12,500 cubic yards where different business models can show a wide range of tonnage throughput. Air districts issue their permits based upon annual throughput and not cubic yards stored on-site. Plus, Project EIRs always design for peak tonnage and not average, where this Program EIR needs to evaluate the peak. Under the California Environmental Quality Act (CEQA), a Program EIR (PEIR) evaluates broad policy directions and cumulative impacts. It typically analyzes ***average daily conditions*** *f*or regional planning, but it must account for ***peak loads.***

Program EIRs require an alternatives analysis to just an average project condition. Under the California Environmental Quality Act (CEQA), a Program EIR must evaluate a reasonable range of alternatives to the project, or to the program as a whole, that could feasibly attain most of the basic objectives while reducing environmental impacts.

The NOP uses an average of 25,000 TPY for the throughout of a medium volume compost facility, which can be viewed as an industry average. Different business models do yield higher annual throughputs, which should also be evaluated as peak conditions as part of the Program EIR description. At a minimum, peak business models should be evaluated with alternative analysis to reflect the reality of case studies today, and not just an industry average.

1. EAN Notification Tier Facility – 25,000 TPY average

   Many facilities operating windrow composting with 4 cycles per year and need to store compost on-site for seasonal markets has averaged 25,000 TPY and should be evaluated as suggested.

2. Chip and Grinding Facilties with Composting – 60,000 TPY peak

   Chip and Grind facilities can apply for an EAN for up to 200 TPD and compost on-site up to 12,500 CYD. The inbound material of 200 TPD could translate to 60,000 TPY where the facility as a whole should be evaluated. The amount of material going to composting may

vary, but the emissions from a 200 TPD green material operation for storage and processing are a common business model and should be evaluated.

3. Pre-processing Off-site and Limited on-Site Storage Compost Facilties – 60,000 TPY peak

Composting on ranches and using compost on the rangelands is another business model that can process up to 60,000 TPY. In-bound material is already pre-processed at a Solid Waste Facility Permit to remove contamination and any food waste, where the clean green material is feedstock ready and is delivered directly into windrows. Compost operators have produced Title 14-compliant compost in 28-day cycles. When the Title-14 compliant compost is finished, the compost is moved and staged at various parts of the ranch to be cured prior to spreading over prescribed grazing lands throughout the year with rotation grazing that leads to year round markets. This is now a common business model and should be evaluated.

To legally distribute, sell, or land-apply a product as finished or stabilized compost in California without restriction, the material must pass three strict testing thresholds under Title 14. Curing is not an absolute regulatory prerequisite under Title 14 for a product to be classified as "finished" or "stabilized" compost, provided the material has fully met the state's strict analytical performance standards. While Title 14 defines curing as the final stage of composting where readily metabolized material decomposes and stabilizes, the law regulates the final product based on biological and physical endpoints rather than a mandatory timeline or explicit curing phase, thus the curing occurs away from the compost facility EAN boundary but occurs adjacent to the prescribed grazing paddocks.

4. CASP Compost Facility – 60,000 TPY peak

Local air districts, such as the SJVAPCD, may require CASP composting as a new source which requires Best Available Control Technology (BACT), with CASP being the approved BACT technology. This would be a viable option that has been explored but not implemented due to the high costs of emission reduction credits (ERCs). Should ERCs not be required, there could be several EAN CASP facilities being developed in certain air districts with stricter air quality regulations and should be evaluated.

Baseline Conditions Comparing Landfilling to Composting

The Program EIR should evaluate baseline conditions of landfilling the organic waste per each business model. The analysis should review criteria pollutants, methane emissions, and loss of nutrients. The Program EIR should also evaluate program conditions of composting the organic waste per business models above compared to landfilling for criteria pollutants, methane emissions and loss of nutrients. This analysis will provide the net benefits of composting organic waste compared to landfilling.

With the information above, the Program EIR should explain how composting is viewed as a 'new source' when the net benefit over landfilling is evident, and what could occur to no longer classify these facilities as a 'new source', where the inherent net benefits are ignored.

Essential Public Service (EPS) and Emission Reduction Credits (ERCs)

Composting facilities are increasingly considered as essential public services. Much like traditional wastewater treatment and solid waste management, organic waste processing is critical for protecting public health, meeting state environmental mandates, and maintaining municipal infrastructure. The South Coast Air Quality Management District (SCAQMD) is expanding its definition of an Essential Public Service under Rule 1302 to include qualifying composting operations. This change helps facilities comply with California's organic waste mandates under SB 1383 by granting access to ERC from their Priority Reserve. This Program EIR should evaluate compost facilities as being essential public service to fulfill the SB 1383 mandate by granting access to ERC banks, where available.

As part of the air permitting process, whether through a compost-specific rule or through an air district's New Source Review, an air district determines the facility potential to emit (PTE). The PTE is then used to determine if the proposed activity exceeds the air district's threshold to require a Health Risk Assessment (HRA), use of a Best Available Control Technology (BACT) or obtain Emission Reduction Credits (ERCs) or offsets.

California state law requires air districts to adopt ERC banking programs. Air districts are responsible for tracking the price paid (in dollars per ton), the pollutant traded, the amount traded, and the year of the transaction. Districts are required to provide this information to CARB annually, and CARB compiles the information from all air districts to assemble a statewide report. The purchase of ERCs may be a significant investment for a proposed composting activity, hence the use of a BACT system such as an ASP composting system may reduce the ERCs required by the air district.

Kern County Public Works paid $7.2 million for ERCs in the SJVAPCD and was fortunate to receive a $10 million CalRecycle grant to off-set those ERC costs. An EAN green waste facility being proposed in San Joaquin County was stalled out after ERC cost of $3 million was required. New facilities in the SJVAPCD being permitted are facing the ERCs requirements. Without grant funding in the future, new composting facilities in the SJVAPCD will not go forth. The Program EIR should evaluate the impacts of ERCs on permitting composting facilities while the baseline conditions of landfilling to composting shows such a significant net benefit.

Alternative Analysis and Market Off-Take Options

Program EIRs require an alternatives analysis. Under the California Environmental Quality Act (CEQA), a Program EIR must evaluate a reasonable range of alternatives to the project, or to the program as a whole, that could feasibly attain most of the basic objectives while reducing environmental impacts. The following analysis should be included in this Program EIR.

1. Anaerobic digestion (AD) of green waste is a viable alternative. There have been numerous claims comparing AD to composting which should be evaluated.
2. The landfilling of green waste is a legal alternative and should be evaluated as a baseline condition, as mentioned already in this letter.
3. Title 27 allows processed green waste to be used as Alternative Daily Cover (ADC) at landfills and it is still a common practice. The Program EIR should evaluate this alternative and its environmental impacts.
4. The illegal dumping of unprocessed green waste is an alternative now being regulated by CalRecycle. While this alternative is illegal, it still occurs and has been a common practice due to lack of enforcement. The industry is highly supportive of the recently adopted CalRecycle land application regulations but this practice should be evaluated as it continues, and the environmental impacts of that activity should be included.

The preferred Off-Take program is using compost on productive agricultural lands and the natural and working lands of California at a proper agronomic rate, where the carbon sequestering potential and co-benefits should be fully evaluated. A discussion of developing carbon offsets with high integrity, nature-based, voluntary carbon credits should be evaluated.

There is an alternative occurring today where landfills use compost as ADC that should be evaluated:

1. Title 27 allows compost products to be used as ADC and is still a common practice. The Program EIR should evaluate this alternative off-take market to analyze the loss of soil carbon sequestering and nutrients.

Edgar & Associates has permitted dozens of these EAN facilities throughout the state and bring over 30 years of experience when commenting on this Program EIR. Our comments reflect the operational and business realties of the compost industry. We had hoped that CalRecycle would have held a stakeholder workshop on these issues before releasing the RFP for Program EIRs services to develop the Scope of Work. Being locked into to a current contract and not evaluating the options and alternatives presented in this letter would be a missed opportunity and not follow the legislative intent of SB 1046 (Laird, 2024).

The legislative intent of this Program EIR is to streamline the permitting process for small and medium compostable material handling facilities or operations in the state that accept agricultural, food, and green materials. The Program EIR shall streamline the process with which jurisdictions can develop and site those facilities or operations to ensure organic material in the state is processed to its highest and best use, and our comments reflect the state of the industry that need to be considered to fulfill the legislative intent of SB 1046 (Laird, 2024).

Please contact me with any questions at (916) 444-5345.



Evan W.R. Edgar
Engineer

August 21, 2026

Department of Resources Recycling and Recovery (CalRecycle)
Waste Permitting, Compliance, & Mitigation Division
Permitting and Assistance Branch
Attn: Jeffery Esquivel
1001 I Street, MS#10A
Sacramento, CA 95814

Submitted electronically to: Permittrainingassistance@calrecycle.ca.gov

RE: Comments on the Notice of Small and Medium Composting Facilities Program EIR

Dear Jeffery Esquivel and the CalRecycle Permitting and Assistance Team:

Thank you for the opportunity to submit written comments on the scope and content of the Program Environmental Impact Report (PEIR) that CalRecycle is preparing pursuant to the California Environmental Quality Act (CEQA) for small and medium compostable materials handling operations and facilities under SB 1046. Fibershed appreciates CalRecycle's efforts to expand and streamline California's composting infrastructure in support of the organic waste diversion goals established under SB 1383, and we submit these comments to ensure that the scope of the PEIR fully accounts for natural fiber textiles as a compostable organic material stream.

Fibershed is a California nonprofit organization with a Producer Program membership of over 200 fiber farmers, ranchers, processors, and manufacturers across California working to strengthen regional textile economies that improve ecosystem and community health. Fibershed is cultivating model systems in which non-toxic, biodegradable natural fiber products can safely return to our ecosystems and farmlands after a long and useful life. As part of this work, Fibershed operates a natural fiber post-industrial waste compost demonstration site at the Fibershed Learning Center, where we are actively researching and demonstrating the composting of natural fiber textile waste streams — an operation directly relevant to the facility types and material streams this PEIR is intended to evaluate.

The Fibershed Learning Center is located in Point Reyes Station, California. It includes a full demonstration of soil-to-soil textile systems including textile composting of post industrial factory floor ‘waste’ from a California based brand known as Harvest and Mill. The company diverts waste from landfill to our composting demonstration site. Approximately 30% of the carbon in the compost is derived from textile scraps from undyed, 100% cotton material. The compost is used annually for increasing nutrient availability in our natural dye row crop farm.

Fibershed also represents natural fiber producers and advocates in California's textile policy landscape, including in an ex-officio capacity on the governing board of the Producer Responsibility Organization (PRO) established under SB 707, the Responsible Textile Recovery

Act. This dual vantage point, as both a composting practitioner and a participant in California's textile extended producer responsibility (EPR) program, is the basis for the comments below.

1. **Natural Fiber Textiles Are Already Defined as Organic Waste Under SB 1383 But Facilities Are Not Yet Equipped to Accept Them**

Natural fiber textiles — including wool, cotton, hemp, flax, and other plant- and animal-based fibers processed without persistent synthetic finishes — are compostable organic material.[1] [2] [3] SB 1383's implementing regulations recognize textiles as compostable in Title 14 Section 18982(a)(46), where the definition of "organic waste" explicitly includes "organic textiles and carpets" alongside food waste, green material, and other feedstocks.

CalRecycle's own SB 1383 FAQ website guidance confirms that a gap already exists in practice. Textiles and carpets are permitted in the blue and gray containers under specified conditions (Sections 18984.1 and 18984.2), and CalRecycle has separately allowed textiles to be placed in the green (organics) container as well — not because processing facilities are equipped to accept them, but because stakeholders requested this flexibility during informal rulemaking workshops, and CalRecycle stated it was "not aware of any compelling reason to prohibit" it. In that same guidance, CalRecycle acknowledges that "textiles and carpets are not normally accepted by organic waste recycling facilities, such as composting or in-vessel facilities, that usually accept materials collected in green containers." In other words, current regulation permits textiles to enter the organics collection stream with no corresponding requirement, standard, or infrastructure ensuring they can actually be composted once they arrive.

Fibershed submits that there are, in fact, several compelling reasons not to allow undifferentiated textiles into the green container, and we urge CalRecycle to evaluate them as part of this PEIR's environmental analysis:

- **Contamination of finished compost.** Synthetic fibers and synthetic-natural blends do not break down under typical composting timeframes and conditions and instead persist as visible plastic contamination in finished compost, risking failure of California's compost contamination and quality standards.
- **Microplastic and microfiber shedding.** Processing (shredding, turning) of synthetic and blended textiles releases microfibers that cannot be fully filtered from finished compost, creating a direct pathway for microplastic contamination of the farmland and soils where that compost is later applied.
- **Chemical contamination.** Dyes, flame retardants, and synthetic finishes (including PFAS-based treatments) on non-compostable or improperly screened textiles can leach

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[1] Li, L., Frey, M.W., & Browning, K.J. (2010). Biodegradability study on cotton and polyester fabrics. *Journal of Engineered Fibers and Fabrics*, 5. https://doi.org/10.1177/155892501000500406

[2] Alwala, W., Perju, A., Schwarz, M., Bonhotal, J., Pires, S., Ankeny, M., Daystar, J., and Frey, M. (2024). The compostability of denim fabrics dyed with various indigos. *BioResources,* 19(2), 2685-2700. https://doi.org/10.15376/biores.19.2.2685-2700

[3] Fibershed, "Closing the Loop: Can Compostable Textiles Help Lead Us Into the Future?" (July 3, 2024), https://fibershed.org/2024/07/03/closing-the-loop-can-compostable-textiles-help-lead-us-into-the-future/

into compost and subsequently into soil, water, and food systems when that compost is applied to agricultural land.

- **Physical contamination and equipment risk.** Non-fiber components common even on natural fiber garments — zippers, buttons, elastic, synthetic thread — create physical contamination in finished compost and can damage or jam grinding, screening, and turning equipment not designed to process woven textile material, creating operational and worker-safety hazards.
- **Risk to compost markets and to SB 1383's own diversion goals.** If unscreened textiles degrade the quality of finished compost, facilities may reject or divert contaminated loads to landfill, working directly against the disposal-reduction goals SB 1383 itself was enacted to achieve.

These reasons are precisely why acceptance criteria are necessary rather than optional (see Section 3 below). We do not support banning textiles from the green container outright, as we agree with CalRecycle that organic natural fiber textiles belong in the organics stream. However we do support requiring acceptance criteria, so that only qualifying, appropriately screened natural fiber textiles are accepted, rather than any textile material regardless of composition. Closing that gap between what current regulation allows into the green container and what facilities can actually process safely is the unresolved problem this PEIR has the opportunity to address.

2. This PEIR Should Be Explicitly Scoped in Coordination with SB 707 Implementation

CalRecycle is simultaneously developing regulations and overseeing implementation of SB 707, the country's first textile producer responsibility program. Pursuant to 42984.6(b)(2)(I), SB 707 explicitly requires the PRO's Needs Assessment to evaluate actions and investments needed to support composting access and infrastructure, and requires the PRO's Producer Responsibility Plan to address compostability as a design challenge for covered products (42984.10(n)). These provisions can only be meaningful in practice if the physical composting infrastructure needed to receive natural fiber textiles at end-of-life actually exists, is permitted, and is sited appropriately across the state.

If this PEIR is scoped without regard to SB 707, California risks a sequencing failure: the PRO's Needs Assessment and Plan will be required to identify composting as an end-of-life pathway for natural fiber textiles, while the underlying facility-siting and environmental review framework governing that infrastructure, the subject of this PEIR, will have been developed without ever having considered textiles as a material stream. We request that CalRecycle coordinate the scoping of this PEIR with its SB 707 program staff to ensure the two regulatory efforts are aligned rather than developed in silos.

3. Requested Scope Items

We respectfully request that the PEIR's scope of analysis include the following:

- Evaluation of natural fiber textiles (pre-consumer/post-industrial and post-consumer) as a distinct organic material stream within the environmental setting and material characterization sections of the PEIR, including expected feedstock volumes and decomposition timeframes relative to other feedstocks already contemplated by the PEIR.
- Development of clear feedstock acceptance criteria distinguishing genuinely compostable organic natural fiber textiles from non-compostable or contaminating textile waste, since not all textiles are compostable. These criteria should address: fiber composition (e.g., minimum percentage natural fiber content and exclusion of synthetic blends); dyes and finishes (exclusion of PFAS and other persistent synthetic treatments); and non-fiber components (trims, hardware, elastic, and other attachments that must be removed prior to composting). We encourage CalRecycle to reference or adapt existing compostability standards in developing this screening framework, so that facilities have a clear, consistent basis for determining which textile materials they can accept without compromising compost quality or facility performance standards.
- Consideration of small-scale and pilot/demonstration composting operations as a facility type and operational model within the range of alternatives and facility types the PEIR analyzes. Small to medium sized composting sites, including demonstration sites like Fibershed's Learning Center, are where much of the practical knowledge about textile compostability, processing requirements, and environmental performance is currently being generated, and we believe this experience should directly inform the PEIR's analysis.

We urge CalRecycle to treat this PEIR as an opportunity to proactively plan for this need now, rather than retrofitting the regulatory framework later.

Fibershed appreciates CalRecycle's work to expand small and medium composting infrastructure in California and welcomes the opportunity to serve as a resource on natural fiber textile compostability, drawing on our direct operational experience at the Fibershed Learning Center. We would welcome the opportunity to discuss these comments further and please do not hesitate to contact us with any questions.

Thank you for your consideration.

Sincerely,



Alexandra Farah, Advocacy Manager
Fibershed

From: Wendy Ring
To: Permit Training & Assistance
Subject: Small and medium composting facilities EIR Comment
Date: Monday, August 3, 2026 8:12:07 PM
Attachments: State ag compost reg examples .docx

Caution: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

REMOVE BARRIERS FOR FARMERS TO COMPOST FOOD SCRAPS
None of the cities in our county who are supposed to comply with SB 1383 are doing so because we have no composting facility. Our jurisdictions don't want to run one and no local business people ae interested. We have many local farmers and dairies who are willing and have the capacity to incorporate community food scraps into their composting, but CalRecycle will not allow this at a scale worth their time and money without complex and expensive permitting.

These farmers also need compost, and the state needs farmers to apply compost to meet our natural lands climate action goals, but importing it from facilities several counties away is too expensive. Many local farmers I've talked to want to be good stewards of their soil and don't trust the quality of compost from industrial facilities. They would have more trust in compost they made themselves and would be more likely to apply compost they were paid to make instead of compost they had to pay for. Residents would also likely be more careful about contamination when their organics are going to local farms. CalRecycle should eliminate the road blocks so that farmers can serve their communities by composting all their organics.

CalRecycle should look at states which allow small and agricultural composters to compost food scraps and assess whether this has adverse environmental impacts. If not, then CA should extend the same status that it allows for agricultural composters composting "vegetative" organic material to farmers and small composters who compost food scraps as well. I have attached a list of states which have waiver and registration only provisions for on farm composting which includes food scraps, including their limits and conditions.

Another thing to evaluate is whether training and support can reduce environmental impacts is needed to foster small scale composting and who should provide oversight for on-farm operations. Some states do this through their agriculture departments rather than solid waste agencies.

Thanks for the opportunity to comment,

Wendy Ring

Many of the states with exemptions or registration/notification categories for agricultural composting have limits based on cubic yards of off farm feedstock received, instead of total cubic yards onsite.

3 Examples of state language using off farm feedstock limits:

Rhode Island

A composting operation, when located on an agricultural unit, which, in addition to agricultural by-products, **utilizes one or more of the following materials, must be registered.... and follow commonly accepted best management practices.** Note: See § 3.5(E) of this Part for additional clarification and requirements.
1. Leaf and yard waste generated off the agricultural unit
2. Wood wastes, including brush, stumps, lumber ends and trimmings, wood pallets, bark, wood chips, shavings, slash and other clean wood, provided that it is not mixed with other solid wastes, for processing. Wood containing or likely to contain asbestos, glues, or chemical preservatives such as creosote, pentachlorophenol, paints, stains or other coatings shall not be considered wood wastes under these Rules and Regulations and is prohibited from being processed;
3. Clean paper, newspaper or cardboard;
4. Clean shells and bones;
5. Non-agricultural sources of manures and animal bedding materials such as zoo waste;
6. **Not more than ten tons per day of compostable material composed of generator pre-sorted produce, and/or generator pre-sorted vegetative residues from food or beverage processing** that consists solely of materials from plants, (e.g., husks, leaves, skins, sediments and roots) and other plant by-products from fruit or vegetable canning, freezing or preserving operations;
7. **Not more than one ton per day of pre-sorted kitchen, restaurant and source separated institutional or municipal food by-products;** and/or, 8. Not more than one half ton per day of unprocessed meat and fish wastes.

https://risos-apa-production-public.s3.amazonaws.com/DEM/REG_9932_20180806195253.pdf

The Iowa Administrative Code's Chapter 567, Environmental Protection Commission, Subchapter 105.5(1), "Organic Materials Composting Facilities"
Yard waste and food residuals may be received from off premises at a total rate of two tons or less per week for composting with agricultural waste. Any clean wood waste may be used as a bulking agent. The two tons per week combined weight limit does not apply to bulking agent.

New York 6 CRR-NY 361-3.2

Registration only category for small facilitis or ag operations
(2) **A composting facility that accepts no more than 5,000 cubic yards or 2,500 wet tons, whichever is less, of SSO per year,** provided that no more than 800 cubic yards are accepted in any month.
https://govt.westlaw.com/nycrr/Document/Id4d62f22dfe911e7aa6b9b71698a280b?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default)

I only found one state with onsite volume limits that didn't count stored finished compost. Iowa (above) excludes wood chips commonly used as a bulking agent. I couldn't find any that excluded curing compost.

Wisconsin

LIMITED EXEMPTION FOR FARM CROP RESIDUE OR MANURE COMPOSTING FACILITIES. Facilities for on site composting of farm crop residue or manure, except deer or elk manure, directly from agricultural operations are exempt from the requirements of s. NR 502.04 (2) to (6), locational criteria, plan of operation submittal, licensing and all other requirements of this chapter, provided all of the following requirements are met:

(a) The performance standards in s. NR 502.04 (1).

(b) The facility is operated in a nuisance-free and environmentally sound manner.

(c) All the farm crop residue and manure composted are generated from agricultural operations either under common ownership, common management or located adjacent to each other, and the composting occurs on the property of one of these agricultural operations.

(d) The compost is utilized for agricultural landspreading, at the same farm or at another farm, in accordance with s. NR 518.04 (1) (b) or (i).

(e) Source-separated compostable material other than farm crop residue and manure may be accepted from off site for use in the composting process if the following requirements are met:

1. The locational criteria in sub. (8), unless the offsite material consists exclusively of yard material, clean chipped wood, or both.

2. The minimum operational and design standards in subs. (10) and (11).

3. The recordkeeping requirements of sub. (15) (a) 3. and the discharge inspection requirements in sub. (15) (a) 4.

4. The combined volume of farm crop residue, farm animal manure, and source-separated compostable material on site at one time may not exceed 10,000 cubic yards, including collected raw materials and compost being processed but excluding finished compost. The volume of food residual inputs to the composting process may not exceed 25 percent of the total combined volume of raw material inputs

"Finished compost" means compost that has been processed sufficiently to meet the maturity and stability criteria in Table 2 of s. NR 502.12, and that is ready and suitable for sale, distribution or use.

LIMITED EXEMPTION FOR SOURCE-SEPARATED COMPOSTABLE MATERIAL COMPOSTING FACILITIES OF 5,000 CUBIC YARDS OR LESS. F**acilities for composting source-separated compostable material that exceed 50 cubic yards but do not exceed 5,000 cubic yards at one time, including raw materials and compost being processed, but excluding finished compost,** are exempt from the requirements in s. NR 502.04 (3) (c), (4), and (5) and subs. (12) and (14), and the monitoring requirements of sub. (15) (a) 1. and 2., provided all of the following requirements are met:

With regard to replacing the permitting requirement in SB 279 with a requirement that CalRecycle add a streamlined category for agricultural composting to the 2027 report on streamlining small and medium facility permitting, which it is already mandated to produce:

Maine took a 2 step approach.
https://www.mainelegislature.org/ros/LOM/lom123rd/RESOLVE139.asp

Chapter 139

S.P. 176 - L.D. 564

Resolve, To Streamline the Regulation of Agricultural Composters

Preamble. Whereas, the Legislature recognizes the benefits of agricultural composting operations to the environment, farms and rural economies; and

Whereas, the Department of Agriculture, Food and Rural Resources and the Department of Environmental Protection share an interest in encouraging the development of geographically dispersed agricultural composting operations; now, therefore, be it

Sec. 1. Department of Environmental Protection directed to revise rules. Resolved: That the Commissioner of Environmental Protection shall revise the Department of Environment Protection's rules pertaining to the licensing of solid waste processing facilities to clearly differentiate licensing requirements for agricultural composting operations from requirements for operations that compost municipal sludge, septage, industrial sludge or other materials with a higher risk of contamination. For the purposes of this resolve, "agricultural composting operation" means composting that takes place on a farm and uses only animal manure, animal carcasses and offal, fish waste, leaves, wood chips, animal bedding and other vegetative waste, produce and other vegetable and food waste. The Commissioner of Environmental Protection, in consultation with the Commissioner of Agriculture, Food and Rural Resources, shall review and revise the tiers that determine volumes of materials that may be composted at an agricultural composting operation without triggering the requirement for a waste facilities license from the Department of Environmental Protection; and be it further

Sec. 2. Department of Agriculture, Food and Rural Resources to establish components of a compost management plan. Resolved: That the Commissioner of Agriculture, Food and Rural Resources, working with the Department of Environmental Protection, shall develop necessary components of a compost management plan for agricultural composting operations. The purpose of a plan is to demonstrate that the facility is designed to prevent the discharge of pollutants, control leachates, minimize odors and the dispersion of disease vectors and ensure a stable, high-quality end product. A compost management plan must be specific to the proposed compost site and the farm's available land base for the operation. The 2 departments shall provide technical assistance in the development of a compost management plan to persons proposing to establish or expand an agricultural composting operation; and be it further

Sec. 3. Commissioners to report to the Joint Standing Committee on Agriculture, Conservation and Forestry and the Joint Standing Committee on Natural Resources. Resolved: That, no later than December 3, 2007, the Commissioner of Agriculture, Food and Rural Resources and the

Commissioner of Environmental Protection shall report to the Joint Standing Committee on Agriculture, Conservation and Forestry and the Joint Standing Committee on Natural Resources on the status of the rules revision required under section 1, and a description of elements to be included in a compost management plan for agricultural composting operations under section 2. The commissioners shall report on any other activities initiated or materials produced to provide guidance to farmers considering developing or expanding an agricultural composting operation. The commissioners shall articulate in their report agreement on jurisdictional boundaries relating to oversight of agricultural composting operations, unresolved issues and recommendations to further the goal of encouraging appropriate siting, design and operation of agricultural composting operations; and be it further

Sec. 4. Authority to submit legislation. Resolved: That the Joint Standing Committee on Agriculture, Conservation and Forestry may submit legislation pertaining to the regulation of agricultural composting operations to the Second Regular Session of the 123rd Legislature.

Result: a subsequent bill exempted ag composting from solid waste permitting and put it under dept of agriculture.

Date:	August 17, 2026	Project Number:	1235.03.55
To:	Jeffery Esquivel, CalRecycle		
From:	Chris Mundhenk and Cody Boazman		
Subject:	Statewide Small-Medium Composting Facilities and Operations EIR Scoping Meeting #1 Transcript		

The following presents a transcript of the first of two scoping meetings conducted for the Small and Medium Composting Facilities and Operations EIR. The meetings were held virtually on Zoom. In attendance on behalf of the project team were Jeffery Esquivel (California Department of Resources Recovery and Recycling [CalRecycle]), Martin Perez (CalRecycle), Lea Gibson (CalRecycle), and Chris Mundhenk (NCE). The transcript was conducted by Zoom and then proofed by Cody Boazman of NCE.

The transcript includes both the presentation by Chris Mundhenk (NCE) and CalRecycle staff with public comments received following the presentation.

Presentation

Chris Mundhenk: Good afternoon, everyone. I see some folks are still trickling in.

Welcome to the first of two scoping meetings for small and medium composting Facilities and Operations Program, EIR. We'll get started in just a minute. I believe we had just over 30 folks register for this, so we'll wait for a few more to join in. Okay, great. Well, seeing that we've got about 19 folks in the room, we'll go ahead and get started.

As I mentioned, welcome to the first of two scoping meetings, both being hosted today, for the small and medium composting Facilities and Operations Program EIR. This first scoping meeting is intended for agency representatives to come in. We will also have a secondary scoping meeting at 6 o'clock that is intended for more members of the public and other interested parties.

As part of the second scoping meeting, we will actually be providing interpretation services. We don't have that feature turned on for this meeting, but we will be able to provide a transcript of this if you do want one following the meeting. In addition, here is a bit of legalese and disclaimer about the information that we are presenting here.

Again, this is a scoping meeting. Certain things may get refined as we move into the EIR itself. But with that, we are going to go through several items today. First, we'll go a little bit through introductions. I'll let you know who I am. We also have some CalRecycle folks on the call who'll introduce themselves. We'll also provide an overview of the law that is actually requiring this EIR to be prepared, as well as the purpose that it is intended to achieve.

A little bit about the CEQA process and schedule for this project, and additionally, some information about how to provide comments, and then we will actually open it up for any verbal comments that you may have.

I did want to note, since we just did mention public comments, we will have a couple of different ways within this meeting that you can provide comments.

We will be allowing folks to provide verbal comments at the end of the meeting, so if you would like to provide a verbal comment, you can even raise your hand right now. When we get to that part of the meeting, we will go through, kind of in sequential order and unmute those folks so that they can provide those comments. If you prefer to just write your comments in as part of this meeting, you can use the chat box to provide that.

Please do make sure that you don't respond to anyone else's comment. We would like individuals to have their comments stand as they are. You can voice an agreement to it, but please do not argue with other commenters, not that you would, but just let their comments be, and you can provide your own. And with that, I am gonna let CalRecycle staff who are in the room introduce themselves. Martin, would you like to go first?

Martin Perez: Sure, thanks, Chris. Martin Perez, I'm the Manager of the Training and Assistance Section.

Jeffery Esquivel: Hi everybody, my name is Jeffery Esquivel, I'm Senior Environmental Scientist and the project lead on this. I'll Go ahead and pass it back to you, Chris.

Chris Mundhenk: Okay, and lastly, my name is Chris Mundhenk. I'm a CEQA practitioner, been doing a lot of EIRs, including a lot on composting facilities. So we will be assisting CalRecycle with preparation of the EIR, including this very interesting schedule that this EIR is on, and we'll get into that in just a little bit.

So again, the meeting purpose, we are intending to provide an overview of the project as it currently stands, and what we will be evaluating under CEQA, also outlining a little bit about the CEQA process. And then the most important part of this meeting is actually to solicit comments from you as representatives of public agencies.

And then also later, from interested members of the public regarding what should be in the EIR, what we should be evaluating, that includes your experience, your understanding, and your knowledge of these types of physical environmental impacts.

So with that, a little bit about why we're actually preparing this EIR. So as many of you know, in 2016, SB 1383 was passed, and set certain statewide organic waste reduction goals. There was an EIR that was prepared alongside that legislation in, I believe it was 2019. That EIR actually was completed. That EIR actually addressed large composting facilities, not so much the smaller ones that we're intending, but as CalRecycle has gone through and been tracking progress towards achieving the organic waste reduction goals for the state, there has been a need identified for additional, and potentially smaller and medium composting facilities, statewide, especially within some rural and sub… suburban areas of the state.

So then, what followed that was a study was conducted in early 2024 called the Small and Medium Composting Facilities Permitting Study, that is available on CalRecycle's website. And it identified that small and medium composting facilities have been approached in a variety of different ways in terms of the CEQA document that they do use, some using Notice of Exemption, some using NEGDEX, a lot of it depending on the local agency's determination as to what document they feel is appropriate and that sometimes that could cause some issues later on with permitting, including with CalRecycle. As well as some regulatory agencies. So then, SB 1046 was passed, and it's a very brief piece of legislation if you viewed it. That basically states that CalRecycle, by the end of 2026, is required to prepare an EIR that will provide a streamlining and consistent tool for the development and operation of small and medium composting facilities and operations.

The law did actually define what it considers to be a small composting facility and a medium composting facility. It's basically the first bullet of each of these, basically that a small composting facility is a facility that has up to 5,000 cubic yards of material within it at any one time, whereas a medium composting facility can be between 5,000 and 12,500 cubic yards of material at one time. I know that within the NOP, it did list tonnage throughput

for small and medium facilities, this comparison, or this relation to the cubic yards of material at one time, was based on a lot of professional experience, as well as what was in the permitting study that was done in 2024, although I will note that the law really only stated the cubic yards of material at one time that would be provided in-site.

I did want to note, and this is kind of going into what will be the reasonably foreseeable condition that we're going to be evaluating in the EIR for the number of these facilities that could be developed statewide. Since 2021, there have been 10 small and 18 medium facilities permitted by CalRecycle. I will note that within the different regulatory tiers that CalRecycle has, most of them do fall within the notification tier, whereas a few of them do fall within the registration tier.

Okay, in terms of CEQA, on its face, CEQA is intended to be an objective conservation piece of legislation that it requires public agencies like CalRecycle to evaluate potential physical environmental impacts of a project where they have discretion or where they're required by law, such as SB 1046. CEQA is intended to inform decision makers, also, potentially to help, responsible agencies, to make their own determinations about those potential physical environmental impacts, as it relates to their decisions, also to involve the public in the decision-making and planning process. And also, when we're talking about what actually goes into the analysis of the EIRs, or the environmental documents to identify and incorporate feasible means of reducing impacts, either through the incorporation of mitigation measures, project design, or project alternatives.

So where we are, the notes preparation was actually issued on July 22nd, for public review. That public review period will actually end on August 21st, 2026. It will be followed very shortly, by issuance of the draft EIR. As I mentioned, the law actually says that we have to be done with this EIR in 2026. So you will see the draft EIR hitting the streets in October of this year, and then followed shortly by the final EIR and NOD in December. This is a fairly tight timeline, but I did want to make note that any comments that we do receive as part of the scoping meeting and the scoping meeting later today, we will be reflecting those as appropriate in the analysis of the draft EIR.

The EIR, in terms of what we're going to be covering, is going to be largely full scope. We're going to be looking at the majority of issue areas identified in Appendix G of the CEQA checklist. There are a couple that we are not anticipating needing to get into a lot of detail, those being population and housing, as well as recreation. We will discuss and present evidence as to why these are not necessary to be evaluated, within the Intro to the Analysis chapter of the EIR. But for these other issue areas, and I won't list them all out, we are going to be going into, kind of an individual section analysis for each, using the Appendix G questions in the back of the CEQA guidelines. We will also be presenting, as required for EIRs, a cumulative impacts analysis, as well as an evaluation of alternatives for any significant impacts. Within the context of other CEQA considerations, there will be a chapter that also addresses growth-inducing impacts, and significant irreversible environmental changes.

And with that, I did want to note how folks can provide comment. You can either mail comments directly to Jeffery at 1001 I Street, or we are accepting comments verbally to permit trainingassistance@calrecycle.ca.gov.

To ensure that we do get an accurate record of all the comments, please do use either one of these methods. I know that we all have individual emails, but this will help us make sure that we have an accurate record of the entire, comments that have been received.

So with that, and I'm not seeing any raised hands in chat, if you would like to provide a verbal comment, or some input on what should be, evaluated in the EIR, please feel free to raise your hands at this time, or you can, again, use the chat box if you so desire.

And with that, I'll give folks who may want to provide comment a bit to do so. Okay. If there are no comments, I will thank you for participating. But I will hang on for a little bit to see if there are any comments that strike people, including if you would like me to go back into any of the slides in this presentation, I'm more than happy to do so.

Public Comments

Chris Mundhenk: I did see one comment pop up in the chat. Jeffery, did you want to… Read that one.

Jeffery Esquivel: Yes, so it looks like we have a question from Clark Williams. How will this project impact dairies, and how do you anticipate the project impacting dairies?

Chris Mundhenk: And it looks like we also have a second comment that's very, very similar to that.

Jeffery Esquivel: Yes, the other comment here, do you have an idea if, how, this will affect agricultural lands or dairies?

Chris Mundhenk: Sure, and what I will note, and I did not mention this in a prior slide, this is a statewide EIR, so we're not providing specific sites within which these can occur. It is possible that facilities may be located near or within properties associated with dairies. I think that's part of the scope of what we're looking at. But again, this is going to be a programmatic tool that then local agencies would be able to use to potentially develop, say, a within-the-scope determination, and not have to do a further CEQA document at that point. But we will look at that as part of the EIR that we're preparing. Two good questions.

Alright, well, we will hang out, I think, at least for the next 5 minutes, and, if any other comments do strike you, please do feel free to either raise your hand or type them into the chat. Insofar as it would fall within one of the regulatory tiers for CalRecycle, yes, we would, potentially look at a need to evaluate composting within properties otherwise associated with dairies.

Jeffery Esquivel: And just to add, there was another follow-up to the question was, it sounds like you stated composting on dairies is in the scope of work.That was… you just answered that. Thank you, Chris.

Chris Mundhenk: Here, just for context, since we do have a little bit of time before we…conclude, I will go back to… A little bit about what these facilities are, as written into SB 1046.

Jeffery Esquivel: Okay, it looks like we had another question come in. Will the permitted volume of material increase for the small and medium facilities to meet these goals?

Chris Mundhenk: I think that's something, and I'm not sure I fully understand the question there, Jane. The limits as established within…The legislation are essentially the cubic yards of material to be on-site at one time.

So within that, those won't be moving as they're established by the legislation. But if you're referring to the throughput. That is referred to. That is just a benchmark, that was kind of established by which they're approximate. We do understand that feedstocks are different. And so that's an approximate benchmark where we're trying to say what the throughput of a small facility may be. That's not a requirement.

And I did notice, we did have a couple of people kind of join a little bit later. I did want to note we did run through the presentation already, it was… it was rather brief. There will be another one, between 6 and 7.30. If you would like to join that, you can also register for that.

Jeffery Esquivel: Okay, looks like we had another question come in, To clarify, it sounds like operations in the small composting facility category would also fall within the limits of SB279. So…they would be exempt, question mark.

Chris Mundhenk: That is something we'll take a look at. Appreciate that comment, Dana. I don't have that information at my fingertips at this point, but we will make sure to provide that clarification in the EIR.

Jeffery Esquivel: And it looks like there was a follow-up to a question saying thank you, and just wondering about the overlap of the two.

Chris Mundhenk: Okay, great. Well, with that, it is 3.20. Seeing as we don't have any raised hands, I realize this was probably a shorter meeting than many folks were envisioning. But we do appreciate your time today. This is a valuable part of the CEQA process. And again, if you would like to provide comments, following this meeting, I am just putting back up on the screen the two methods that you can use to provide comments, either via email or regular mail.

And with that, thank you for your time.

Date:	August 17, 2026	Project Number:	1235.03.55
To:	Jeffery Esquivel, CalRecycle		
From:	Chris Mundhenk and Cody Boazman		
Subject:	Statewide Small-Medium Composting Facilities and Operations EIR Scoping Meeting #2 Transcript		

The following presents a transcript of the second of two scoping meetings conducted for the Small and Medium Composting Facilities and Operations EIR. The meetings were held virtually on Zoom. In attendance on behalf of the project team were Jeffery Esquivel (California Department of Resources Recovery and Recycling [CalRecycle]), Martin Perez (CalRecycle), Lea Gibson (CalRecycle), and Chris Mundhenk (NCE). The transcript was conducted by Zoom and then proofed by Cody Boazman of NCE.

The transcript includes both the presentation by Chris Mundhenk (NCE) and CalRecycle staff with public comments received following the presentation.

Presentation

Chris Mundhenk: Good evening, everyone. Welcome to our second part of the scoping meeting day for the small and medium composting Facilities and Operations Program EIR. We're going to give folks a few more minutes to log in. So bear with us, we'll probably get started at 6:02.

Okay, great, some more people are streaming in.

Alright, for those who just joined, we will get started in just a minute. We're just leaving a little time for some folks to continue to log in. Okay, with that, we'll go ahead and get started. So welcome, everyone, to our second part of, the Scoping Meeting for the Small and Medium Composting Facilities and Operations Program EIR. We really appreciate you being involved in the public process that we're undergoing here.

I will get into a little bit about what's on the agenda today, and also a little bit about the scope of the EIR that we're going to be preparing, and as well as the advanced schedule that we're going to be moving forward with. But first, a little bit of a disclaimer this is really just to lay the scene. We are at the beginning of the CEQA process here, and so a lot of the information that we're going to be sharing is still evolving as we're helping to determine what the program will look like. There will also be some pieces in terms of best management practices and mitigation measures that will continue to develop as we move forward through this process.

But as part of tonight's meeting we will go through some quick introductions. We have some CalRecycle staff, in the meeting room. We'll go a little bit over the meeting purpose, then a little bit into SB 1046, which is kind of the legislation that's really driving the need to prepare this EIR, as well as the purpose of the EIR.

And then into a bit about the CEQA process, where we are in the schedule, where we're going to be before the end of the year, how you can provide comments, and then we'll actually open it up for you to provide any verbal or written comments as part of this meeting, should you so desire.

A little bit about Zoom, if you would like to provide a verbal comment, you can actually raise your hand now. We will not unmute you until we get to the end of it. But you can also write your comments in the chat, if you so desire, and one of us will read them aloud. And yeah, we really appreciate you being part of this. So with that, let the CalRecycle staff introduce themselves. Martin, would you like to go first?

Martin Perez: Sure. Thanks, Chris. Martin Perez, I'm the manager of the Training and Assistance Section in CalRecycle's Waste Permitting Compliance, and Mitigation Division.

Jeffery Esquivel: Hello, everybody. My name is Jeffery Esquivel, and I'm the Senior Environmental Scientist and the project lead on this. I'll pass it back to you, Chris.

Chris Mundhenk: Alright, thank you. And hi, everyone. I didn't introduce myself before. Chris Mundhenk, I'm a principal and the project manager for preparation of this EIR and going to be helping CalRecycle sort of develop this, and hopefully get through this process before the end of the year.

And so with that, today we're going to be going a little bit through what the project actually is that we're going to be evaluating under CEQA, why we're actually doing it, outlining a bit about the CEQA process, and then again, turning it over and trying to really solicit comments that will help us shape what the scope of the environmental analysis should be.

So first and foremost, in terms of what we're doing here, and why we're preparing an EIR for this. So way back when, in 2016, a decade ago, SB 1383 established statewide goals for organic waste reduction across the state. EIR was then prepared in 2019, addressing some of the regulations associated with or the implementing regulations associated with SB1383. That EIR actually addressed the development of large composting facilities. As CalRecycle has continued to track progress towards the statewide goals of organic waste reduction, there is an identified need for additional composting facility capacity.

And then in 2024, a group of individuals with CalRecycle undertook a permitting study. That kind of evaluated how small and medium composting facilities were being permitted, and identified that, especially when it came to CEQA, there were, it wasn't always done consistently, and that it could be confusing, and especially when it got to permitting later on, that could cause complications and delays. So then, in September of 2024, legislation was passed that directed CalRecycle to prepare an EIR that will provide a consistent and efficient tool for the development of these small and medium composting facilities. And if you're wondering what the legislation actually says, qualifies as a small and a medium composting facility.

It's actually the first two, or the first bullet under each one of these subheadings. So a small composting facility within the legislation is defined as a facility that can have up to 5,000 cubic yards of material on-site at one time. Medium composting facility being a facility that can have up to 12,500 cubic yards of material at one time.

Based on information that was in the permitting study that was done, we've also identified a rough throughput, that is associated with this, this kind of cubic yard limit, being, for small facilities, about 10,000 tons per year, and for medium composting facilities being approximately 25,000 tons per year. I will note that based on these parameters, since 2021, CalRecycle has actually permitted 10 small and 18 medium facilities across the state.

And we're actually using, kind of, those numbers and some of the other data that CalRecycle has to develop what the program may actually look like, what that reasonably foreseeable condition will be.

And so that is actually what we're going to be evaluating within CEQA. So CEQA, on its face, is a conservation piece of legislation intended to allow for informed decision making. So it requires the lead agency, in this case

CalRecycle, to evaluate the potential physical environmental impacts of a project where they have discretion, or where it's required by law, which is what is happening in this case with SB 1046.

So we are intending with the preparation of this EIR to help inform decision makers about the physical environmental effects of this this program, this direction, through the legislation. Tonight is an example of how we're involving and trying to solicit public participation throughout this process.

And also, as part of the EIR, we're going to be identifying and incorporating feasible means of reducing environmental impacts, be that through best management practices or mitigation measures, and we're also going to be looking at alternatives, within the context of the EIR.

Okay, gonna take a quick breath right there. In terms of the process that we're in right now, the Notice of Preparation was issued on July 22nd for a 30-day public review period that ends on August 21st.

We're going to be following that up pretty quickly, with a draft EIR intended to be issued in October of this year. That will then go out for a 45-day public review period. So you'll again have the chance to, once we've actually completed all the analysis on what this program may look like, you'll have a chance again for 45 days to review the analysis that we've prepared and provide additional comment.

Following that, we'll prepare written responses to any comments received, and then prepare the final EIR, which will include a mitigation monitoring and reporting program. The formal response to comments, and then we'll also prepare a notice of determination, assuming that all is well with the EIR at that point. The EIR itself, based on what's written in the NOP and kind of the preliminary analysis that we've done so far, is actually going to be a largely full-scope EIR. It's largely going to use most of the issue areas listed in the back of Appendix G of the CEQA guidelines.

I won't list out everything that's shown here, but we are not going to be presenting detailed analysis of potential impacts related to population housing and recreation, as this is intended to accommodate and remove organics from the existing and projected waste stream that is occurring within the state. Other sections that will be included as part of the EIR, we will have a cumulative impact section. We will evaluate potential alternatives related to any significant environmental impacts that are identified. And then also, within the context of other CEQA findings that are required, we will evaluate growth-inducing impacts and significant environmental, or significant irreversible environmental changes.

Okay. I did want to note, two ways that you can provide comments outside of this meeting. So if you leave this meeting and you think of something that you would like to offer up then, you can either send a formal letter to Jeffery, to Jeffery's Attention at CalRecycle at 1001 I Street, or you can actually send an email to permittrainingassistance@calrecycle.ca.gov.

We'd ask that following this meeting, you use one of those two pathways, or both, if you so desire, but that those are the appropriate ways that we can make sure that we account for all the comments that have been received.

I do notice that there is one hand up, that's great. If folks other folks would like to provide comments, now is the time to raise your hand, or you can, again, provide a written comment in the chat, and Jeffery or I will read that aloud. So seeing, firsthand, I will actually go ahead and unmute, or I guess it's already done. Evan, if you would like to go ahead and present your comment, please feel free.

Public Comments

Evan Edgar: Thank you, Chris. Evan Edgar live from Santa Barbara today. I have, 5 major areas, so, but I don't want to, you know, throughout discussion tonight, but I kick off the first couple, and then I can see timing, but I do like to circle back to get all my 5 topics in.

Chris Mundhenk: Okay.

Evan Edgar: The first topic is, you know, this is a great program, EIR. Glad you're doing it. We're on behalf of the California Compost Coalition and Edgar Associates. It was really needed when the program EIR, was done for anaerobic digestion in 2010. It really was positive for the AD industry. And this is needed for small and medium.

But you kind of inferred that the pro… for the SB1383 was for large facilities, and it wasn't… really wasn't. It was for, 1383 as a whole, and I tried to make that one a program EIR for large-scale CASP commercial facilities, and I couldn't get there, and I went to attend all the meetings back during the 1383, so I just want to make sure that in your presentation, it talked… alluded to the fact that the 1383 EIR covered large facilities, but it did not cover it to what was really needed for a covered area static pile. So I think that's still needed, and so I don't want it to be misconstrued that large compost facilities are already covered by a program EIR. They are not.

I want to talk about the design of the tons. Usually with EIRs, we design for peaks, not for averages. And, you know, I've done a lot of project EIRs, and they were always peak, peak, peak, and the salt waste facilities permit by CalRecycle is about peak tons, and you have to look at that as your evaluation. What I've seen at these EA notification facilities, and I've permitted a lot of them. And that, where you have a 25,000 ton per year average, the peak could be as high as 50, 50, 55,000 to 60,000 tons per year, and I got case studies where, in practice, that is occurring today. So I would hate to have this evaluated on an average of 25,000 tons per year, where I know that, that each facility is being judged upon as peak capacity, so I would… I would like to suggest that the tons per day for a medium facility could be up to 60,000 tons per year, which kind of matches, shipping and grinding facilities are at 200 tons a day.

And they're co-located sometimes with compost to make the feedstock. So it kind of fits into that model. So I just want to make sure that upon evaluation of the, volatile Organic Compounds and Air Quality section, that we're evaluating up to 60,000 tons per year, as opposed to an average of 25,000 tons per year.

Chris Mundhenk: Okay, thank you.

Evan Edgar: I'll leave it there.

Chris Mundhenk: If you would like to keep going, no one else has raised their hand just yet.

Evan Edgar: Okay? Okay. That's number one, that was number two. Number three is feedstocks. And I'm only talking about the medium volume, not saying anything about small volume, so all my comments are directed at medium volume only, so not to… to be very clear, it doesn't roll over elsewhere.

With regards to feedstocks, we know at 12,500 cubic yards of EA notification, there is no food waste. Zero food waste is green waste, agricultural waste, and additives. So, as we evaluate the feedstock types that go into a medium volume facility, there is no food waste. And it's… so that's important, because it's green waste only, and there's different agricultural waste. And there's a lot of additives, and one additive I'd like to add to this discussion is biochar. What we're seeing with biochar, we're doing many research studies, is that biochar at, you know, up to 10%, 5-10% biochar can reduce VOC emissions by 33%, and reduced odors by a lot. So, as a… and it's great for the off-take agreement for, carbon sequestering into the natural working lands of California. So,

hopefully we can, evaluate the impacts of biochar. It's a growing market. It's, a lot of available biochar from the ag sector and forest sector and urban sector is available for, for, for, composting, and it's a great fit in order to, add as a feedstock, but do not look at food waste, because food waste, you can't use food waste. So there's no reason to evaluate food waste for, for a medium volume facility, but definitely we should include biochar.

Chris Mundhenk: Okay. Thank you.

Evan Edgar: As part of that, there's different models. You can do, pre-process the feedstock off-site, so it's very common that the feedstock is… goes through a MRF first. And it's cleaned up, load checked, size, and then the feedstock is feedstock ready. So Greenway is feedstock ready, it goes out to a ranch. You know, a lot of this is agricultural composting. If you look at the EA notification tier at CalRecycle on the Swiss list, most of those are in agricultural areas, and so… and a lot of them that comes in feedstock-ready, where the pre-processing and the storage up to, you know, is off-site, and it comes in, and is put right into the, right into the windrow.

And then after… then after, composting, it's not stored there, it's taken out to the ranch to stage at different areas on a ranch in order to do… do carbon farming. So… so the… the model is that what should be evaluated is when things are pre-processed off-site, feedstock ready, and then it's taken to an off-site, place on a ranch, so that model allows you to go 60,000 tons per year. You know, when you have it pre-processed off-site and then you have storage of the Title 14 pathogen reduced compost on the backside, you can move that along quickly. So that's how 60,000 tons per year can fit into a 12,500 cubic yard model, because of that pre-processing and off-site agreement allows that to happen, so I think that's important to evaluate, when it comes in pre-process, as opposed to the small, the medium volume compost facilities, you know, grinding on-site, bringing in traffic. It's such a mess. So, a lot of times, the ranchers, and I represent a lot of ranchers… let me put my, cowboy hat on here.

I'm on a roadshow right now doing carbon farming in Santa Barbara and Kern County and Tulare, where we go out to the ranch, we don't want salt fall, we want things pre-processed, so that model is working great for the ranches of California in order to, get up to 60,000 tons per year through an EA notification with green waste, ag waste, and biochar in the future.

Chris Mundhenk: Okay, great. Thank you. And… I think that was 4 points, you said you had 5?

Evan Edgar: Yeah, well, I got… those three was bundled in the tons and feed socks. Number 4… well, let me go with number 5 then again. Number 5 is off-take agreements. I think what really needs to be evaluated. People have misconstrued about what is compost for carbon farming with productive ag land, and what is just land application of mulches that aren't composted, that people who are at chip and grinding facilities don't compost, they land apply. So under your alternative analysis, like any program ER has to look at, the alternative analysis should really talk about that, about the, land application of materials, for the… what is truly carbon farming with Title 14 compost with agronomic rate on productive agricultural lands, where actually, you know, people are… have strict protocols to get carbon credits. So the future of medium-volume compost facilities to make them cost-effective, affordable, because there's not enough money in the system, is to get voluntary carbon credits to help fund all this. So, so there's some strict protocols when you do compost use for carbon farming, as opposed to the bad things in Upper Valley, Upper Desert, what's going on at LA, people just dumping raw green waste, calling it carbon farming or something. So, I think that under alternative analysis, the bad of what's going on should be discussed, and how CalRecycle just passed some really good land application regulations to give the LA some tools to minimize that, but I think that's important to discuss under your alternative analysis, coupled with no ADC.

There's some people who, think they're making compost, or clean up a remediated sites. I know CalRecycle funded different Cleanups of illegal dumping and stuff, and they use, screens to go to landfills ADC and trying to get recycling credits, and I… about a year ago, I piped up the… don't do that, CalRecycle, you know better. You know, you shouldn't be trying to use, screened or, compost for ADC, and actually, in Title 27.

Actually finished compost is allowed, unfortunately, but this is, you know, a greenhouse gas program, so should people use Title 14 compost as ADC, that should be the greenhouse gas impacts to that, because it's still going in footprint and landfill, and there's still some activity left. That needs to be discussed. So, the off-take agreements, should have some type of limited… what is allowed by Title 27 should be evaluated, because some people are making compost just for ADC, and that is so wrong. But if Title 27 allows that to happen.

They shouldn't get, you know, unfortunately, but they shouldn't get recycling credit. Well, they… I don't know how that works exactly nowadays. I think it's off the books, but that discussion is very credible to have as part of this program, EIR.

Chris Mundhenk: Great. Thank you very much, Evan. I appreciate the comments.

Evan Edgar: I got my last one. I got my final one.

Chris Mundhenk: Sorry.

Evan Edgar: So, my final list has to do with essential public service and admission reduction credits. The HDR and Edgar Associates worked on this, worked on September 10th, 2024, and I… I looked inside of there, and there's a lot of great technical information, and did get a nice discussion about emission reduction credits.

Which is very deafening, even to medium-volume compost facilities. I had one in San Joaquin County that, in San Joaquin Valley APCD, we got… we had to kill the project because ERCs would have been about $3 million.

On a commercial compost facility's large scale, Kern County Public Works paid $7.2 million for ERCs, and in the San Joaquin Valley APCD, you know, $175,000, and that's what the heartbeat of agriculture, the market, is in. The Central Valley, and they were stuck with the San Joaquin Valley APCD, you know, killing projects because of ERCs. So what… what LA… what South Coast AQMT… AQMD has commented upon, and the California Compost Coalition supported, is calling compost facilities at essential public service.

And that discussion has not happened. I tried to make it happen before, many times at CalRecycle and at CARB, but now's the opportunity in order to talk about, about making this a central public service, have a robust discussion, because it is you know, by all means, and we can follow the lead of South Coast AQMD as a thought leader here, and sending a benchmark on, is having central public service, so we don't have these ERCs, because as you know, doing CEQA, Chris, we worked on projects together over the years up in that, on a, on a, project level, a compost facility looks great from baseline. It's unbelievable how it looks on baseline, but we also know that when you apply for an ATC, it's a new source, and we're at ground zero.

And that doesn't jive when you just do this great work on a project EIR to how compost looks great, and then you turn around as ATC as if you're the bad guy, because you're doing the right thing. So, I think that's another robust discussion about how, following the South Coast AQMD lead to make that a statewide policy, the California Compost Coalition, on several occasions, tried to pass a bill in the legislature about that, and we get turned around, we just need more data.

I think that this program, EIR, is a great opportunity to show the benefits of these facilities, medium size, when you go out to agriculture, especially with carbon farming and carbon credits, the use of biochar for mitigation,

it's really a great opportunity, it's very timely. So, all these great points I point out today can really you know, take, green waste to EA notification to a whole new level.

I'm looking forward to the process. We'll be fully engaged, and those are my, five primary topics for the night.

Chris Mundhenk: Great. Thank you, Evan. I appreciate all the comments. I'll go ahead and, re-mute you, and… if you could… okay, your hand did lower. Thank you very much for those. Jeffery, it looks like we did get one other comment in the chat.

Martin Perez: I'll go ahead and read that out. First comment here… Excluded activities are already defined and have a threshold of 200 cubic yards and up to 500 cubic yards if owned by a public agency. So the definition of a small composting facility should be clarified to apply only to facilities more than the exemption limit, and up to 5,000 cubic yards. And as such, EIRs would not be necessary below 200 to 500 cubic yard threshold.

Chris Mundhenk: Thank you for that comment, Kourtney, and this comment actually did come up in our prior session as well. Although not listed in the NOP, we are planning on providing that distinction. About kind of the SB279 limits, and what falls under an excluded, notification tier.

Martin Perez: And next question here, can you please flip… flip back through the slides about the contents of the EIRs?

Chris Mundhenk: And I did that. I saw that comment ahead of time, so I went back to it. Well, great. Well… Not seeing any other hands up, we'll hold for about the next 3 minutes to see if anyone would like to offer up additional comments, or either verbally or in writing, but we do really thank you for your time this evening. This is valuable information for us to consider as we move forward with preparing the draft EIR. Oh, Evan, I see your hand raised again, and then we'll turn to Alexandra, so go right ahead.

Evan Edgar: For some reason, you guys split… I understand you had an earlier meeting I tried to sign up for and it was… and it's only for regulatory agencies, probably, responsible agencies, and it wasn't for stakeholders. I just don't understand why we need to be divided and conquered. You know, we should be able to hear the comments from state agencies as well. I don't know why I was excluded. And I would love to hear what they said. If you can recap any key comments from that earlier meeting that you found important that wasn't part of your presentation, if any, I would appreciate it, but in the future, it'd be nice to combine responsible agencies with stakeholders in the same room in the future.

Chris Mundhenk: Understood. And we'll take that into advisement. I will tell you the primary comment that did kind of come through in that prior meeting, was related to the SB279 distinction, and whether we would provide that clarification in the EIR. Alright. And then if we can…

Alexandra Farah: Hi there.

Chris Mundhenk: Go right ahead, Alexandra.

Alexandra Farah: Can you hear me? Okay. My name's Alex Farah, and I'm calling in, representing Fibershed, a nonprofit based out of Northern California, and we work to try and ensure more soil-to-soil systems and bioregional design in terms of our textiles and fibers.

And I was curious, I loved what Evan was saying about, the pre-processing, sorting through MRFs, then heading off to the ranch for further processing. I know that CalRecycle, under 1383 included the provision of allowing textiles, in the green containers, and…with SB707 coming through on the recovery of textiles, composting is considered an approved disposal for textiles in the state of California.

So I think I just… I want to make the most effective comment letter I can, and I'm curious where that might fall under the EIR issue areas, to advocate for at this time.

Chris Mundhenk: Sure, I mean, that would be a consideration, I believe, as part of the feedstocks that could be included within the composting facilities, but that is a great comment, and we will consider that as we move forward.

Alexandra Farah: Okay, thank you so much.

Chris Mundhenk: Okay. Well, seeing no other comments, again, we really appreciate your time this evening. Thank you for the valuable comments. And we look forward to…continued comments coming in through August 21st. And we hope you all have a great evening. Thank you very much.

Appendix B

Air Quality and Greenhouse Gas Technical Report

NCE has made every effort to provide this report and all associated information in an accessible format. If you need the appendices in an alternative format please contact Jeffrey Esquivel, (916) 341-6337, jeffery.esquivel@calrecycle.ca.gov.

Air Quality and GHG Technical Report for Small/Medium Composting Project Permitting

California Department of Resources Recycling and Recovery

P.O. Box 4025
Sacramento, CA 95812

August 2026

Prepared by:

Yorke® ENGINEERING, LLC
www.YorkeEngr.com

Office Locations:
Los Angeles, Orange County,
Long Beach, Riverside, Ventura, San Diego,
Fresno, Merced, Berkeley, San Francisco

Tel: (949) 248-8490
Fax: (949) 248-8499

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Sacramento, CA 95812

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Attachments

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ATTACHMENT 2 – MOBILE AND STATIONARY SOURCES OPERATIONAL EMISSIONS

ATTACHMENT 3 – HEALTH RISK ASSESSMENT

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List of Acronyms and Abbreviations

$\mu g/m^3$	Micrograms per cubic meter
AB	Assembly Bill
APR	Ambient Air Quality Project Risk
AQIA	Air Quality Impact Assessment
AQMP	Air Quality Management Plan
ASP	Aerated Static Pile
BAAQMD	Bay Area Air District (formally known as the Bay Area Air Quality Management District)
BACT	Best Available Control Technology
BMP	Best Management Practice
BPS	Best Performance Standards
CAA	Clean Air Act
CAAA	Clean Air Act Amendment
CARB	California Air Resources Board
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model®
CAPCOA	California Air Pollution Control Officers Association
CASP	Covered Aerated Static Pile
CEQA	California Environmental Quality Act
CERF	Compost Emission Reduction Factor
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalents
cy	Cubic Yards
DPM	Diesel Particulate Matter
E	Extreme
GAMAQI	Guidance for Assessing and Mitigating Air Quality Impacts
GHG	Greenhouse Gas
GWP	Global Warming Potential
HRA	Health Risk Assessment
lb	Pound
IPCC	Intergovernmental Panel on Climate Change
LEA	Local Enforcement Agency
LOS	Level of Service
LST	Localized Significance Threshold
LTS	Less Than Significant
MT/yr	Metric Ton per Year
MT CO_2e	Metric Tons of Carbon Dioxide Equivalent
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NF_3	Nitrogen Trifluoride

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NH_3	Ammonia
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NSR	New Source Review
O_3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
OIMP	Odor Impact Minimization Plan
PM	Particulate Matter
PM_{10}	Respirable Particulate Matter (Less Than 10 Microns in Size)
$PM_{2.5}$	Fine Particulate Matter (Less Than 2.5 Microns in Size)
POC	Precursor Organic Compound
ppm	Parts per million
PS	Potentially Significant
PTE	Potential to Emit
R	Refrigerants
RAQS	Regional Air Quality Strategy
ROG	Reactive Organic Gas
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SDAPCD	San Diego County Air Pollution Control District
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLCP	Short-Lived Climate Pollutant
SLT	Screening-Level Thresholds
SO_2	Sulfur Dioxide
SO_x	Sulfur Oxides
SRA	Source Receptor Area
TAC	Toxic Air Contaminant
TPM	Total Particulate Matter
TPY	Tons per Year
S	Severe
U	Unclassified
U.S. EPA	United States Environmental Protection Agency
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound

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Air Quality and GHG Technical Report for Small/Medium Composting Project Permitting

1.0 PROJECT OVERVIEW

The California Department of Resources Recycling and Recovery (CalRecycle) is preparing a Program Environmental Impact Report (PEIR) for a Statewide program intended to facilitate the permitting and development of small and medium compostable material handling facilities and operations pursuant to Senate Bill (SB) 1046. The program is designed to support implementation of SB 1383 by increasing California's capacity to process organic waste diverted from landfills through the development of additional composting facilities throughout the State.

Implementation of the program would result in the construction and operation of new small and medium composting facilities that process agricultural, food waste, and green waste materials. Operation of these facilities would generate emissions of criteria air pollutants, toxic air contaminants (TACs), and greenhouse gases (GHGs) from on-road vehicles, off-road equipment, and composting activities. This technical report provides the air quality and GHG impact analyses prepared for the PEIR. Emission estimates were developed for representative facility scenarios within four California air districts.

1.1 Project Location

The program area encompasses the entire State of California. The program is intended to facilitate the development and operation of new small and medium compostable material handling facilities and operations; however, specific facility locations have not been identified. Because future facility sites are unknown, potential air quality and GHG impacts were evaluated using representative facility scenarios developed for four regions of California, defined by the jurisdictional boundaries of the following air districts: the Bay Area Air District, San Joaquin Valley Air Pollution Control District (SJVAPCD), South Coast Air Quality Management District (SCAQMD), and San Diego County Air Pollution Control District (SDAPCD).

1.2 Facility Operations and Project Description

The Statewide program would facilitate the development and operation of small and medium compostable material handling facilities that process agricultural wastes, food waste, green waste, and other organic materials. 'Other organic materials' could include biosolids, digestate, or manure. These materials generally have a higher nitrogen concentration relative to green waste and can be used to improve the carbon to nitrogen ratio when blended with low-nitrogen feedstocks. Co-composting with biosolids, digestate, or manure is thought to lead to lower VOC emissions due to the improved nutrient ratio. For the purpose of this analysis, in order to be conservative (i.e., to ensure that emissions are not underestimated), the higher green waste emission factors are used to predict composting emissions rather than the lower co-composting emission factors.

As defined by SB 1046, small facilities, which are anticipated to occupy approximately 5 acres, would process up to 10,000 tons per year (TPY) of material with an on-site capacity of up to 5,000 cubic yards (cy). Medium facilities, which are anticipated to occupy approximately 11 acres, would process up to 25,000 TPY of material with an on-site capacity of up to 12,500 cy.

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Composting operations typically involve feedstock receiving and preparation, active composting, curing, screening, and product export. Incoming feedstocks may be ground, shredded, and sorted to remove contaminants before being placed into windrows, positively covered aerated static piles (CASPs), or negatively aerated static pile (ASP) systems for active composting. Following the active composting phase, material would be cured, screened to remove oversized materials and contaminants, and transported off-site for use as a soil amendment in agricultural, landscaping, and horticultural applications. Equipment commonly used during operations includes loaders, grinders, screeners, water trucks, and haul trucks.

1.3 Analysis Scenarios

1.3.1 Construction

Because the Statewide program does not identify specific facility locations or site designs, the construction analysis was based on representative facility scenarios. The scenarios were developed to capture the range of site development activities anticipated under the program.

Two construction scenarios were evaluated within each of the four air districts included in the analysis, representing development of small and medium composting facilities. The small facility scenarios assume development of 5-acre sites, while the medium facility scenarios assume development of 11-acre sites. For all scenarios, 25% of the site area was assumed to be paved. The scenarios and associated construction assumptions are included in Attachment 1.

1.3.2 Operations

Because the Statewide program does not identify specific facility locations or operational designs, the analyses were based on a series of representative composting facility scenarios. The scenarios were developed to capture the range of facility sizes, feedstocks, and composting technologies anticipated under the program.

Six scenarios were evaluated, representing small and medium composting facilities utilizing windrow, positive CASP, and negative ASP systems. Small facilities were assumed to have an on-site capacity of up to 5,000 cy and process up to 10,000 TPY of green waste, including food waste. Medium facilities were assumed to have an on-site capacity of up to 12,500 cy and process up to 25,000 TPY of green waste and food waste. The scenarios and associated operating assumptions are included in Attachment 2. Simplified descriptions of the scenarios are listed in Table 1-1.

Table 1-1: Representative Composting Facility Scenarios

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Facility Type	Small	Small	Small	Medium	Medium	Medium
Composting Technology	Windrows	Positive CASP	Negative ASP with Filter	Windrows	Positive CASP	Negative ASP with Filter
Throughput	10,000 TPY	10,000 TPY	10,000 TPY	25,000 TPY	25,000 TPY	25,000 TPY

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2.0 EMISSIONS

2.1 Construction

A project's construction phase produces many types of emissions, generally particulate matter less than 10 microns in size (PM_{10}), including particulate matter less than 2.5 microns in size ($PM_{2.5}$), in fugitive dust and diesel engine 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. Diesel-fueled construction equipment emits ozone (O_3) precursors nitrogen oxides (NO_x) and reactive organic gases (ROGs)[1], and diesel particulate matter (DPM). Use of architectural coatings and other materials associated with finishing buildings may also emit ROGs and TACs.

Construction emissions were evaluated for: 1) a small composting facility on a 5-acre site; and 2) a medium composting facility on an 11-acre site. It was assumed that 25% of the site would be developed with paved surfaces for both facility options.

Construction-related emissions were estimated using the California Emissions Estimator Model® (CalEEMod) Version 2022.1.1.45, 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. Attachment 1 provides additional detail on CalEEMod inputs, assumptions, and results.

Because construction-related criteria pollutant emissions were generally consistent across the four air districts evaluated[2], the maximum daily and annual construction emissions for each representative facility scenario are summarized in Table 2-1. Maximum construction GHG emissions, including total and amortized annual emissions, are summarized in Table 2-2. Because construction emissions occur over a finite construction period (less than a year) while operational emissions occur annually, construction GHG emissions are typically amortized over the anticipated project operational life and incorporated into annual GHG emissions for significance evaluation.

[1] ROG, volatile organic compounds (VOCs), and precursor organic compounds (POCs) all refer to photochemically ROGs and can be used interchangeably. For this report, VOC will generally be used to report emissions. POC and ROG will be used when the source document (study, report, software program, etc.) uses that nomenclature to avoid mis-representing the data. For example, CalEEMod is used for construction emission estimates; CalEEMod uses ROG in its documentation, so this report uses ROG in the construction emission discussion.

[2] The small and medium facility construction plans were identical for the four air districts. The predicted emissions varied because the criteria pollutant emission factors for the on-road and off-road vehicle fleets in the four jurisdictions vary due to differences in fleet composition and age. Overall, the emission totals for the four air districts varied by less than 2%. The maximum emissions are presented.

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Table 2-1: Construction Criteria Pollutants Emissions Summary

Pollutant	Small Facilities			Medium Facilities		
	Average Daily Emissions	Maximum Daily Emissions	Annual Emissions	Average Daily Emissions	Maximum Daily Emissions	Annual Emissions
	(lb/day)	(lb/day)	(TPY)	(lb/day)	(lb/day)	(TPY)
VOC	4.9	60.9	0.9	4.9	61.0	0.9
NO_x	6.2	28.1	1.1	6.5	28.1	1.2
CO	8.4	29.2	1.5	8.7	29.2	1.6
SO_x	0.01	0.05	0.003	0.02	0.06	0.003
PM_{10} (Exhaust)	0.2	1.2	0.04	0.2	1.2	0.04
Total PM_{10}	0.4	9.1	0.1	0.5	9.1	0.1
$PM_{2.5}$ (Exhaust)	0.2	1.1	0.04	0.2	1.1	0.04
Total $PM_{2.5}$	0.3	5.1	0.1	0.3	5.1	0.1

Source: CalEEMod Version 2022.1.1.45.

Note: Consistent with Bay Area Air District California Environmental Quality Act (CEQA) significance thresholds, exhaust PM_{10} and $PM_{2.5}$ emissions are presented separately because the applicable thresholds apply to exhaust particulate matter (PM) rather than total particulate matter (TPM) emissions. In addition, average daily emissions are presented because Bay Area Air District thresholds are based on average daily emissions rather than peak (maximum) daily emissions.

Table 2-2: Construction GHG Emissions Summary for Representative Facilities

GHG	Emissions ($MT CO_2e$)	
	Small Facilities	Medium Facilities
CO_2	256	271
CH_4	<1	<1
N_2O	<1	<1
R	<1	<1
Total CO_2e	257	272
Amortized CO_2e (30 Years)	9	9

Source: CalEEMod Version 2022.1.1.45.

Note: Construction-related GHG emissions were amortized over a 30-year operational life and incorporated into annual operational GHG emissions, consistent with applicable air district guidance (SCAQMD 2008a).

2.2 Operations

2.2.1 Overview

Operation of compost facilities would produce emissions of air pollutants from fuel combustion in stationary and mobile sources, decomposition of organic materials, and use of processing equipment. Emissions estimates were prepared for the mobile and stationary

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emission sources required to operate the six representative composting facility scenarios described in Section 1.3.2. Emissions estimates have been prepared for the following stationary source categories:

- Grinding and Screening Dust/Particulate Emissions;
- Material Handling Dust/Particulate Emissions;
- Wind Erosion Dust/Particulate Emissions;
- Feedstock Storage VOC Emissions;
- Composting VOC Emissions;
- Curing VOC Emissions;
- Finished Compost Storage VOC Emissions;
- Stationary diesel engine exhaust criteria pollutant emissions for grinders, screens, stackers, colorizers, and emergency engines;
- Feedstock storage, composting, curing, and finished compost storage organic TAC and ammonia (NH_3) emissions;
- Grinding, screening, material handling, and wind erosion Dust and Particulate TAC Emissions; and
- Stationary diesel engine exhaust DPM emissions.

And the following mobile source categories:

- Vehicle and Equipment Exhaust Emissions:
  - On-Road Vehicle Exhaust Emissions, and
  - Off-Road Equipment Exhaust Emissions;
- Fugitive Dust from Travel on Paved Roads;
- Fugitive Dust from Travel on Unpaved Roads;
- TAC Emissions:
  - Vehicle and Equipment Exhaust TAC Emissions:
    - Diesel Exhaust Emissions (i.e., DPM); and
    - Gasoline Exhaust Emissions;
  - Paved Road Dust TAC Emissions; and
  - Unpaved Road Dust TAC Emissions.

For each category of emissions, emission calculation worksheets for the proposed Project the calculation methodologies are explained and the data and assumptions used in the calculations are provided in Attachment 2.

Baseline operations for all scenarios assume that the feedstock would be sent to a landfill. Because the Statewide program does not identify specific facility locations, detailed comparisons to baseline operations must be largely undefined. The California Air

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Resources Board (CARB) and CalRecycle anticipate that emissions of VOCs, NO_x, PM_{10}, and $PM_{2.5}$ from processing compost feedstock would be lower at a composting facility relative to processing at a landfill. CARB and CalRecycle have produced general estimates for the level of GHG reductions that would be achieved through the redirection of 1 ton of organic material from a landfill to an anaerobic digester, composting facility, or other organic waste recovery facility. The Compost Emission Reduction Factor (CERF) model accounts for emissions increases associated with increased truck transport of organic wastes and energy requirements of facilities, as well as emissions reductions from the avoidance of methane (CH_4) emissions, decreased soil erosion and increased carbon sequestration potential, reduced synthetic fertilizer use, and reduced herbicide use (CalRecycle 2019: pg. 3.8-17).

For this analysis, it was assumed that criteria pollutant and TAC emissions at the compost facility would be new emissions, and landfill emissions of these pollutants are not estimated. As a practical matter, the criteria pollutant and TAC emissions have localized impacts, thus emissions of these pollutants from a remote landfill would not factor into the analyses of impacts at the composting sites.

For feedstock truck trips, there are three possibilities: 1) the distance to a new composting facility is shorter than the distance to a landfill; 2) the distance is the same as the distance to a landfill; and 3) the distance to a new composting facility is greater than the distance to a landfill. In the first two possibilities, emissions from truck travel would decrease or be unchanged. To ensure that project emissions are not underestimated, only the third possibility was included in emission calculations; feedstock truck trip distance to a landfill was subtracted from the truck trip distance to a composting facility. This difference from baseline is incorporated into the project emissions by using the difference in distance in the calculations; the baseline emissions from feedstock trucks are not presented separately.

It is likely that composting facilities will be located closer to feedstock sources than landfills because the largest feedstock sources (i.e., agriculture facilities) are also often the largest users of finished compost, which provides additional incentive to locate composting facilities close to the feedstock sources.

GHG emissions were assumed to decrease on a per-ton basis per CARB (CARB 2017). This document compares non-biogenic carbon dioxide (CO_2) emissions at landfills relative to composting facilities.

Projects in nonattainment areas subject to New Source Review (NSR) must have emissions offset. Projects with emissions that are greater than local air district offsets thresholds must purchase offsets to apply an emission reduction to the project such that the NSR emission increase in the air basin is zero. Offsets obtained for a project are accounted for as emissions reductions in this analysis. The offset thresholds for the Bay Area Air District, SJVAPCD, SCAQMD, and SDAPCD are summarized in Table 2-3.

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Table 2-3: Summary of Air District Offset Thresholds

Air District	NO_x (TPY)	VOC (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)
Bay Area Air District[1]	10	10	N/A	100	100	100
SJVAPCD	10	10	100	27.3	14.6	70
SCAQMD[2]	4	4	29	4	4	10
SDAPCD	25	25	N/A	N/A	N/A	N/A

[1]Bay Area Air District NO_x and VOC offset purchases are not needed until the Potential to Emit (PTE) is greater than 35 TPY; however, offsets are still provided by the Bay Area Air District's Small Facility Bank for projects with PTE between 10-35 TPY.

[2]Windrows are not subject to permit requirements in the SCAQMD; thus, a project would not be subject to permitting or NSR requirements in the SCAQMD and would not be required to provide offsets.

2.2.2 Operational Emissions Summary

Tables 2-4 through 2-15 summarize the daily and annual operational criteria pollutant emissions associated with the six project scenarios. Table 2-16 summarizes the net GHG operational emissions associated with the six operating scenarios. Each table lists stationary source emissions, mobile source emissions, offset requirement (if any), baseline emissions, and net emission increase for each air district. Detailed project emission calculations, including TAC emissions, are presented in Attachment 2.

Table 2-4: Summary of Daily Project and Baseline Operational Criteria Pollutants Emissions for Scenario 1: Small Facility, Windrows

Pollutant	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Stationary Source Emissions	4.84	111.10	13.66	0.02	0.87	0.43
Offsets – Bay Area Air District	0.00	-111.10	0.00	0.00	0.00	0.00
Offsets – SJVAPCD	0.00	-111.10	0.00	0.00	0.00	0.00
Offsets – SCAQMD	0.00	0.00	0.00	0.00	0.00	0.00
Offsets – SDAPCD	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Source Emissions	3.19	1.43	19.51	0.03	8.07	0.93
Baseline Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Net Increase – Bay Area Air District	8.03	1.43	33.17	0.05	8.95	1.35
Net Increase – SJVAPCD	8.03	1.43	33.17	0.05	8.95	1.35
Net Increase – SCAQMD	8.03	112.53	33.17	0.05	8.95	1.35
Net Increase – SDAPCD	8.03	112.53	33.17	0.05	8.95	1.35

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Table 2-5: Summary of Annual Project and Baseline Operational Criteria Pollutants Emissions for Scenario 1: Small Facility, Windrows

Pollutant	NO_x (TPY)	VOC (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)
Stationary Source Emissions	0.31	20.07	1.67	0.00	0.12	0.05
Offsets – Bay Area Air District	0.00	-20.07	0.00	0.00	0.00	0.00
Offsets – SJVAPCD	0.00	-20.07	0.00	0.00	0.00	0.00
Offsets – SCAQMD	0.00	0.00	0.00	0.00	0.00	0.00
Offsets – SDAPCD	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Source Emissions	0.50	0.22	3.04	0.01	1.26	0.14
Baseline Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Net Increase – Bay Area Air District	0.81	0.22	4.71	0.01	1.38	0.19
Net Increase – SJVAPCD	0.81	0.22	4.71	0.01	1.38	0.19
Net Increase – SCAQMD	0.81	20.30	4.71	0.01	1.38	0.19
Net Increase – SDAPCD	0.81	20.30	4.71	0.01	1.38	0.19

Table 2-6: Summary of Daily Project and Baseline Operational Criteria Pollutants Emissions for Scenario 2: Small Facility, CASP

Pollutant	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Stationary Source Emissions	4.84	32.64	13.66	0.02	0.87	0.43
Offsets – Bay Area Air District	0.00	0.00	0.00	0.00	0.00	0.00
Offsets – SJVAPCD	0.00	0.00	0.00	0.00	0.00	0.00
Offsets – SCAQMD	0.00	-32.64	0.00	0.00	0.00	0.00
Offsets – SDAPCD	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Source Emissions	2.91	1.30	17.10	0.03	7.43	0.86
Baseline Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Net Increase – Bay Area Air District	7.75	33.93	30.76	0.05	8.30	1.28
Net Increase – SJVAPCD	7.75	33.93	30.76	0.05	8.30	1.28
Net Increase – SCAQMD	7.75	1.30	30.76	0.05	8.30	1.28
Net Increase – SDAPCD	7.75	33.93	30.76	0.05	8.30	1.28

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Table 2-7: Summary of Annual Project and Baseline Operational Criteria Pollutants Emissions for Scenario 2: Small Facility, CASP

Pollutant	NO_x (TPY)	VOC (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)
Stationary Source Emissions	0.31	5.75	1.67	0.00	0.12	0.05
Offsets – Bay Area Air District	0.00	0.00	0.00	0.00	0.00	0.00
Offsets – SJVAPCD	0.00	0.00	0.00	0.00	0.00	0.00
Offsets – SCAQMD	0.00	-5.75	0.00	0.00	0.00	0.00
Offsets – SDAPCD	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Source Emissions	0.45	0.20	2.67	0.00	1.16	0.13
Baseline Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Net Increase – Bay Area Air District	0.77	5.96	4.34	0.01	1.28	0.18
Net Increase – SJVAPCD	0.77	5.96	4.34	0.01	1.28	0.18
Net Increase – SCAQMD	0.77	0.20	4.34	0.01	1.28	0.18
Net Increase – SDAPCD	0.77	5.96	4.34	0.01	1.28	0.18

Table 2-8: Summary of Daily Project and Baseline Operational Criteria Pollutants Emissions for Scenario 3: Small Facility, Negative ASP with Filter

Pollutant	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Stationary Source Emissions	4.84	22.83	13.66	0.02	0.87	0.43
Offsets – Bay Area Air District	0.00	0.00	0.00	0.00	0.00	0.00
Offsets – SJVAPCD	0.00	0.00	0.00	0.00	0.00	0.00
Offsets – SCAQMD	0.00	0.00	0.00	0.00	0.00	0.00
Offsets – SDAPCD	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Source Emissions	2.91	1.30	17.10	0.03	7.43	0.86
Baseline Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Net Increase – Bay Area Air District	7.75	24.12	30.76	0.05	8.30	1.28
Net Increase – SJVAPCD	7.75	24.12	30.76	0.05	8.30	1.28
Net Increase – SCAQMD	7.75	24.12	30.76	0.05	8.30	1.28
Net Increase – SDAPCD	7.75	24.12	30.76	0.05	8.30	1.28

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Table 2-9: Summary of Annual Project and Baseline Operational Criteria Pollutants Emissions for Scenario 3: Small Facility, Negative ASP with Filter

Pollutant	NO_x (TPY)	VOC (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)
Stationary Source Emissions	0.31	3.96	1.67	0.00	0.12	0.05
Offsets – Bay Area Air District	0.00	0.00	0.00	0.00	0.00	0.00
Offsets – SJVAPCD	0.00	0.00	0.00	0.00	0.00	0.00
Offsets – SCAQMD	0.00	0.00	0.00	0.00	0.00	0.00
Offsets – SDAPCD	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Source Emissions	0.45	0.20	2.67	0.00	1.16	0.13
Baseline Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Net Increase – Bay Area Air District	0.77	4.17	4.34	0.01	1.28	0.18
Net Increase – SJVAPCD	0.77	4.17	4.34	0.01	1.28	0.18
Net Increase – SCAQMD	0.77	4.17	4.34	0.01	1.28	0.18
Net Increase – SDAPCD	0.77	4.17	4.34	0.01	1.28	0.18

Table 2-10: Summary of Daily Project and Baseline Operational Criteria Pollutants Emissions for Scenario 4: Medium Facility, Windrows

Pollutant	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Stationary Source Emissions	6.36	275.62	35.35	0.05	1.77	0.71
Offsets – Bay Area Air District	0.00	-275.62	0.00	0.00	0.00	0.00
Offsets – SJVAPCD	0.00	-275.62	0.00	0.00	0.00	0.00
Offsets – SCAQMD	0.00	0.00	0.00	0.00	0.00	0.00
Offsets – SDAPCD	0.00	-275.62	0.00	0.00	0.00	0.00
Mobile Source Emissions	8.24	3.30	50.74	0.09	20.85	2.38
Baseline Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Net Increase – Bay Area Air District	14.60	3.30	86.09	0.14	22.62	3.09
Net Increase – SJVAPCD	14.60	3.30	86.09	0.14	22.62	3.09
Net Increase – SCAQMD	14.60	278.91	86.09	0.14	22.62	3.09
Net Increase – SDAPCD	14.60	3.30	86.09	0.14	22.62	3.09

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Table 2-11: Summary of Annual Project and Baseline Operational Criteria Pollutants Emissions for Scenario 4: Medium Facility, Windrows

Pollutant	NO_x (TPY)	VOC (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)
Stationary Source Emissions	0.55	50.09	5.05	0.01	0.27	0.10
Offsets – Bay Area Air District	0.00	-50.09	0.00	0.00	0.00	0.00
Offsets – SJVAPCD	0.00	-50.09	0.00	0.00	0.00	0.00
Offsets – SCAQMD	0.00	0.00	0.00	0.00	0.00	0.00
Offsets – SDAPCD	0.00	-50.09	0.00	0.00	0.00	0.00
Mobile Source Emissions	1.28	0.51	7.92	0.01	3.25	0.37
Baseline Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Net Increase – Bay Area Air District	1.83	0.51	12.97	0.02	3.53	0.47
Net Increase – SJVAPCD	1.83	0.51	12.97	0.02	3.53	0.47
Net Increase – SCAQMD	1.83	50.60	12.97	0.02	3.53	0.47
Net Increase – SDAPCD	1.83	0.51	12.97	0.02	3.53	0.47

Table 2-12: Summary of Daily Project and Baseline Operational Criteria Pollutants Emissions for Scenario 5: Medium Facility, CASP

Pollutant	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Stationary Source Emissions	6.36	79.45	35.35	0.05	1.77	0.71
Offsets – Bay Area Air District	0.00	-79.45	0.00	0.00	0.00	0.00
Offsets – SJVAPCD	0.00	-79.45	0.00	0.00	0.00	0.00
Offsets – SCAQMD	0.00	-79.45	0.00	0.00	0.00	0.00
Offsets – SDAPCD	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Source Emissions	7.54	2.97	44.72	0.08	19.23	2.20
Baseline Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Net Increase – Bay Area Air District	13.90	2.97	80.07	0.13	21.00	2.91
Net Increase – SJVAPCD	13.90	2.97	80.07	0.13	21.00	2.91
Net Increase – SCAQMD	13.90	2.97	80.07	0.13	21.00	2.91
Net Increase – SDAPCD	13.90	82.43	80.07	0.13	21.00	2.91

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Table 2-13: Summary of Annual Project and Baseline Operational Criteria Pollutants Emissions for Scenario 5: Medium Facility, CASP

Pollutant	NO_x (TPY)	VOC (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)
Stationary Source Emissions	0.55	14.29	5.05	0.01	0.27	0.10
Offsets – Bay Area Air District	0.00	-14.29	0.00	0.00	0.00	0.00
Offsets – SJVAPCD	0.00	-14.29	0.00	0.00	0.00	0.00
Offsets – SCAQMD	0.00	-14.29	0.00	0.00	0.00	0.00
Offsets – SDAPCD	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Source Emissions	1.18	0.46	6.98	0.01	3.00	0.34
Baseline Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Net Increase – Bay Area Air District	1.73	0.46	12.03	0.02	3.27	0.44
Net Increase – SJVAPCD	1.73	0.46	12.03	0.02	3.27	0.44
Net Increase – SCAQMD	1.73	0.46	12.03	0.02	3.27	0.44
Net Increase – SDAPCD	1.73	14.75	12.03	0.02	3.27	0.44

Table 2-14: Summary of Daily Project and Baseline Operational Criteria Pollutants Emissions for Scenario 6: Medium Facility, Negative ASP with Filter

Pollutant	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Stationary Source Emissions	6.36	54.93	35.35	0.05	1.77	0.71
Offsets – Bay Area Air District	0.00	0.00	0.00	0.00	0.00	0.00
Offsets – SJVAPCD	0.00	0.00	0.00	0.00	0.00	0.00
Offsets – SCAQMD	0.00	-54.93	0.00	0.00	0.00	0.00
Offsets – SDAPCD	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Source Emissions	7.54	2.97	44.72	0.08	19.23	2.20
Baseline Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Net Increase – Bay Area Air District	13.90	57.90	80.07	0.13	21.00	2.91
Net Increase – SJVAPCD	13.90	57.90	80.07	0.13	21.00	2.91
Net Increase – SCAQMD	13.90	2.97	80.07	0.13	21.00	2.91
Net Increase – SDAPCD	13.90	57.90	80.07	0.13	21.00	2.91

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Table 2-15: Summary of Annual Project and Baseline Operational Criteria Pollutants Emissions for Scenario 6: Medium Facility, Negative ASP with Filter

Pollutant	NO_x (TPY)	VOC (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)
Stationary Source Emissions	0.55	9.82	5.05	0.01	0.27	0.10
Offsets – Bay Area Air District	0.00	0.00	0.00	0.00	0.00	0.00
Offsets – SJVAPCD	0.00	0.00	0.00	0.00	0.00	0.00
Offsets – SCAQMD	0.00	-9.82	0.00	0.00	0.00	0.00
Offsets – SDAPCD	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Source Emissions	1.18	0.46	6.98	0.01	3.00	0.34
Baseline Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Net Increase – Bay Area Air District	1.73	10.28	12.03	0.02	3.27	0.44
Net Increase – SJVAPCD	1.73	10.28	12.03	0.02	3.27	0.44
Net Increase – SCAQMD	1.73	0.46	12.03	0.02	3.27	0.44
Net Increase – SDAPCD	1.73	10.28	12.03	0.02	3.27	0.44

Table 2-16: Summary GHG Emissions Relative to Baseline for All Scenarios

Parameter	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Feedstock	Green Waste	Green Waste	Green Waste	Green Waste + Food Waste	Green Waste + Food Waste	Green Waste + Food Waste
GHG Reduction Relative to Sending to Landfill (CARB 2017) (MT CO_2e/Ton Feedstock)	-0.44	-0.44	-0.44	-0.56	-0.56	-0.56
Throughput (TPY)	10,000	10,000	10,000	25,000	25,000	25,000
Net Emission Change (MT CO_2e/Year)	-4,400	-4,400	-4,400	-14,000	-14,000	-14,000

3.0 IMPACT ANALYSES

3.1 Significance Thresholds

The air quality, odor, health risk assessment (HRA), and GHG analyses were conducted using significance thresholds adopted or recommended by the applicable air district. The applicable thresholds are described below and summarized in the following tables.

3.1.1 Bay Area Air District

The Bay Area Air District CEQA Air Quality Guidelines provide significance thresholds for criteria pollutants, health risk impacts, and GHGs. The thresholds used in this analysis for projects in the Bay Area Air District are summarized in Table 3-1.

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Table 3-1: Bay Area Air District CEQA Thresholds of Significance

Pollutant	Construction Related	Operational	
	Average Daily Emissions (lb/day)	Average Daily Emissions (lb/day)	Maximum Annual Emissions (TPY)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
$PM_{10}/PM_{2.5}$ (Fugitive Dust)	Best Management Practices (BMPs)[1]	None	
Local CO	None	9.0 ppm (8-Hour Average), 20.0 ppm (1-Hour Average)	
Risks and Hazards for New Sources and Receptors (Cumulative Threshold)	Same as Operational Thresholds	Cancer Risk: > 100 In a Million (From All Local Sources) Non-Cancer: > 10.0 Hazard Index (Chronic, From all Local Sources) $PM_{2.5}$: > 0.8 µg/m^3 Annual Average (From All Local Sources)	OR Compliance with Qualified Community Risk Reduction Plan
Risks and Hazards for New Sources and Receptors (Individual Project)	Same as Operational Thresholds	Increased Cancer Risk >10.0 In a Million Increased Non-Cancer > 1.0 Hazard Index (Chronic or Acute) $PM_{2.5}$ Increase: > 0.3 µg/m^3 Annual Average	OR Compliance with Qualified Community Risk Reduction Plan
Accidental Release of Acutely Hazardous Air Pollutants	None	Storage or use of acutely hazardous materials located near receptors or new receptors located near stored or used acutely hazardous materials are considered significant.	
Odors	None	Five confirmed complaints per year, averaged over 3 years.	
GHGs	None	▪ Consistent with applicable Statewide GHG reduction plans, regulations, and targets. ▪ Implement project's "fair share" of GHG reductions necessary to achieve Statewide climate goals.[2]	

Source: Bay Area Air District 2022

Notes:

[1]$PM_{10}/PM_{2.5}$ (fugitive dust) is also recognized to impact local communities. The Bay Area Air District strongly recommends implementing all feasible fugitive dust management practices, especially when construction projects are located near sensitive communities, including schools, residential areas, or other sensitive land uses. These measures are detailed in Chapter 5, Section 5.2.2, Construction-Related Criteria Air Pollutant Emissions, of the Bay Area Air District 2022 CEQA Guidelines.

[2]The Bay Area Air District recommends a "fair share" approach for evaluating project GHG emissions. Under this approach, a project's GHG impact may be considered Less Than Significant if the project is consistent with applicable Statewide GHG reduction plans, regulations, and programs intended to achieve California's long-term climate goals. The Bay Area Air District also identifies a bright-line threshold of 10,000 MT CO_2e per year for stationary-source projects.

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3.1.2 SJVAPCD

SJVAPCD significance thresholds are provided in the District's Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI). The GAMAQI includes significance thresholds that are used to evaluate CEQA impacts for criteria air pollutants, health risk impacts, and GHGs. The significance thresholds used in this analysis for projects in the SJVAPCD are summarized in Table 3-2.

Table 3-2: SJVAPCD CEQA Thresholds of Significance

Pollutant	Construction Emissions (TPY)	Operations Emissions		Ambient Air Quality Project Risk (APR-2030) Threshold[1] (lbs/day)
		Permitted Equipment and Activities (TPY)	Non-Permitted Equipment and Activities (TPY)	
CO	100	100	100	100
NO_x	10	10	10	100
VOC	10	10	10	100
SO_x	27	27	27	100
PM_{10}	15	15	15	100
$PM_{2.5}$	15	15	15	100
TACs (Including Carcinogens and Non-Carcinogens)	Maximally Exposed Individual risk equals or exceeds 20 in one million.			
	Acute: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual.			
	Chronic: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual.			
Odors	▪ Project has the potential to expose sensitive receptors within 1 mile of an odor source and create a nuisance odor impact. ▪ The SJVAPCD defines a significant odor problem as more than one confirmed complaint per year or three unconfirmed complaints per year, averaged over a three-year period.			
GHGs	▪ Implement Best Performance Standards (BPS). ▪ Reduce Project GHG Emission by 29% over Business as Usual.[2]			

Source: SJVAPCD 2015a-c; SJVAPCD 2018; SJVAPCD 2009 a and b.

[1]Threshold for construction or operation.

[2]The SJVAPCD supports compliance with California's Assembly Bill (AB) 32 by implementing a Climate Change Action Plan focused on reducing GHG emissions through energy efficiency, renewable energy, sustainable land use, and Vehicle Miles Traveled (VMT) reduction strategies. The District has adopted BPS to help evaluate GHG impacts under CEQA, considering projects meeting these standards as less-than-significant. Additionally, the SJVAPCD engages communities through programs like AB 617 and clean vehicle initiatives to reduce emissions.

3.1.3 SCAQMD

The SCAQMD has established CEQA significance thresholds for criteria pollutants, health risk impacts, and GHGs. These thresholds are used to evaluate the significance of project-related emissions and exposure impacts within the South Coast Air Basin. The thresholds used in this analysis for projects in the SCAQMD are summarized in Table 3-3.

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Table 3-3: SCAQMD CEQA Thresholds of Significance

Pollutant	Construction Emissions (lbs/day)	Operations Emissions (lbs/day)
ROG (VOC)	75	55
NO_X	100	55
CO	550	550
SO_x	150	150
PM_{10}	150	150
$PM_{2.5}$	55	55
24-Hour $PM_{2.5}$ Increment	10.4 µg/m^3	2.5 µg/m^3
24-Hour PM_{10} Increment	10.4 µg/m^3	2.5 µg/m^3
Annual PM_{10} Increment	1.0 µg/m^3 Annual Average	
1-Hour NO_2 Increment	0.18 ppm (State)	
Annual NO_2 Increment	0.03 ppm (State) & 0.0534 ppm (Federal)	
1-Hour SO_2 Increment	0.25 ppm (State) & 0.075 ppm (Federal – 99th percentile)	
24-Hour SO_2 Increment	0.04 ppm (State)	
24-Hour Sulfate Increment	25 ug/m^3 (State)	
1-Hour CO Increment	20 ppm (State) & 35 ppm (Federal)	
8-Hour CO Increment	9.0 ppm (State/Federal)	
TACs (Including Carcinogens and Non-Carcinogens)	Maximum Incremental Cancer Risk ≥10 in 1 Million	
	Cancer Burden >0.5 Excess Cancer Cases (In Areas ≥1 in 1 Million)	
	Chronic and Acute Hazard Index ≥1.0 (Project Increment)	
Odors[1]	Project creates an odor nuisance pursuant to Rule 402.	
GHGs	10,000 MT/yr CO_2e for Industrial Facilities	

Source: SCAQMD 2023

[1]Note: The SCAQMD Rule 1133 Staff Report identifies a recommended setback distance of approximately a ¼-mile between composting operations and sensitive receptors (SCAQMD 2011). Although this recommendation is not a CEQA significance threshold, it was considered in the development of the odor impact analysis and BMP recommendations presented in Section 5.2.3.

3.1.4 SDAPCD

The SDAPCD has not adopted CEQA significance thresholds for evaluating air quality, GHG, or health risk impacts. Therefore, this analysis relies on Screening-Level Thresholds (SLTs) developed by San Diego County to assist lead agencies in evaluating air quality impacts under CEQA. The County's SLTs are based on SDAPCD Air Quality Impact Assessment (AQIA) screening criteria, United States Environmental Protection Agency (U.S. EPA) guidance, and significance thresholds adopted by other California air districts. The thresholds used in this analysis for projects in San Diego County are summarized in Table 3-4.

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Table 3-4: SDAPCD AQIA Screening Criteria

Air Contaminant	lbs/hr	lbs/day	TPY
PM_{10}	–	100	15
$PM_{2.5}$	–	55	10
NO_x	25	250	40
SO_x	25	250	40
CO	100	550	100
ROG	–	75	13.7
DPM	Excess Cancer Risk >1 in 1 million; Chronic or Acute Hazard Index >1.0		
Local CO	▪ Project would not place sensitive receptors within 500 feet of a signalized intersection operating at Level of Service (LOS) E or worse with more than 3,000 peak-hour trips; and ▪ Project would not cause an intersection with more than 3,000 peak-hour trips to operate at LOS E or worse.		
Odors	Project would generate objectionable odors resulting in a public nuisance pursuant to SDAPCD Rule 51.		
GHGs	Climate Action Plan Consistency		

Source: San Diego County 2007 and 2018.

3.2 Would the Project Conflict with or Obstruct the Implementation of the Applicable Air Quality Management Plan?

Organic waste management plays an important role in California's climate strategy. SB 1383 established Statewide targets to reduce the disposal of organic waste and recover edible food, thereby reducing CH_4 emissions associated with decomposition of landfilled organic materials. The Statewide composting program evaluated in this report is intended to support implementation of SB 1383 by facilitating the development of additional composting capacity throughout California.

The current Bay Area Air District Air Quality Management Plan (AQMP) was prepared in 2017. Objectives of the plan include composting organic waste and reducing CH_4 emissions from landfills. This Project will support these objectives. (BAAQMD 2017)

The SJVAPCD has plans for PM and O_3. The latest plans are the 2024 Plan for the 2012 Annual $PM_{2.5}$ Standard and the 2022 Plan for the 2015 8-Hour Ozone Standard. The 2024 plan for $PM_{2.5}$ states that composting is an alternative to open burning, which would reduce $PM_{2.5}$ from open burning. The 2022 plan for O_3 notes that SJVAPCD Rule 4566 regulates emissions from composting facilities. Projects in the SJVAPCD are expected to comply with this rule. Therefore, this Project does not interfere with the implementation of the current air quality plans from SJVAPCD (SJVAPCD 2024 and SJVAPCD 2022).

The current SCAQMD AQMP was prepared in 2022. This plan notes that composting activities are a source of VOCs and NH_3. The plan notes that composting facilities are regulated by Rules 1133, 1133.1, 1133.2, and 1133.3. Projects in the SCAQMD are expected to comply with these rules. Therefore, this Project does not interfere with the implementation of the current AQMP from SCAQMD (SCAQMD 2022 and SCAQMD 2011).

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The SDAPCD has plans for attaining O_3 standards in San Diego and a general regional air quality plan. The latest plans are the 2020 Plan for Attaining the National Ambient Air Quality Standards (NAAQS) for Ozone in San Diego County, and the 2022 Regional Air Quality Strategy (RAQS). Compost activities are not discussed in the 2020 plan for O_3 attainment. Diversion of organic waste from landfills is expected to reduce VOC emissions from landfills; reducing VOC emissions from landfills is a goal in the 2020 O_3 plan. The 2022 RAQS includes a goal to incentivize low-carbon farming techniques, such as composting. It also notes that rules may be required for composting activities, as such activities increase in the region. Projects in the SDAPCD are expected to comply with all relevant rules intended to reduce VOC emissions and O_3 levels. Therefore, this Project supports the objective of increasing composting in the 2022 RAQS and does not interfere with the implementation of SDAPCD air quality plans (SDAPCD 2020, and SDAPCD 2022).

IMPACT: Less Than Significant

3.3 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?

3.3.1 Construction

Construction-related criteria pollutant emissions were compared to the applicable significance thresholds for the Bay Area Air District, SJVAPCD, SCAQMD, and SDAPCD. Tables 3-5 through 3-10 compare the construction emissions for the representative small and medium composting facility scenarios to the applicable air district significance thresholds.

For the SCAQMD, localized air quality impacts were also evaluated. Because specific facility locations and nearby sensitive receptor locations have not been identified, project-specific Localized Significance Threshold (LST) analyses cannot be conducted at the program level. Therefore, the localized air quality analysis applied SCAQMD LSTs using a receptor distance of 50 meters, which is representative of the minimum distance likely to occur between future composting operations and nearest receptors. Two-acre LSTs were conservatively used for the small (5-acre) facility scenario to represent a reasonable upper-bound daily construction disturbance area for facilities of this size. Five-acre LSTs were used for the medium facility scenario because active construction disturbance is not expected to exceed 5 acres on any given day. Because SCAQMD LSTs increase as the distance to the nearest sensitive receptor increases, the use of a 50-meter receptor distance provides a conservative assessment of localized impacts. Facilities with receptors located farther than 50 meters from construction activities would be evaluated using less stringent LST thresholds and would generally be expected to result in lower localized impacts. Site-specific localized impact analyses may be warranted during subsequent project-level environmental review where receptors are located closer than assumed in this analysis or where project conditions differ substantially from the representative facility scenarios.

As shown in Tables 3-5 through 3-10, construction-related criteria pollutant emissions would not exceed the applicable significance thresholds for either the small or medium facility scenarios and impacts would be Less Than Significant; however, because future facility locations and receptor distances are unknown, localized construction air quality

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impacts for facilities in SCAQMD with receptors located closer than 50 meters from construction activities are conservatively considered Potentially Significant.

Table 3-5: Construction Emissions Summary and Significance Evaluation (Bay Area Air District)

Criteria Pollutants	Construction Emissions (lb/day)		Threshold (lb/day)	Significant?
	Small Facilities	Medium Facilities		
ROG (VOC)	4.9	4.9	54	No
NO_x	6.2	6.5	54	No
PM_{10} (Exhaust)	0.2	0.2	82	No
$PM_{2.5}$ (Exhaust)	0.2	0.2	54	No

Sources: Bay Area Air District 2022, CalEEMod Version 2022.1.1.45.

Note: lb/day are average daily emissions for planned land use.

Table 3-6: Construction Emissions Summary and Significance Evaluation (SJVAPCD)

Pollutant	Construction Emissions (lb/day)		Threshold (lb/day)	Construction Emissions (TPY)		Threshold (TPY)	Significant?
	Small	Medium		Small	Medium		
ROG	60.9	61.0	100	0.9	0.9	10	No
NO_x	28.0	28.0	100	1.1	1.2	10	No
CO	28.8	28.8	100	1.5	1.6	100	No
SO_x	0.05	0.06	100	0.003	0.003	27	No
Total PM_{10}	8.9	8.9	100	0.1	0.1	15	No
Total $PM_{2.5}$	5.0	5.0	100	0.1	0.1	15	No

Sources: SJVAPCD 2015b, CalEEMod Version 2022.1.1.45.

Table 3-7: Regional Construction Emissions Summary and Significance Evaluation (SCAQMD)

Pollutant	Construction Emissions (lb/day)		Threshold (lb/day)	Significant?
	Small Facilities	Medium Facilities		
ROG (VOC)	60.9	61.0	75	No
NO_x	28.1	28.1	100	No
CO	29.2	29.2	550	No
SO_x	0.05	0.06	150	No
Total PM_{10}	9.1	9.1	150	No
Total $PM_{2.5}$	5.1	5.1	55	No

Sources: SCAQMD 2023, CalEEMod Version 2022.1.1.45.

Note: lb/day are winter or summer maxima for planned land use.

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Table 3-8: Localized Construction Emissions Summary and Significance Evaluation for Small Facilities (SCAQMD)

Pollutant	Construction Emissions (lb/day)	Threshold[1] (lb/day)	Significant?[2]
NO_x	28.1	106	No
CO	29.2	1,368	No
Total PM_{10}	9.1	25	No
Total $PM_{2.5}$	5.1	7	No

Sources: SCAQMD 2023, CalEEMod Version 2022.1.1.45.

Notes:

[1]Source Receptor Area (SRA) 1, Receptor distance 50 meters from site boundary, 2-acre site.

[2]Localized emissions from construction from the representative small compost facilities, would below the LST at the nearest receptors of 50 meters, and impacts would be Less Than Significant. Site-specific localized impact analyses may be warranted during subsequent project-level environmental review where receptors are located closer than 50 meters from construction activities or where project conditions differ substantially from the representative facility scenarios. Therefore, for facilities with receptors located closer than 50 meters from construction activities, localized construction air quality impacts are conservatively assumed to be Potentially Significant.

Table 3-9: Localized Construction Emissions Summary and Significance Evaluation for Medium Facilities (SCAQMD)

Criteria Pollutants	Construction Emissions (lb/day)	Threshold[1] (lb/day)	Significant?[2]
NO_x	28.1	157	No
CO	29.2	2,331	No
Total PM_{10}	9.1	50	No
Total $PM_{2.5}$	5.1	11	No

Sources: SCAQMD 2008b, CalEEMod Version 2022.1.1.45.

Note:

[1]SRA 1, Receptor distance 50 meters from site boundary, 5-acre site.

[2]Localized emissions from construction from the representative medium compost facilities, would below the LST at the nearest receptors of 50 meters, and impacts would be Less Than Significant. Site-specific localized impact analyses may be warranted during subsequent project-level environmental review where receptors are located closer than 50 meters from construction activities or where project conditions differ substantially from the representative facility scenarios. Therefore, for facilities with receptors located closer than 50 meters from construction activities, localized construction air quality impacts are conservatively assumed to be Potentially Significant.

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Table 3-10: Construction Emissions Summary and Significance Evaluation (SDAPCD)

Criteria Pollutants	Construction Emissions (lb/day)		Threshold (lb/day)	Construction Emissions (TPY)		Threshold (TPY)	Significant?
	Small Facilities	Medium Facilities		Small Facilities	Medium Facilities		
ROG (VOC)	60.9	61.0	75	0.9	0.9	13.7	No
NO_x	28.0	28.0	250	1.1	1.2	40	No
CO	28.9	28.9	550	1.5	1.6	100	No
SO_x	0.05	0.06	250	0.003	0.003	40	No
Total PM_{10}	9.0	9.0	100	0.1	0.1	15	No
Total $PM_{2.5}$	5.1	5.1	55	0.1	0.1	10	No

Sources: San Diego County 2007, CalEEMod Version 2022.1.1.45.

IMPACT: Less Than Significant in the Bay Area Air District, SJVAPCD, and SDAPCD

IMPACT: Potentially Significant in SCAQMD

3.3.1.1 Mitigation Measures

For facilities in SCAQMD with receptors located closer than 50 meters from construction activities, a project-specific localized air quality analysis shall be conducted during subsequent project-level environmental review to demonstrate compliance with applicable localized significance thresholds. Any measures identified in the analysis and determined necessary to reduce impacts shall be incorporated into the project and implemented.

3.3.1.1 Significance After Mitigation

Because the applicability and effectiveness of mitigation measures identified through project-specific localized air quality analyses cannot be determined at the program level, impacts are conservatively identified as potentially significant for facilities with receptors located closer than 50 meters from construction activities.

IMPACT: Potentially Significant in SCAQMD

3.3.2 Operations

3.3.2.1 Project Design Features and Regulatory Requirements

The following project features and regulatory requirements are incorporated into the representative facility scenarios and were considered in the evaluation of operation-related air quality impacts:

- Project proponents would comply with the Clean Air Act (CAA) and Clean Air Act Amendment (CAAA) [e.g., NSR and Best Available Control Technology (BACT) criteria, if applicable]; and
- Project proponents would comply with local plans, policies, ordinances, rules, and regulations regarding air quality–related emissions and associated exposure (e.g., indirect source review, vehicle idling limitations, and payment into off-site mitigation funds).

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3.3.2.2 Impact Assessment

Air districts are generally responsible for establishing and enforcing local thresholds of significance for projects undergoing CEQA review. For those air districts with adopted, numerical thresholds of significance, these thresholds are developed in consideration of maintaining or achieving attainment under the NAAQS and California Ambient Air Quality Standards (CAAQS), which are concentrations of criteria air pollutants intended to reduce potential human health impacts related to exposure. Projects that demonstrate operational emissions below the appropriate air districts' thresholds of significance would not degrade regional air quality and would thus minimize potential human health impacts.

Operational impacts were evaluated based on the estimated emissions presented in this report and compared against quantitative criteria established by the Bay Area Air District, SJVAPCD, SCAQMD, and SDAPCD (see Tables 3-1 to 3-4). These criteria are relied upon to make significance determinations based on mass emissions of criteria pollutants.

For the SCAQMD, localized air quality impacts were also evaluated. Because specific facility locations and nearby sensitive receptor locations have not been identified, project-specific LST analyses cannot be conducted at the program level. Therefore, the localized air quality analysis applied SCAQMD LSTs using a receptor distance of 50 meters, which is representative of the minimum distance likely to occur between future composting operations and nearest receptors. Five-acre LSTs were used for all scenarios. Because SCAQMD LSTs become less stringent as receptor distance increases, this analysis is conservative for facilities located more than 50 meters from the nearest sensitive receptor. Site-specific localized analyses may be warranted during subsequent project-level environmental review.

Tables 3-11 to 3-16 provide a detailed evaluation of the significance determination for each of the six operating scenarios in each of the four air districts.

Table 3-11: Comparison of Daily Operational Emissions Increases to CEQA Significance Thresholds, Scenario 1

Category	Pollutant					
	NO_x	VOC	CO	SO_x	PM_{10}	$PM_{2.5}$
Net Increase – Bay Area Air District (lb/day)	8.03	1.43	N/A	N/A	0.40	0.34
Bay Area Air District Significance Thresholds (lb/day)[1]	54	54	N/A	N/A	82	54
Significant?	No	No	N/A	N/A	No	No
Net Increase – Bay Area Air District (TPY)	0.81	0.22	N/A	N/A	0.04	0.03
Bay Area Air District Significance Thresholds (TPY)[1]	10	10	N/A	N/A	15	10
Significant?	No	No	N/A	N/A	No	No
Net Increase – SJVAPCD Permitted Sources (TPY)	0.31	0.00	1.67	0.00	0.12	0.05
SJVAPCD Permitted Sources Significance Thresholds (TPY)	10	10	100	27	15	15
Significant?	No	No	No	No	No	No
Net Increase – SJVAPCD Non-Permitted Sources (TPY)	0.50	0.22	3.04	0.01	1.26	0.14

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Category	Pollutant					
	NO_x	VOC	CO	SO_x	PM_{10}	$PM_{2.5}$
SJVAPCD Non-Permitted Sources Significance Thresholds (TPY)	10	10	100	27	15	15
Significant?	No	No	No	No	No	No
Net Increase – SJVAPCD All Sources (lb/day)	8.03	1.43	33.17	0.05	8.95	1.35
SJVAPCD All Sources Significance Thresholds (lb/day)	100	100	100	100	100	100
Significant?	No	No	No	No	No	No
Net Increase – SCAQMD (lb/day)	8.03	112.53	33.17	0.05	8.95	1.35
SCAQMD Significance Thresholds (lb/day)	55	55	550	150	150	55
Significant?	No	Yes	No	No	No	No
Net Increase – SCAQMD (lb/day)	8.03	112.53	33.17	0.05	8.95	1.35
SCAQMD Localized Significance Thresholds (lb/day)[2]	157	N/A	2,331	N/A	12	3
Significant?	No	No	No	No	No	No
Net Increase – SDAPCD (lb/hr)[3]	8.03	N/A	33.17	0.05	N/A	N/A
SDAPCD Screening Threshold Levels (lb/hr)[4]	25	N/A	100	25	N/A	N/A
Significant?	No	No	No	No	No	No
Net Increase – SDAPCD (lb/day)	8.03	112.53	33.17	0.05	8.95	1.35
SDAPCD Screening Threshold Levels (lb/day)[4]	250	75	550	250	100	55
Significant?	No	Yes	No	No	No	No
Net Increase – SDAPCD (TPY)	0.81	20.30	4.71	0.01	1.38	0.19
SDAPCD Screening Threshold Levels (TPY)[4]	40	13.70	100	40	15	10
Significant?	No	Yes	No	No	No	No

[1]Only for PM_{10} and $PM_{2.5}$ from exhaust.

[2]SRA 1 (Central LA), 50-meter receptor distance, 5-acre facility.

[3]Conservatively showing that daily emissions are below hourly screening levels.

[4]Screening levels, not significance levels.

Table 3-12: Comparison of Daily Operational Emissions Increases to CEQA Significance Thresholds, Scenario 2

Category	Pollutant					
	NO_x	VOC	CO	SO_x	PM_{10}	$PM_{2.5}$
Net Increase – Bay Area Air District (lb/day)	7.75	33.93	N/A	N/A	0.39	0.33
Bay Area Air District Significance Thresholds (lb/day)[1]	54	54	N/A	N/A	82	54
Significant?	No	No	N/A	N/A	No	No
Net Increase – Bay Area Air District (TPY)	0.77	5.96	N/A	N/A	0.04	0.03
Bay Area Air District Significance Thresholds (TPY)[1]	10	10	N/A	N/A	15	10
Significant?	No	No	N/A	N/A	No	No
Net Increase – SJVAPCD Permitted Sources (TPY)	0.31	5.75	1.67	0.00	0.12	0.05
SJVAPCD Permitted Sources Significance Thresholds (TPY)	10	10	100	27	15	15

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Category	Pollutant					
	NO_x	VOC	CO	SO_x	PM_{10}	$PM_{2.5}$
Significant?	No	No	No	No	No	No
Net Increase – SJVAPCD Non-Permitted Sources (TPY)	0.45	0.20	2.67	0.00	1.16	0.13
SJVAPCD Non-Permitted Sources Significance Thresholds (TPY)	10	10	100	27	15	15
Significant?	No	No	No	No	No	No
Net Increase – SJVAPCD All Sources (lb/day)	7.75	33.93	30.76	0.05	8.30	1.28
SJVAPCD All Sources Significance Thresholds (lb/day)	100	100	100	100	100	100
Significant?	No	No	No	No	No	No
Net Increase – SCAQMD (lb/day)	7.75	1.30	30.76	0.05	8.30	1.28
SCAQMD Significance Thresholds (lb/day)	55	55	550	150	150	55
Significant?	No	No	No	No	No	No
Net Increase – SCAQMD (lb/day)	7.75	1.30	30.76	0.05	8.30	1.28
SCAQMD Localized Significance Thresholds (lb/day)[2]	157	N/A	2,331	N/A	12	3
Significant?	No	No	No	No	No	No
Net Increase – SDAPCD (lb/hr)[3]	7.75	N/A	30.76	0.05	N/A	N/A
SDAPCD Screening Threshold Levels (lb/hr)[4]	25	N/A	100	25	N/A	N/A
Significant?	No	No	No	No	No	No
Net Increase – SDAPCD (lb/day)	7.75	33.93	30.76	0.05	8.30	1.28
SDAPCD Screening Threshold Levels (lb/day)[4]	250	75	550	250	100	55
Significant?	No	No	No	No	No	No
Net Increase – SDAPCD (TPY)	0.77	5.96	4.34	0.01	1.28	0.18
SDAPCD Screening Threshold Levels (TPY)[4]	40	13.70	100	40	15	10
Significant?	No	No	No	No	No	No

[1]Only for PM_{10} and $PM_{2.5}$ from exhaust.

[2]SRA 1 (Central LA), 50-meter receptor distance, 5-acre facility.

[3]Conservatively showing that daily emissions are below hourly screening levels.

[4]Screening levels, not significance levels.

Table 3-13: Comparison of Daily Operational Emissions Increases to CEQA Significance Thresholds, Scenario 3

Category	Pollutant					
	NO_x	VOC	CO	SO_x	PM_{10}	$PM_{2.5}$
Net Increase – Bay Area Air District (lb/day)	7.75	24.12	N/A	N/A	0.39	0.33
Bay Area Air District Significance Thresholds (lb/day)[1]	54	54	N/A	N/A	82	54
Significant?	No	No	N/A	N/A	No	No
Net Increase – Bay Area Air District (TPY)	0.77	4.17	N/A	N/A	0.04	0.03
Bay Area Air District Significance Thresholds (TPY)[1]	10	10	N/A	N/A	15	10
Significant?	No	No	N/A	N/A	No	No
Net Increase – SJVAPCD Permitted Sources (TPY)	0.31	3.96	1.67	0.00	0.12	0.05

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Category	Pollutant					
	NO_x	VOC	CO	SO_x	PM_{10}	$PM_{2.5}$
SJVAPCD Permitted Sources Significance Thresholds (TPY)	10	10	100	27	15	15
Significant?	No	No	No	No	No	No
Net Increase – SJVAPCD Non-Permitted Sources (TPY)	0.45	0.20	2.67	0.00	1.16	0.13
SJVAPCD Non-Permitted Sources Significance Thresholds (TPY)	10	10	100	27	15	15
Significant?	No	No	No	No	No	No
Net Increase – SJVAPCD All Sources (lb/day)	7.75	24.12	30.76	0.05	8.30	1.28
SJVAPCD All Sources Significance Thresholds (lb/day)	100	100	100	100	100	100
Significant?	No	No	No	No	No	No
Net Increase – SCAQMD (lb/day)	7.75	24.12	30.76	0.05	8.30	1.28
SCAQMD Significance Thresholds (lb/day)	55	55	550	150	150	55
Significant?	No	No	No	No	No	No
Net Increase – SCAQMD (lb/day)	7.75	24.12	30.76	0.05	8.30	1.28
SCAQMD Localized Significance Thresholds (lb/day)[2]	157	N/A	2,331	N/A	12	3
Significant?	No	No	No	No	No	No
Net Increase – SDAPCD (lb/hr)[3]	7.75	N/A	30.76	0.05	N/A	N/A
SDAPCD Screening Threshold Levels (lb/hr)[4]	25	N/A	100	25	N/A	N/A
Significant?	No	No	No	No	No	No
Net Increase – SDAPCD (lb/day)	7.75	24.12	30.76	0.05	8.30	1.28
SDAPCD Screening Threshold Levels (lb/day)[4]	250	75	550	250	100	55
Significant?	No	No	No	No	No	No
Net Increase – SDAPCD (TPY)	0.77	4.17	4.34	0.01	1.28	0.18
SDAPCD Screening Threshold Levels (TPY)[4]	40	13.70	100	40	15	10
Significant?	No	No	No	No	No	No

[1]Only for PM_{10} and $PM_{2.5}$ from exhaust.

[2]SRA 1 (Central LA), 50-meter receptor distance, 5-acre facility.

[3]Conservatively showing that daily emissions are below hourly screening levels.

[4]Screening levels, not significance levels.

Table 3-14: Comparison of Daily Operational Emissions Increases to CEQA Significance Thresholds, Scenario 4

Category	Pollutant					
	NO_x	VOC	CO	SO_x	PM_{10}	$PM_{2.5}$
Net Increase – Bay Area Air District (lb/day)	14.60	3.30	N/A	N/A	0.67	0.55
Bay Area Air District Significance Thresholds (lb/day)[1]	54	54	N/A	N/A	82	54
Significant?	No	No	N/A	N/A	No	No
Net Increase – Bay Area Air District (TPY)	1.83	0.51	N/A	N/A	0.08	0.06
Bay Area Air District Significance Thresholds (TPY)[1]	10	10	N/A	N/A	15	10

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Category	Pollutant					
	NO_x	VOC	CO	SO_x	PM_{10}	$PM_{2.5}$
Significant?	No	No	N/A	N/A	No	No
Net Increase – SJVAPCD Permitted Sources (TPY)	0.55	0.00	5.05	0.01	0.27	0.10
SJVAPCD Permitted Sources Significance Thresholds (TPY)	10	10	100	27	15	15
Significant?	No	No	No	No	No	No
Net Increase – SJVAPCD Non-Permitted Sources (TPY)	1.28	0.51	7.92	0.01	3.25	0.37
SJVAPCD Non-Permitted Sources Significance Thresholds (TPY)	10	10	100	27	15	15
Significant?	No	No	No	No	No	No
Net Increase – SJVAPCD All Sources (lb/day)	14.60	3.30	86.09	0.14	22.62	3.09
SJVAPCD All Sources Significance Thresholds (lb/day)	100	100	100	100	100	100
Significant?	No	No	No	No	No	No
Net Increase – SCAQMD (lb/day)	14.60	278.91	86.09	0.14	22.62	3.09
SCAQMD Significance Thresholds (lb/day)	55	55	550	150	150	55
Significant?	No	Yes	No	No	No	No
Net Increase – SCAQMD (lb/day)	14.60	278.91	86.09	0.14	22.62	3.09
SCAQMD Localized Significance Thresholds (lb/day)[2]	157	N/A	2,331	N/A	12	3
Significant?	No	No	No	No	Yes	Yes
Net Increase – SDAPCD (lb/hr)[3]	14.60	N/A	86.09	0.14	N/A	N/A
SDAPCD Screening Threshold Levels (lb/hr)[4]	25	N/A	100	25	N/A	N/A
Significant?	No	No	No	No	No	No
Net Increase – SDAPCD (lb/day)	14.60	3.30	86.09	0.14	22.62	3.09
SDAPCD Screening Threshold Levels (lb/day)[4]	250	75	550	250	100	55
Significant?	No	No	No	No	No	No
Net Increase – SDAPCD (TPY)	1.83	0.51	12.97	0.02	3.53	0.47
SDAPCD Screening Threshold Levels (TPY)[4]	40	13.70	100	40	15	10
Significant?	No	No	No	No	No	No

[1]Only for PM_{10} and $PM_{2.5}$ from exhaust.

[2]SRA 1 (Central LA), 50-meter receptor distance, 5-acre facility.

[3]Conservatively showing that daily emissions are below hourly screening levels.

[4]Screening levels, not significance levels.

Table 3-15: Comparison of Daily Operational Emissions Increases to CEQA Significance Thresholds, Scenario 5

Category	Pollutant					
	NO_x	VOC	CO	SO_x	PM_{10}	$PM_{2.5}$
Net Increase – Bay Area Air District (lb/day)	13.90	2.97	N/A	N/A	0.65	0.53

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Category	Pollutant					
	NO_x	VOC	CO	SO_x	PM_{10}	$PM_{2.5}$
Bay Area Air District Significance Thresholds (lb/day)[1]	54	54	N/A	N/A	82	54
Significant?	No	No	N/A	N/A	No	No
Net Increase – Bay Area Air District (TPY)	1.73	0.46	N/A	N/A	0.08	0.06
Bay Area Air District Significance Thresholds (TPY)[1]	10	10	N/A	N/A	15	10
Significant?	No	No	N/A	N/A	No	No
Net Increase – SJVAPCD Permitted Sources (TPY)	0.55	0.00	5.05	0.01	0.27	0.10
SJVAPCD Permitted Sources Significance Thresholds (TPY)	10	10	100	27	15	15
Significant?	No	No	No	No	No	No
Net Increase – SJVAPCD Non-Permitted Sources (TPY)	1.18	0.46	6.98	0.01	3.00	0.34
SJVAPCD Non-Permitted Sources Significance Thresholds (TPY)	10	10	100	27	15	15
Significant?	No	No	No	No	No	No
Net Increase – SJVAPCD All Sources (lb/day)	13.90	2.97	80.07	0.13	21.00	2.91
SJVAPCD All Sources Significance Thresholds (lb/day)	100	100	100	100	100	100
Significant?	No	No	No	No	No	No
Net Increase – SCAQMD (lb/day)	13.90	2.97	80.07	0.13	21.00	2.91
SCAQMD Significance Thresholds (lb/day)	55	55	550	150	150	55
Significant?	No	No	No	No	No	No
Net Increase – SCAQMD (lb/day)	13.90	2.97	80.07	0.13	21.00	2.91
SCAQMD Localized Significance Thresholds (lb/day)[2]	157	N/A	2,331	N/A	12	3
Significant?	No	No	No	No	Yes	No
Net Increase – SDAPCD (lb/hr)[3]	13.90	N/A	80.07	0.13	N/A	N/A
SDAPCD Screening Threshold Levels (lb/hr)[4]	25	N/A	100	25	N/A	N/A
Significant?	No	No	No	No	No	No
Net Increase – SDAPCD (lb/day)	13.90	82.43	80.07	0.13	21.00	2.91
SDAPCD Screening Threshold Levels (lb/day)[4]	250	75	550	250	100	55
Significant?	No	Yes	No	No	No	No
Net Increase – SDAPCD (TPY)	1.73	14.75	12.03	0.02	3.27	0.44
SDAPCD Screening Threshold Levels (TPY)[4]	40	13.70	100	40	15	10
Significant?	No	Yes	No	No	No	No

[1]Only for PM_{10} and $PM_{2.5}$ from exhaust.

[2]SRA 1 (Central LA), 50-meter receptor distance, 5-acre facility.

[3]Conservatively showing that daily emissions are below hourly screening levels.

[4]Screening levels, not significance levels.

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Table 3-16: Comparison of Daily Operational Emissions Increases to CEQA Significance Thresholds, Scenario 6

Category	Pollutant					
	NO_x	VOC	CO	SO_x	PM_{10}	$PM_{2.5}$
Net Increase – Bay Area Air District (lb/day)	13.90	57.90	N/A	N/A	0.65	0.53
Bay Area Air District Significance Thresholds (lb/day)[1]	54	54	N/A	N/A	82	54
Significant?	No	Yes	N/A	N/A	No	No
Net Increase – Bay Area Air District (TPY)	1.73	10.28	N/A	N/A	0.08	0.06
Bay Area Air District Significance Thresholds (TPY)[1]	10	10	N/A	N/A	15	10
Significant?	No	Yes	N/A	N/A	No	No
Net Increase – SJVAPCD Permitted Sources (TPY)	0.55	9.82	5.05	0.01	0.27	0.10
SJVAPCD Permitted Sources Significance Thresholds (TPY)	10	10	100	27	15	15
Significant?	No	No	No	No	No	No
Net Increase – SJVAPCD Non-Permitted Sources (TPY)	1.18	0.46	6.98	0.01	3.00	0.34
SJVAPCD Non-Permitted Sources Significance Thresholds (TPY)	10	10	100	27	15	15
Significant?	No	No	No	No	No	No
Net Increase – SJVAPCD All Sources (lb/day)	13.90	57.90	80.07	0.13	21.00	2.91
SJVAPCD All Sources Significance Thresholds (lb/day)	100	100	100	100	100	100
Significant?	No	No	No	No	No	No
Net Increase – SCAQMD (lb/day)	13.90	2.97	80.07	0.13	21.00	2.91
SCAQMD Significance Thresholds (lb/day)	55	55	550	150	150	55
Significant?	No	No	No	No	No	No
Net Increase – SCAQMD (lb/day)	13.90	2.97	80.07	0.13	21.00	2.91
SCAQMD Localized Significance Thresholds (lb/day)[2]	157	N/A	2,331	N/A	12	3
Significant?	No	No	No	No	Yes	No
Net Increase – SDAPCD (lb/hr)[3]	13.90	N/A	80.07	0.13	N/A	N/A
SDAPCD Screening Threshold Levels (lb/hr)[4]	25	N/A	100	25	N/A	N/A
Significant?	No	No	No	No	No	No
Net Increase – SDAPCD (lb/day)	13.90	57.90	80.07	0.13	21.00	2.91
SDAPCD Screening Threshold Levels (lb/day)[4]	250	75	550	250	100	55
Significant?	No	No	No	No	No	No
Net Increase – SDAPCD (TPY)	1.73	10.28	12.03	0.02	3.27	0.44
SDAPCD Screening Threshold Levels (TPY)[4]	40	13.70	100	40	15	10
Significant?	No	No	No	No	No	No

[1]Only for PM_{10} and $PM_{2.5}$ from exhaust.

[2]SRA 1 (Central LA), 50-meter receptor distance, 5-acre facility.

[3]Conservatively showing that daily emissions are below hourly screening levels.

[4]Screening levels, not significance levels.

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Although there would be substantial reductions in air emissions from landfills due to the diversion of organic waste to composting, because emissions of air pollutants from the operation of new organic waste recovery facilities exceed the screening thresholds of significance in the Bay Area Air District, SCAQMD, and SDAPCD, operational-related air quality impacts would be potentially significant in these air districts for several of the operating scenarios. Table 3-17 summarizes the significance determinations for the six operating scenarios and four air districts.

Table 3-17: Summary of Significance Determination for Six Scenarios in Four Air Districts

Air District	Small Facilities			Medium Facilities		
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
	Windrows	Positive CASP	Negative ASP with Filter	Windrows	Positive CASP	Negative ASP with Filter
Bay Area Air District	LTS	LTS	LTS	LTS	LTS	PS
SJVAPCD	LTS	LTS	LTS	LTS	LTS	LTS
SCAQMD	PS	LTS	LTS	PS	PS	PS
SDAPCD	PS	LTS	LTS	LTS	PS	LTS

IMPACT: Less Than Significant in SJVAPCD

IMPACT: Potentially Significant in the Bay Area Air District, SCAQMD and SDAPCD

VOC significance threshold exceedances were identified for Small Windrow facilities in the SCAQMD and SDAPCD, Medium Windrow facilities in the SCAQMD, Medium Positive CASP facilities in the SDAPCD, and Medium Negative ASP with Filter facilities in the Bay Area Air District. LST screening level exceedances were also identified in the SCAQMD for Medium Windrow, Positive CASP, and Negative ASP with Filter facilities.

3.3.2.3 Mitigation Measures

For representative facility scenarios that exceed applicable VOC significance thresholds and/or LST screening levels, the following project-level measures shall be required during subsequent environmental review to reduce emissions and demonstrate compliance with applicable air quality significance thresholds:

- Future projects exceeding applicable VOC significance thresholds shall implement feasible VOC reduction measures identified in consultation with the applicable air district or Lead Agency. Such measures may include participation in voluntary air district emission reduction programs, implementation of additional emission controls (e.g., upgrading from a windrow design to an ASP design), acquisition of additional emission reduction credits (over and above what is required by regulation), or other air-district-approved measures sufficient to reduce VOC emissions; and

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- For facilities in SCAQMD with the potential to exceed applicable LST screening levels or for new composting facilities with receptors located within 50 meters of operational emission sources, project-specific air quality analyses, including refined dispersion modeling as appropriate, shall be conducted during subsequent project-level environmental review to demonstrate compliance with applicable air quality significance thresholds.

Any measures identified through the analysis and determined necessary to reduce impacts shall be incorporated into the project and implemented.

3.3.2.4 Significance After Mitigation

Because the effectiveness and applicability of project-specific analyses and VOC mitigation measures cannot be determined at the program level, impacts are conservatively identified as Potentially Significant for the representative scenarios exceeding applicable thresholds.

IMPACT: Potentially Significant in the Bay Area Air District, SCAQMD, and SDAPCD

3.3.3 Transportation/CO "Hot Spots"

Local mobile-source carbon monoxide (CO) emissions near roadway intersections are a direct function of traffic volume, speed, and delay. As a pollutant that disperses rapidly under normal meteorological conditions, CO emissions produce localized impacts. However, under certain meteorological conditions, CO concentrations near roadways and/or intersections may increase to unhealthy levels at nearby sensitive land uses, such as residential units, hospitals, schools, and childcare facilities. As a result, air districts typically recommend that CO be analyzed at the local level rather than the regional level.

The proposed projects could result in an increase in vehicle travel related to the movement of organics to organic waste recovery facilities; however, vehicle travel would be distributed Statewide. It is also anticipated that vehicle travel to local landfills would decline as a result of the Project. Due to the small size of these facilities, which require relatively few truck trips for feedstock and compost delivery and limited employment, the additional vehicle trips per hour on local roads are not expected to result in a substantial increase in CO concentrations resulting in adverse impacts compared to existing baseline conditions.

Additionally, the efficacy of catalytic converters in internal combustion engines has substantially reduced emissions of CO, as compared to previous internal combustion engines. Other technological improvements, including the use of on-board computers, as well as inspection requirements, have further reduced CO emissions. CO emissions will continue to decline as Statewide programs transition the transportation sector to electric vehicles that do not emit CO. (CalRecycle 2019: pg. 3.3-32)

IMPACT: Less Than Significant

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3.4 Would the Project Expose Sensitive Receptors to Substantial Pollutant Concentrations?

3.4.1 Construction

Construction of the representative facility scenarios is expected to occur over a period of less than 1 year. Construction-related emissions would be short-term and temporary and would not result in long-term exposure. Construction-related TAC impacts would be Less Than Significant.

IMPACT: Less Than Significant

3.4.2 Operations

3.4.2.1 Impact Analysis

To assess the potential health risks from a project to sensitive receptors, the TAC emissions from the project are assessed in accordance with CARB HRA guidelines. This analysis is based on the Office of Environmental Health Hazard Assessment (OEHHA) "Hot Spot" guidance document (OEHHA 2015) and the California Air Pollution Control Officers Association (CAPCOA) "Air Toxics 'Hot Spots' Program Facility Prioritization Guidelines" (CAPCOA 2016).

The CAPCOA prioritization guidelines outline a technique for calculating a Prioritization Score that helps districts identify priority facilities for risk assessment, which involves consideration of TAC potency, toxicity, quantity of emissions, and proximity to sensitive receptors, such as hospitals, schools, daycare centers, worksites, and residences.

Prioritization Scores were calculated using the Emissions and Potency Procedure in the CAPCOA's guidelines. Emission data are combined with applicable OEHHA health values and receptor distance adjustment factors to calculate separate Prioritization Scores for residential cancer, worker cancer, chronic non-cancer, and acute non-cancer risk. The worker cancer Prioritization Score was calculated using the SDAPCD method of applying a 0.3 factor to the residential cancer Prioritization Score.

- Residential Cancer Risk: Evaluates health risk from lifetime exposure to emissions at residential and sensitive receptor locations. Sensitive receptors include hospitals, K-12 schools, daycare centers, and elder care facilities. Residential cancer risk is typically assessed using a 30-year exposure duration.
- Worker Cancer Risk: Evaluates health risk from long-term exposure to individuals at long-term business locations. Worker cancer risk is typically assessed using a 25-year exposure duration.
- Chronic Risk: Evaluates health risk from long-term (1-year) exposure to emissions. Chronic receptors include locations where an individual could reasonably be expected to spend time over the better part of the year.
- Acute Risk: Evaluates health risk from short-term (1-hour) exposure to emissions. Acute receptors include any location where an individual could reasonably be present for at least 1 hour during a day.

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TAC emissions were calculated using the methodology outlined in Section 2, with detailed calculations provided in Attachment 2. TAC emission sources include the DPM emissions from the diesel engines used to screen and grind waste materials and compost, on-road haul trucks, and off-road mobile equipment (e.g., loaders), and NH_3 and organic TACs from composting activities, and toxic components of dust from material handling activities.

To assess the potential health risk from the six operating scenarios, Prioritization Scores were calculated at various receptor distances using the TAC emissions estimated for that scenario. Additionally, receptor distances were back-calculated for each scenario to determine the minimum distances at which the facility would be classified as high, intermediate, or low priority based on the applicable Prioritization Score thresholds. Results by scenario and distance are presented in Attachment 3 with detailed calculations.

Each air district sets their Prioritization Score thresholds and these should be used for Project-specific evaluation. Table 3-18 summarizes the thresholds for the four districts reviewed.

Table 3-18: Prioritization Score Thresholds

Air District	Prioritization Score Threshold Category	Prioritization Score Cancer Risk Thresholds	Prioritization Score Chronic/Acute Risk Threshold	Significance Threshold Category
Bay Area Air District, SJVAPCD, and SCAQMD	High	≥10	≥10	PS
	Intermediate	≥1 and <10	≥1 and <10	PS
	Low	<1	<1	LTS
SDAPCD	High	≥100	≥10	PS
	Intermediate	≥1 and <100	≥1 and <10	PS
	Low	<1	<1	LTS

The significance of the thresholds are described below:

- High Score: Projects having a high Prioritization Score may have high risk. A refined HRA is recommended to determine if a Project's TAC emissions would have significant health risk impacts. Thus, this score is considered to have a Potentially Significant human health impact and would necessitate a more detailed analysis for a project-level CEQ review.
- Intermediate Score: Projects with an intermediate prioritization score, may require further analysis to determine if the Project's TAC emissions would have significant health risk impacts. Many air districts consider projects with an intermediate Prioritization Score to be unlikely to have an adverse health risk, although some districts may require additional analysis. Consultation with the local air district or lead agency would be required to determine if the Project's TAC emissions have a less than significant human health impact. Therefore, this score is considered to have a Potentially Significant impact on human health and would necessitate a more detailed analysis for a project-level CEQ review.

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- Low Score: Projects with a low prioritization score are unlikely to have an adverse health risk, thus are considered to have a Less Than Significant human health impact.

In cases where the TAC emission thresholds are exceeded, Project proponents should conduct HRA modeling pursuant to the most recent guidance published by OEHHA. The HRA should incorporate TAC emissions from the proposed TAC sources, including mobile and stationary sources. The HRA modeling estimates the Project-related residential and worker cancer risk, and chronic and acute non-cancer risks. These risks should be compared to the applicable HRA thresholds, such as those outlined in Tables 3-1 through 3-4.

Table 3-19 summarizes the minimum distances to residential and worker receptors required to achieve a Less Than Significant impact for each scenario. These distances were determined using the Prioritization Score calculation methodology and the low priority score threshold of Less Than Significant, which is the same across all air districts evaluated (the Bay Area Air District, SJVAPCD, SCAQMD, and SDAPCD), as well as most other districts.

For example, under Scenario 1, if there are no residential receptors within 666 meters, or worker receptors within 365 meters of the facility, the Project would be considered to have a Less Than Significant impact. If there are residential receptors within 666 meters, or worker receptors within 365 meters, the Project would be considered to have a Potentially Significant impact. The same interpretation applies to the remaining scenarios using the corresponding distances shown in the table. A more comprehensive analysis for each scenario is provided in Attachment 3.

Table 3-19: Minimum Distances to Residential and Worker Receptors for Less Than Significant Impact by Scenario for Four Air Districts

Scenario	Minimum Distance to Residential Receptors for Less Than Significant Impact (meters)	Minimum Distance to Worker Receptors for Less Than Significant Impact (meters)
1	666	365
2	581	318
3	571	313
4	996	546
5	851	466
6	835	457

Note: Residential and worker receptor distances correspond to the residential cancer risk and worker cancer risk thresholds, respectively. For all scenarios, the calculated acute and chronic non-cancer risk distances were less than the corresponding cancer risk distances; therefore, cancer risk is the limiting criterion. Compliance with the cancer risk distance also ensures compliance with the acute and chronic non-cancer risk distance thresholds.

IMPACT: Potentially Significant

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3.4.2.2 Mitigation Measures

Any project that does not have the set-back distance to a sensitive receptor shown in Table 3-19 would require a Project-specific HRA to determine impacts. If the HRA modeling determines a Project has a Potentially Significant impact, mitigation measures could be implemented to avoid or minimize impacts from operation-related TAC emissions. The following are operation-related mitigation measures that are typically applied to projects on-site to reduce TAC emissions (CalRecycle 2019: pg. 3.3-27):

- Project proponents shall install diesel particulate filters or implement other CARB-verified diesel emission control strategies for heavy-duty equipment;
- Project proponents shall apply U.S. EPA Tier 3 or 4 emissions standards to off-road heavy-duty equipment;
- Project proponents shall use haul trucks with on-road engines instead of off-road engines for on-site hauling;
- Project proponents shall establish an electricity supply and use electric-powered equipment instead of diesel-powered equipment, if feasible;
- Project proponents shall apply on-road diesel PM mitigation measures consistent with CARB's Diesel Certification Program; and
- Project proponents shall utilize renewable natural gas to power on-road vehicles accessing future Project sites.

3.4.2.3 Significance After Mitigation

It is reasonable to expect that impacts would be reduced to a Less-Than-Significant level by land use and/or permitting agency conditions of approval; the degree to which another agency would require mitigation is uncertain. Although, for CEQA-compliance purposes, if the HRA modeling is above the thresholds, the Project-related TAC emissions could be Potentially Significant.

IMPACT: Potentially Significant

3.5 Would the Project Result in Other Emissions (Such as Those Leading to Odors Adversely Affecting a Substantial Number of People)?

3.5.1 Construction

Construction activities are not a substantial source of objectionable odors. Temporary exhaust emissions from construction equipment may be noticeable in the immediate vicinity of active construction areas, but such emissions would be localized and short-term in duration. Accordingly, construction-related odor impacts would be Less Than Significant.

IMPACT: Less Than Significant

3.5.2 Operations

Composting facilities have the potential to generate objectionable odors associated with feedstock handling, active composting, curing, screening, product storage, and other operational activities. The magnitude of potential odor impacts depends on facility size,

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composting technology, operating practices, meteorological conditions, and the proximity of sensitive receptors. Best Management Practices (BMPs) for composting operations would help to minimize odor impacts. These measures may be incorporated into permit conditions by the air districts for permitted facilities, into the Odor Impact Minimization Plan (OIMP), implemented voluntarily by a facility as a BMP to minimize odor impacts, or required as CEQA mitigation. BMPs include the following:

- Site selection: Odor impacts can be minimized by ensuring that the site selected for a new compost facility is sufficiently distant from potential receptors. The SJVAPCD GAMAQI recommends a setback distance of 1 mile for a compost facility from potential receptors (SJVAPCD 2015a), which may be unreasonable for many potential compost sites. The GAMAQI has applied that setback distance for several decades, beginning when windrow technology dominated the composting industry, pre-dating modern ASP composting techniques. A modern ASP compost facility will typically have 80% lower emission levels than a comparably sized windrow facility. Accordingly, a 1-mile setback distance may be appropriate for a windrow facility, but is likely unnecessary for an ASP facility. In its Rule 1133 staff report, the SCAQMD recommends a 1/4-mile setback distance (SCAQMD 2011), which would be more appropriate for an ASP facility.
- Feedstock storage limitation: Although feedstock composition can determine odor to a large extent, management practices can also have a large impact, and in some cases mitigate odor production.
  - Offensive odors from manure, food, and liquid waste can be minimized by incorporating the waste into a compost pile on the same day they are received.
  - Limiting feedstock storage of greenwaste and biosolids prior to introducing the material into the compost pile will reduce the occurrence of decomposition, reducing emissions and odors. The BACT standard in air districts that impose permit requirements on feedstock storage is two days.
- Develop a compost blend to optimize conditions:
  - Balancing the carbon and nitrogen of the initial feedstock, and mixing different types of organic material in quantities to achieve a carbon to nitrogen ratio at a range between 20:1 to 40:1;
  - Ensuring particle size is large enough to allow airflow. This can be accomplished by blending woodchips into dense feedstocks.
  - Add water to the feedstock, as needed, to maintain a moisture content between 40% to 60%.
- Well-constructed, properly aerated static compost piles produce fewer odors.
  - Forcing air through the piles, using either a positive aeration system (pushing air up through the pile) or negative aeration system (pulling air down through the pile) maintains aerobic conditions within the piles.

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- Turning or aerating a windrow at a frequency to maintain a center pile temperature between 110°F to 140°F or an oxygen content greater than 5% will minimize odor emissions.

- Covering piles using breathable fabrics (e.g., the Gore® system) or a finished compost biofilter layer reduces odors as well as VOCs and NH_3 emissions from the piles. The finished compost biofilter layer on compost piles for a positively aerated CASP, or a fixed bed biofilter (mulch, engineered fill, or other binding material) for negatively aerated ASP, further reduces emissions.
- Ensure that the biofilter layer (positive aeration) or the fixed bed biofilter (negative aeration) is properly wetted at all times using a sprinkler system.
- Aerate water retention basins to reduce the occurrence of strong odors. (CIWMB 2007, pgs. 27-38)

Future facilities would be subject to applicable local plans, policies, regulations, and development standards, including any applicable setbacks or buffer zones for potentially odorous operations, as part of project approval and environmental review processes.

While proper site selection, implementation of the required OIMP, and adoption of the appropriate BMPs (either required by permit conditions or adopted voluntarily), odor impacts would generally be expected to reduce odor impacts to a less-than-significant level, future facility locations, operational characteristics, proximity to sensitive receptors, and the need for and effectiveness of site-specific odor control measures cannot be determined at the program level. Therefore, the potential for significant odor impacts cannot be ruled out for all future facilities, and odor impacts are conservatively considered potentially significant.

IMPACT: Potentially Significant

4.0 GREENHOUSE GASES

4.1 Significance Thresholds

Project GHG emissions would be evaluated against the thresholds shown in Table 4-1.

Table 4-1: GHG Significance Thresholds

Air District	Significance Threshold
Bay Area Air District	▪ Consistent with applicable Statewide GHG reduction plans, regulations, and targets; and ▪ Implement project's "fair share" of GHG reductions necessary to achieve Statewide climate goals
SJVAPCD	▪ Implement BPS; and ▪ Reduce Project GHG Emission by 29% over Business as Usual
SCAQMD	▪ 10,000 MT/yr CO_2e for industrial facilities
SDAPCD	▪ Climate Action Plan consistency

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4.2 Would the Project Generate GHG Emissions, Either Directly or Indirectly, That May Have a Significant Impact on the Environment?

4.2.1 Construction GHGs

Construction-related GHG emissions, summarized in Section 2.1 (Table 2-2), do not represent a long-term source of emissions because they occur over a finite construction period. When amortized over the expected life of the facilities, construction-related GHG emissions would represent a relatively small contribution to total Project emissions and impacts would be less than significant.

4.2.2 Operations GHGs

GHGs are emitted from mobile sources, such as on-road vehicles and off-road equipment, burning fuels, such as gasoline, diesel, biodiesel, propane, or natural gas (compressed or liquefied). Indirect GHG emissions result from electric power generated elsewhere (i.e., power plants) used to operate process equipment, lighting, and utilities at a facility. Also included in a GHG evaluation is electric power used to pump the water supply (e.g., aqueducts, wells, and pipelines) and disposal and decomposition of waste in landfills. Operational GHG emissions may occur due to the fuel combustion in off-road equipment (e.g., front-end loaders and forklifts) used to manage wastes on-site, fuel combustion in haul trucks used to deliver organic feedstock to the facility and delivery compost to the customer, and fuel use to haul wastes or byproducts (e.g., mulch) to recycling, recovery, or disposal facilities.

However, diversion of organic waste from landfills to composting facilities will result in a net decrease in GHG emissions. Organic wastes decompose in landfills to form CH_4, a potent GHG. Although most landfills have landfill gas collection systems which collect and combust CH_4, a portion of the CH_4 (as much as 25% of the CH_4 produced) is emitted from landfills as fugitive emissions. By diverting organic waste from landfill to composting, those fugitive CH_4 emissions are avoided. The net GHG emission reductions are summarized in Table 2-16.

Implementing the proposed Projects would also displace some amount of petroleum-based fertilizers as compost materials become increasingly available. Over the past decade, the average annual amount of petroleum-derived nitrogen fertilizer purchased for use in California was approximately 600,000 tons. The application of these fertilizers is a notable contributor to global emissions of nitrogen dioxide (NO_2), which, according to the Intergovernmental Panel on Climate Change's (IPCC's) most recent estimates, has a Global Warming Potential (GWP) of 265 over a 100-year time horizon. Moreover, the production of nitrogen-rich fertilizers requires the combustion of natural gas. To produce, transport, and apply 1 ton of nitrogen fertilizer requires an amount of energy equal to almost 2 tons of gasoline. Compost materials generated under the proposed Project would reduce overall reliance on petroleum-based fertilizers.

The proposed Project facilitates GHG emission reductions by facilitating landfill diversion, providing an alternative to petroleum-based fertilizers, and sequestering carbon in the soil. Because there will be a net reduction in GHG with the Project compared to baseline, business-as-usual disposal practices for the organic waste, the Project will have a Less-Than Significant impact for this criteria (CalRecycle 2019: pg. 3.8-11).

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IMPACT: Less Than Significant

4.3 Would the Project Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing the Emissions of GHGs?

One of the primary objectives of the Project is to reduce the disposal of organic waste in landfills. Construction and operation of new or expanded organic waste recovery facilities is identified and evaluated in the California Short-Lived Climate Pollutant (SLCP) Reduction Strategy in addition to other CH_4-reducing measures. Organic waste recovery facilities (e.g., composting) would reduce fugitive CH_4 emissions, as well as emissions of VOCs that would otherwise be emitted from a landfill.

Diversion of organic waste from landfills to composting facilities will result in a net decrease in GHG emissions, as shown in Table 2-16. Improved soil health and carbon sequestration potential would also be achieved from the use of compost product. The compost materials generated from composting activities would contain the necessary soil amendments to enhance the efficiency of the carbon cycle, which would allow for the sequestering of carbon from the atmosphere in soil. Compost materials would be applied throughout the natural and working lands sector and consistent with the *Draft 2030 Natural and Working Lands Climate Change Implementation Plan* and *2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) and help the State meet its long-term GHG emission reduction targets.

The actions included in these projects are consistent with the direction provided in the SLCP Reduction Strategy. The compost projects would not interfere with the goals of the plan. The proposed Project does not impede the implementation of any applicable GHG reduction measures and, in fact, facilitates GHG reduction measures by helping to divert waste from landfills. In addition, the Project is consistent with the GHG reduction strategies outlined in CARB's 2022 Scoping Plan.

The net GHG emissions are summarized in Table 2-16. Diversion of organic waste from landfills to composting facilities will result in a net decrease in GHG emissions. The proposed Project does not impede the implementation of any applicable GHG reduction measures and, in fact, facilitates GHG reduction measures by helping to divert waste from landfills. In addition, the Project is consistent with the GHG reduction strategies outlined in CARB's 2022 Scoping Plan.

Proposed projects will be compliant with applicable Best Performance Standards (BPSs), implement additional feasible reduction strategies, be consistent with adopted GHG reduction plans, and implement operational efficiencies. Proposed projects support the goals of applicable GHG reduction plans and policies, such as the CARB 2022 Scoping Plan, by incorporating energy-efficient equipment, diverting waste from landfills, minimizing vehicle trips through routing strategies, and not impeding implementation of any GHG reduction measures (CalRecycle 2019: pgs. 3.8-10,11 and 3.8-15,16,17,18).

IMPACT: Less Than Significant

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ATTACHMENT 1 – CALEEMOD CONSTRUCTION EMISSIONS

The attachments to this report are available upon request. If you would like to view the modeling outputs, please contact Jeffery Esquivel at Jeffery.Esquivel@calrecycle.ca.gov.

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ATTACHMENT 2 – MOBILE AND STATIONARY SOURCES OPERATIONAL EMISSIONS

The attachments to this report are available upon request. If you would like to view the modeling outputs, please contact Jeffery Esquivel at Jeffery.Esquivel@calrecycle.ca.gov.

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ATTACHMENT 3 – HEALTH RISK ASSESSMENT

The attachments to this report are available upon request. If you would like to view the modeling outputs, please contact Jeffery Esquivel at Jeffery.Esquivel@calrecycle.ca.gov.

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Appendix C

Energy Technical Report

NCE has made every effort to provide this report and all associated information in an accessible format. If you need the appendices in an alternative format please contact Jeffrey Esquivel, (916) 341-6337, jeffery.esquivel@calrecycle.ca.gov.

Energy Impact Study for Small/Medium Composting Project Permitting

California Department of Resources Recycling and Recovery

P.O. Box 4025
Sacramento, CA 95812

August 2026

Prepared by:

Yorke® ENGINEERING, LLC
www.YorkeEngr.com

Office Locations:
Los Angeles, Orange County,
Long Beach, Riverside, Ventura, San Diego,
Fresno, Merced, Berkeley, San Francisco

Tel: (949) 248-8490
Fax: (949) 248-8499

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Prepared for:

California Department of Resources Recycling and Recovery
P.O. Box 4025
Sacramento, CA 95812

August 2026

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Attachments

ATTACHMENT 1 – PROPOSED PROJECT ENERGY REQUIREMENTS CALCULATION WORKSHEETS

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List of Acronyms and Abbreviations

ASP	Aerated Static Pile
BHP	Brake Horsepower
BSFC	Brake-Specific Fuel Consumption
BTS	Bureau of Transportation Statistics
Btu	British Thermal Unit
CalEEMod	California Emissions Estimator Model®
CalRecycle	California Department of Resources Recycling and Recovery
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CASP	Covered Aerated Static Pile
CDTFA	California Department of Tax and Fee Administration
CEC	California Energy Commission
cy	Cubic Yard
DOE	Department of Energy
EPA	[United States] Environmental Protection Agency
Gal	Gallon
GHG	Greenhouse Gas
GVWR	Gross Vehicle Weight Rating
GWh	Gigawatt Hour
HP	Horsepower
HP-hr	Horsepower-Hour
kW	Kilowatt
kW-hr	Kilowatt Hour
lb	Pound
LDA	Light-Duty Auto
LHD2	Light Heavy-Duty 2
MMBtu	Million British Thermal Unit
PEIR	Program Environmental Impact Report
SB	Senate Bill
TPY	Tons per Year
yr	Year

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Energy Impact Study for Small/Medium Composting Project Permitting

1.0 INTRODUCTION

1.1 Project Overview

The California Department of Resources Recycling and Recovery (CalRecycle) is preparing a Program Environmental Impact Report (PEIR) pursuant to Senate Bill (SB) 1046 to facilitate the permitting and development of small and medium compostable material handling facilities and operations throughout California. The PEIR is designed to support implementation of SB 1383 by increasing California's capacity to process organic waste diverted from landfills through the development of additional composting facilities throughout the State. Implementation of SB 1046 would result in the construction and operation of new small and medium composting facilities that process agricultural, food, and green materials.

1.2 Purpose and Objectives

This technical report provides the energy impact analyses prepared in support of the PEIR for the CalRecycle Small and Medium Composting Facilities Program. Yorke estimated energy requirements for three representative small compost facilities and three representative medium compost facilities and evaluated the potential for inefficient, wasteful, or unnecessary consumption of energy associated with construction and operation of representative composting facility scenarios developed for the program. This report contains:

- A description of the representative facility scenarios and analysis assumptions;
- An evaluation of construction energy consumption;
- An evaluation of operational energy demand; and
- An assessment of the program's consistency with applicable energy conservation requirements and policies.

1.3 Project Location

The program area encompasses the entire State of California. The program is intended to facilitate the development and operation of new small and medium compostable material handling facilities and operations; however, specific facility locations have not been identified.

1.4 Facility Operations and Project Description

The Statewide program would facilitate the development and operation of small and medium compostable material handling facilities that process agricultural, vegetative food, green, and other organic materials. As defined by SB 1046, small facilities, which are anticipated to occupy approximately 5 acres, would process up to 10,000 tons per year (TPY) of material and would have an on-site capacity of up to 5,000 cubic yards (cy). Medium facilities, which are expected to occupy approximately 11 acres, would process up to 25,000 TPY of material and would have an on-site capacity of 5,000 to 12,500 cy.

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Composting operations typically involve feedstock receiving and preparation, active composting, curing, screening, and product export. Incoming feedstocks may be ground, shredded, and sorted to improve particle size, blend various feedstocks, and remove contaminants before being placed into windrows, covered aerated static piles (CASPs), or negatively aerated static pile (ASP) systems for active composting. Following the active composting phase, material would be cured in windrows, screened to remove oversized materials and contaminants, and transported off-site for use as a soil amendment in agricultural, landscaping, and horticultural applications. Equipment commonly used during operations includes loaders, grinders, screeners, water trucks, and haul trucks. Windrow composting operations use windrow turners to agitate and aerate the piles; windrow turners can be self-propelled or be towed by a tractor, loader, or other heavy equipment. ASPs use electric blowers to aerate the piles. A general description of the three small composting scenarios and three medium composting scenarios is provided in Table 1-1.

Table 1-1: Operating Scenarios

Parameter	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Facility Size	Small	Small	Small	Medium	Medium	Medium
Facility Capacity (cy)	5,000	5,000	5,000	12,500	12,500	12,500
Facility Size (acres)	5	5	5	11	11	11
Throughput (TPY)	10,000	10,000	10,000	25,000	25,000	25,000
Active Technology	Windrows	Positive CASP	Negative ASP with Biofilter	Windrows	Positive CASP	Negative ASP with Biofilter

2.0 VEHICLE AND EQUIPMENT ENERGY USE ESTIMATES

2.1 Construction Fuel Use Estimates

Construction fuel use estimates are based on the California Emissions Estimator Model® (CalEEMod) construction scenarios that were developed for the Air Quality and Greenhouse Gas (GHG) Technical Report developed for the PEIR. CalEEMod does not report fuel use directly; however, the equipment data that is reported is sufficiently detailed to allow direct calculation of fuel consumption.

For the equipment used on-site, overall power requirements [horsepower-hours (HP-hr)] is calculated based on the number of devices, horsepower (HP), and days and hours of operation. Equipment operation is converted to fuel use estimates using the Brake-Specific Fuel Consumption (BSFC) of 0.3602 lb/HP-hr for the diesel-fueled equipment, which is based on an Environmental Protection Agency (EPA)-published fuel consumption rate of 7,000 British thermal units (Btu)/HP-hr.[1]

[1] This value is calculated from an average BSFC of 7,000 Btu/HP-hr published by the EPA for Diesel Industrial Engines (EPA 2025, pg. 7) with the appropriate conversion factors applied.

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To estimate construction worker commute mileage, CalEEMod reports the number of one-way trips per day, one-way mileage driven, and construction phase duration. Mileage is converted to fuel consumption using published fuel economy values for the vehicle type.

Construction is a one-time event that lasts approximately 1 year. Construction fuel use is summarized in Table 2-1. Construction fuel use estimates are provided in Table 3 in Attachment 1.

Table 2-1: Construction Fuel Use

Energy Category	Scenario 1 (Gal)	Scenario 2 (Gal)	Scenario 3 (Gal)	Scenario 4 (Gal)	Scenario 5 (Gal)	Scenario 6 (Gal)
Construction Gasoline	207	207	207	189	189	189
Construction Diesel	24,217	24,217	24,217	25,616	25,616	25,616

2.2 Operations Energy Consumption

2.2.1 On-Road Vehicle Fuel Use Estimates

Employee travel, routine business travel, transport of materials to the facility, and transport of finished compost to customers would require diesel or gasoline fuel.

2.2.1.1 Vehicle Miles Traveled

The daily operation of a compost facility will require the use of on-road mobile sources for personnel transport, conducting routine business, the transport of waste feedstocks to the facility, and the transport of finished compost and byproducts from the facility.

The travel distances to and from the compost facility depend on the source of the waste materials and the location of the compost customer. The purpose of the program is to facilitate landfill diversion. It is assumed, therefore, that the organic feedstock for the compost facilities is currently transported to a landfill via truck.

There are three possible scenarios to evaluate with respect to travel distances for feedstock delivery:

1. The feedstock supplier is closer to the compost facility than to the landfill, which would reduce the fuel use required for waste disposal;
2. The feedstock supplier is the same distance to the compost facility as it is to the landfill, which could occur if the compost facility were co-located at a landfill site; this scenario would result in no change to the fuel required for waste disposal; and
3. The feedstock supplier is farther from the compost facility than to the landfill, which would require additional fuel for waste disposal.

Because the project locations are not known, travel distances are estimated. To ensure that energy usage is not underestimated, it is assumed that the compost facility is farther from the feedstock supplier than from the landfill, per scenario (3) above. The travel distance from the feedstock generator to the compost facility is estimated to be 20 miles, one-way. For the purpose of these energy usage estimates, it is assumed that the travel distance from the waste generator to the landfill is 15 miles, one way. To reduce the complexity of the

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fuel use calculations, the net increase in feedstock delivery distance is used to estimate the increase in fuel use associated with the proposed projects. The net increase in vehicle miles is 5 miles per one-way trip (20 – 15 miles = 5 miles).

On-site mileage for waste delivery and compost shipment was based on the distance from the facility access gate to the farthest point of the facility, approximately 0.2 miles (one-way).

The fuel use due to employee travel would depend on the travel distance. The small and medium-sized compost facilities have modest employment requirements, estimated to be eight employees for the small compost facility and 12 employees for the medium facility. It is assumed that any community local to the compost facility could support this level of employment and long travel distances would not be required. Employee travel to the compost facility is estimated at 15 miles, one way, for both small and medium facilities. Employees are assumed not to travel on-site.

The following vehicle types were characterized to support the composting operations:

- LDA – Light-Duty Auto is a vehicle weight category that includes cars and light trucks that weigh less than 8,500 pounds and are assumed to be gasoline fueled; this vehicle category is assigned for employee commuting;
- LHD2 – Light Heavy-Duty 2 [Gross Vehicle Weight Rating (GVWR): 10,001 pounds to 14,000 pounds] vehicles are assumed to be diesel fueled and used for miscellaneous business deliveries; and
- T7 Tractor Class 8 – Typically weighs over 33,000 pounds as this is the minimum weight requirement for a Class 8 vehicle according to U.S. truck classifications, meaning it falls into the heavy-duty truck category with a GVWR exceeding 33,001 pounds. T7 tractors are used for the incoming feedstock loads (three or more axles), and outgoing finished compost. T7 Tractor Class 8 vehicles are assumed to be diesel fueled.

Vehicle descriptions, purpose, and travel distance estimates are summarized in Table 2-2.

Table 2-2: Vehicles and Travel Distances

Vehicle Use	Vehicle	One-Way Travel Distance Small Facility (Miles/Day)	One-Way Travel Distance Medium Facility (Miles/Day)
Employee	LDT1	15.00	15.00
Delivery of Office Supplies	LHD2	15.20	15.20
Ship Raw Material	T7 Tractor	20.20	20.20
Ship Finished Compost	T7 Tractor	15.20	15.20
Baseline Waste Hauling to Landfill	T7 Tractor	15.00	15.00

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2.2.1.2 Fuel Economy

Vehicle miles travelled for each vehicle type are divided by the average fuel economy values shown in Table 2-3 to estimate annual fuel usage.

Table 2-3: Vehicle Fuel Economy

Vehicle Type	Fuel	Fuel Economy[1] (Miles/Gal)
LDA	Gasoline	33.5
LHD2	Diesel	10.0
T7 Tractor Class 8	Diesel	5.0

[1] Fuel economy estimates provided by Google AI, which is compiled U.S. EPA, Department of Energy (DOE), Bureau of Transportation Statistics (BTS), and industry fleet data.

2.2.2 Off-Road Equipment Fuel Use

Off-road equipment includes the on-site heavy-duty equipment used to support on-site operations, including front-end loaders and excavators used to build compost piles, windrow turners used to mix and aerate windrows, fuel trucks used to fuel on-site equipment, and water trucks used to water compost piles and roadways. Each of the six scenarios evaluated is assumed to operate with the following diesel-fueled equipment:

- Windrow Turner – A windrow turner would be required for Scenarios 1 and 4 to mix and aerate the windrow compost piles; windrow turners are not used with CASPs or ASPs (Scenarios 2, 3, 5 and 6);
- Fuel Truck – Operated on-site to fuel mobile and stationary equipment; the fuel truck is assumed to operate on-site for 2 hours per day refueling equipment;
- Tractor – Used on-site to move feedstock, compost, and mulch;
- Excavator – Used on-site to move feedstock, compost, and mulch;
- Front-end Loader – Used on-site to move feedstock, compost, and mulch;
- Water Truck – Used on-site to apply water compost and curing piles for both moisture control and dust suppression, as well as to apply water to road surfaces for dust control; and
- Sweeper Truck – Used on-site for dust control on paved surfaces.

A summary of equipment information and equipment counts is provided in Table 2-4. Equipment operation is converted to fuel use estimates using the BSFC of 0.3602 lb per HP-hr for the diesel-fueled equipment.

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2.2.3 Stationary Equipment Fuel Use

Each of the six proposed operating scenarios evaluated is assumed to operate with the following diesel-fueled equipment. It is possible that a grinder, screen, stacker or colorizer could be electrically powered.[2]

- Grinder – Used to grinder feedstock in preparation for composting; grinding aides in mixing and ensuring consistent particle size;
- Screen – Used to separate mulch and debris from compost following composting;
- Stacker – Used to construct storage piles: commonly used for mulch and finished compost; could also be used for feedstock;
- Colorizer – Used to apply dye to mulch; assumed to be used at the medium facilities and assumed not to be used at the small facilities due to the limited amount of mulch processed;
- Emergency Generator – Assumed to be available to support facility operations in the event of power loss; and
- Emergency Fire Pump – Assumed to be available to extinguish pile fires.

A summary of equipment information and counts is provided in Table 2-5.

[2] Diesel power was assumed for the air quality analysis because diesel emissions lead to the greatest health risk impacts, making the analysis conservative. Diesel fuel consumption is evaluated for this energy impacts analysis for consistency.

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Table 2-4: Off-Road Equipment Operating Information and Equipment Counts

Off-Road Equipment	Engine Information			Equipment Count					
	BHP	Hr/Yr	Operating Load	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Windrow Turner	250	3,120	0.8	1	0	0	1	0	0
Fuel Truck	350	624	0.38	1	1	1	1	1	1
Tractors	200	3,120	0.37	1	1	1	1	1	1
Excavator	201	3,120	0.38	1	1	1	1	1	1
Loader	250	3,120	0.36	2	2	2	3	3	3
Water Truck	350	3,120	0.38	1	1	1	1	1	1
Sweeper Truck	240	3,120	0.46	1	1	1	1	1	1

Table 2-5: Stationary Equipment Operating Information and Equipment Counts

Function	Engine Information			Equipment Count					
	BHP	Hours/ Yr	Operating Load	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Grinder	100	3,120	0.95	1	1	1	1	1	1
Screen	100	3,120	0.95	1	1	1	1	1	1
Stacker	100	3,120	0.95	1	1	1	1	1	1
Colorizer	100	3,120	0.95	0	0	0	1	1	1
Emergency Generator	150	200	0.74	1	1	1	1	1	1
Emergency Fire Pump	300	200	0.74	1	1	1	1	1	1

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2.2.4 Electricity Usage Estimates

A small or medium compost facility would require electric power for normal operations. The three primary anticipated uses are listed below.

1. Blower Operation for ASPs – Electricity usage is calculated based on operating hours and motor HP. Blowers are not operated at windrow facilities. Blower requirements are listed in Table 2-6.
2. Water Supply – This is the power required to provide water to the facility. Electricity use for water supply is indirect power consumption (i.e., it is electricity consumed at the pump plant or treatment plant, not at the compost facility itself). Electricity use is calculated based on water demand and published energy intensity factors for water supply [California Air Pollution Control Officers Association (CAPCOA) 2026]. Water usage is estimated based on the water content of feedstock (assumed to be 20% by weight as received) and the maximum water content recommended for efficient composting, 70% by weight (CARB 2015, pg. 18). An additional 50% safety factor is applied to the calculated water demand to account for water truck usage on the piles and roadways and sprinkler system usage on the compost and curing piles. Estimated water demand for the facility is listed in Table 2-7.
3. Office Building – Electricity is used for lighting, computers, air conditioning, and sanitary water use. The office building may also use natural gas for space heating and water heating. Electricity and natural gas consumption for the building operation, as well as water demand, are calculated based on published energy intensity factors (CAPCOA 2026) and are included in Table 2-9 and Attachment 1.

Table 2-6: Blower Operating Requirements

Scenario	Installed Blower (HP)	Installed Blower (kW)	Operating (Hours/Yr)
1	0	0.0	0
2	10	7.5	8,760
3	10	7.5	8,760
4	0	0.0	0
5	30	22.4	8,760
6	30	22.4	8,760

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Table 2-7: Water Demand

Scenario	Raw Throughput, As Delivered (Ton/Yr)	Moisture Content, As Delivered (Ton/Yr)	Throughput (Bone Dry Ton/Yr)	Moisture as Composted (Ton/Yr)	Water Required (Acre/Yr)
1	10,000	2,000	8,000	5,600	6.3
2	10,000	2,000	8,000	5,600	6.3
3	10,000	2,000	8,000	5,600	6.3
4	25,000	5,000	20,000	14,000	15.5
5	25,000	5,000	20,000	14,000	15.5
6	25,000	5,000	20,000	14,000	15.5

2.3 Results and Analysis

2.3.1 Summary of Energy Use

Construction and operations energy demands are summarized in Tables 2-8 and 2-9, respectively. Energy use calculations are provided in Attachment 1.

Table 2-8: Summary of Construction Energy Requirements

Energy Category	Unit of Measure	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Gasoline	Gal/ Period	207	207	207	189	189	189
Diesel	Gal/ Period	24,217	24,217	24,217	25,616	25,616	25,616

Table 2-9: Summary of Operations Energy Requirements

Energy Category	Unit of Measure	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
On-Road Gasoline	Gal/yr	2,235	2,235	2,235	3,353	3,353	3,353
On-Road Diesel	Gal/yr	15,725	15,725	15,725	36,941	36,941	36,941
Off-Road Diesel	Gal/yr	127,593	95,710	95,710	141,941	110,058	110,058
Stationary Diesel	Gal/yr	48,836	48,836	48,836	63,981	63,981	63,981
Electricity	kW-hr/yr	36,544	101,869	101,869	85,753	281,726	281,726
Natural Gas	MMBtu/yr	4.3	4.3	4.3	4.3	4.3	4.3

2.3.2 Analysis and Discussion

According to the California Department of Tax and Fee Administration (CDTFA) approximately 2.9 billion gallons (gal) of diesel was sold in California in 2025 (CDTFA 2026). Based on the fuel use calculations presented herein, the annual diesel fuel

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consumption of a small or medium compost facility is approximately 0.00552% to 0.00836% of the annual diesel consumption in California, depending on which operating scenario is evaluated. However, the hauling of finished compost to end users would likely result in the reduced fuel economy of vehicles operating on these routes. Because fuel costs are embedded into the cost of transporting feedstock and processed materials, which would be a substantial portion of operating cost of organic waste handling facilities, composting facilities would be incentivized to locate close to agricultural areas, where finished compost would be applied to the land (CalRecycle 2019, pg. 3.6-13). For this reason, the most likely scenario for most facilities eligible for the program is a reduction in fuel use associated with waste disposal, rather than an increase in fuel use, as presented herein.

Gasoline is the most used transportation fuel in California, with 97% of all gasoline being consumed by light-duty cars, pickup trucks, and sport utility vehicles. In 2025, approximately 13.3 billion gal of gasoline were sold, according to the CDTFA (CDTFA 2026). Gasoline sold in California at retail is made up of 90 percent petroleum-based gasoline, as specified by the California Air Resources Board (CARB), and 10% ethanol (CEC 2026a). The annual gasoline consumption of a small or medium compost facility is approximately 0.00002% to 0.00003% of the annual gasoline consumption in California, depending on which operating scenario is evaluated.

According to the California Energy Commission (CEC), Statewide electricity consumption was more than 281,000 gigawatt hours (GWh) in 2024. Consumption is projected to reach nearly 417,000 GWh in 2045 in the mid baseline used in the planning forecast and 434,000 GWh in the high baseline used in the local reliability scenario (CEC 2026b, pg. 54). The projected electrical demand for a single compost project would be 0.00130% to 0.01003% of the 2024 electric demand in the State, depending on which operating scenario is considered.

Implementing the proposed small and medium compost facility projects would also displace some amount of petroleum-based fertilizers as compost materials become increasingly available. Over the past decade, the average annual amount of petroleum-derived nitrogen fertilizer purchased for use in California was approximately 600,000 tons. The application of these fertilizers is a notable contributor to global emissions of nitrogen dioxide, a potent GHG. Moreover, the production of nitrogen-rich fertilizers requires the combustion of natural gas. To produce, transport, and apply one ton of nitrogen fertilizer requires an amount of energy equal to almost two tons of gasoline. Compost materials generated under the proposed Project would reduce overall reliance on petroleum-based fertilizers (CalRecycle 2019, pg. 3.8-17). The energy reductions associated with using compost rather than petroleum-based fertilizers are not determined; however, any reductions would serve to offset the increase in energy use associated with construction and operation of the proposed small and medium compost facilities.

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3.0 IMPACTS ANALYSIS

3.1 Would the Project Result in a Potentially Significant Environmental Impact Due to Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources During Project Construction or Operation?

Construction of the proposed small or medium compost facilities would result in the temporary use of fuels for employee travel and heavy equipment usage. Construction-related fuel consumption would be finite, short-term, and consistent with construction activities of a similar character. This energy use would not be considered wasteful, inefficient, or unnecessary.

Operation of the small and medium compost facilities could cause an increase in Statewide fuel consumption associated with feedstock and finished compost transport. Operation of the on-site equipment (screens, grinders, front-end loaders, etc.) may also use fuel and/or electricity. The fuel economy and emissions standards required by the State would minimize the total amount of fuel and electricity consumed by mandating efficient vehicle fleets and energy-efficient electric motors. Furthermore, the use of compost fertilizer may decrease the State's reliance on petroleum-based fertilizer, reducing the energy demand for manufacturing and distributing those products. For these reasons, the impact of the project on energy resources would be Less Than Significant.

3.2 Would the Project Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency?

The construction and operation of small and medium compost facilities would entail the use of buildings, equipment, and vehicles subject to State energy policies. State policies seek to reduce energy consumption through efficiency, and transition to energy generation with lower carbon intensities. The buildings, vehicles, and equipment used to process organic waste would conform to the energy efficiency standards set forth by the State. For these reasons, this impact would be Less Than Significant.

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4.0 REFERENCES

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ATTACHMENT 1 – PROPOSED PROJECT ENERGY REQUIREMENTS CALCULATION WORKSHEETS

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Table 1: Compost Facility Operations Assumptions

Parameter	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Facility Size	Small	Small	Small	Medium	Medium	Medium
Facility Capacity (cu yd)	5,000	5,000	5,000	12,500	12,500	12,500
Facility Size (acres)	5	5	5	11	11	11
Throughput (tpy)	10,000	10,000	10,000	25,000	25,000	25,000
Operating Schedule (Hours per Day)	10	10	10	10	10	10
Operating Schedule (Weeks per Year)	52	52	52	52	52	52
Operating Schedule (Days per Year)	312	312	312	312	312	312
Feedstock	Green Waste (includes vegetative food material)	Green Waste (includes vegetative food material)	Green Waste (includes vegetative food material)	Green Waste (includes vegetative food material) + Food Waste	Green Waste (includes vegetative food material) + Food Waste	Green Waste (includes vegetative food material) + Food Waste
Feedstock Storage Time (days)	2	2	2	2	2	2
Feedstock Storage Building	N/A	N/A	N/A	Only as a BMP for facilities near receptors. No separate calculations.	Only as a BMP for facilities near receptors. No separate calculations.	Only as a BMP for facilities near receptors. No separate calculations.
Active Technology	Windrows	Positive CASP	Negative ASP with Filter	Windrows	Positive CASP	Negative ASP with Filter
VOC Control Efficiency	0%	80%	90%	0%	80%	90%
NH3 Control	0%	80%	80%	0%	80%	80%
Water intensity factor from CalEEMod Users's Guide, Appendix G, Table G-31	Yes	Yes	Yes	Yes	Yes	Yes
Mulch Colorizer (Tons per Hour)	0	0	0	50	50	50
Diesel Grinders	1	1	1	1	1	1
Diesel Screens	1	1	1	1	1	1
Diesel Stackers	1	1	1	1	1	1
Diesel Colorizer	0	0	0	1	1	1
Diesel Emergency Generator	1	1	1	1	1	1
Diesel Emergency Fire Pump	1	1	1	1	1	1
Employee and Commercial Light Duty Gasoline Vehicle Round Trips Per Day	8	8	8	12	12	12
Employee and Commercial Light Duty Diesel Vehicle Round Trips Per Day	1	1	1	1	1	1
Tractor Trailers for Raw Materials Round Trips Per Day	14	14	14	35	35	35
Tractor Trailers for Product Round Trips Per Day	3	3	3	7	7	7
Employee Mileage (one-way)	15	15	15	15	15	15
Delivery of Office Supplies Offsite Mileage (one-way)	15	15	15	15	15	15
Feedstock Haul Truck Offsite Mileage (one-way)	20	20	20	20	20	20
Compost Product Haul Truck Offsite Mileage (one-way)	15	15	15	15	15	15
Baseline Feedstock Haul Truck Mileage (one-way)	15	15	15	15	15	15
Windrow Turner	1	0	0	1	0	0
Fuel Truck	1	1	1	1	1	1
Tractors	1	1	1	1	1	1
Excavator	1	1	1	1	1	1
Loader	2	2	2	3	3	3
Water Truck	1	1	1	1	1	1
Sweeper Truck	1	1	1	1	1	1
Fuel Truck (Hours per Day)	1	1	1	2	2	2
Other Off-road Engine (mobile and non-emergency stationary) (Hours per Day)	4	4	4	10	10	10

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Table 2: Additional Datasets and Assumptions

Table 2-1: Stationary Engine Information'

Equipment	Engine Power[1,2]	Operating Load[3]
Windrow Turner	250	0.80
Diesel Grinders	100	0.95
Diesel Screens	100	0.95
Diesel Stackers	100	0.95
Diesel Colorizer	100	0.95
Diesel Emergency Generator	150	0.74
Diesel Emergency Fire Pump	300	0.74

Table 2-2: Emergency Engine Operation Assumptions

Parameter	Value	Unit of Measure
Emergency Engine Operating Hours	2	hours/day, assumption
Emergency Engine Operating Days	100	day/yr, for 200 hours per year, assumption

Water intensity factor from CalEEMod Users's Guide, Appendix G, Table G-31

Table 2-3: Onroad Vehicle Information and Mileage

Vehicle Type	Vehicle Use	Fuel
LDT1	Employee	Gasoline
LHD2	Delivery of Office Supplies	Diesel
T7 Tractor	Ship Raw Material	Diesel
T7 Tractor	Ship Finished Compost	Diesel

Table 2-4: Offroad Vehicle Information

Offroad Equipment	Typical Model (or Equivalent)	Fuel	Operating Load[4]
Fuel Truck	Freightliner M2106	Diesel	0.38
Tractors	Massey Fergusen, 7619	Diesel	0.37
Excavator	Caterpillar 326	Diesel	0.38
Loader	Caterpillar, 962K	Diesel	0.36
Water Truck	International, 7400 6x4	Diesel	0.38
Sweeper Truck	Freightliner M2	Diesel	0.46

Table 2-5: Fuel Economy Values

Vehicle	Fuel Economy[5] (mile/gal)
LDT1	33.5
LHD2	10
T7 Tractor	5

Table 2-6 General Data and Parameters

Parameter	Value	UOM
Days of Operation	312	day/year
Fuel Truck Hr/Day	2	hr/day
Operating Hr/Day	10	hr/day

Table 2-7: 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	19,433	Btu/lb	calculated
BSFC	0.3602	lb/hp-hr	calculated

Notes:

1. From User Guide for CalEEMod Version
2. Engineering estimate based on projected throughput and machine capacity.
3. Engineering estimate based on projected throughput and machine capacity except for emergency engines, which are from User Guide for CalEEMod Version 2022.1, Appendix G, Table G-12
4. User Guide for CalEEMod Version 2022.1, Appendix G, Table G-12
5. Fuel economy estimates provided by Google AI, which is compiled U.S. EPA, Department of Energy (DOE), Bureau of Transportation Statistics (BTS), and industry fleet data.

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Table 3: Construction Equipment Fuel Use

Table 3-1: Construction Equipment Fuel Estimate - Small Facilities

Phase	Equipment Type	Unit Count per Day	Hours per Day	Days per Phase	Engine Information		Fuel (gal)
					BHp	Op Load	
Site Preparation	Rubber Tired Dozers	3	8	5	367	0.40	900
Site Preparation	Tractors/Loaders/Backhoes	4	8	5	84	0.37	254
Grading	Excavators	1	8	8	36	0.38	45
Grading	Graders	1	8	8	148	0.41	198
Grading	Rubber Tired Dozers	1	8	8	367	0.40	480
Grading	Tractors/Loaders/Backhoes	3	8	8	84	0.37	305
Building Construction	Cranes	1	7	200	367	0.29	7,613
Building Construction	Forklifts	3	8	200	82	0.20	4,022
Building Construction	Generator Sets	1	8	200	14	0.74	847
Building Construction	Tractors/Loaders/Backhoes	3	7	200	84	0.37	6,670
Building Construction	Welders	1	8	200	46	0.45	1,692
Paving	Cement and Motar Mixers	2	6	18	10	0.56	62
Paving	Pavers	1	8	18	81	0.42	250
Paving	Paving Equipment	2	6	18	89	0.36	354
Paving	Rollers	2	6	18	36	0.38	151
Paving	Tractors/Loaders/Backhoes	1	8	18	84	0.37	229
Architechural Coating	Air Compressors	1	6	25	37	0.48	136
						Total	24,208

Table 3-2: Construction Worker Fuel Use - Small Facilities

Phase	Equipment Type	Vehicle Type	Fuel Type	One-Way	Miles per	Days per	Total Miles	Fuel Mileage	Fuel
Site Preparation	Worker	LDT1	gasoline	17.5	11.7	5	1023.75	33.50	31
Grading	Worker	LDT1	gasoline	15	11.7	8	1404.00	33.50	42
Building Construction	Worker	LDT1	gasoline	0.1184	11.7	200	277.06	33.50	8
Building Construction	Vendor	LHD2	diesel	0.052448	8.4	200	88.11	10.00	9
Paving	Worker	LDT1	gasoline	20	11.7	18	4212.00	33.50	126
Architechural Coating	Worker	LDT1	gasoline	0.02368	11.7	25	6.93	33.50	0.2
								Total	215

Table 3-3: Construction Equipment Fuel Estimate - Medium Facilities

Phase	Equipment Type	Unit Count	Hours per	Days per	Engine Information		Fuel
					BHp	Op Load	
Site Preparation	Rubber Tired Dozers	3	8	5	367	0.40	900
Site Preparation	Tractors/Loaders/Backhoes	4	8	5	84	0.37	254
Grading	Excavators	2	8	8	36	0.38	89
Grading	Graders	1	8	8	148	0.41	198
Grading	Rubber Tired Dozers	1	8	8	367	0.40	480
Grading	Tractors/Loaders/Backhoes	2	8	8	84	0.37	203
Grading	Scrapers	2	8	8	423	0.48	1,328
Building Construction	Cranes	1	7	200	367	0.29	7,613
Building Construction	Forklifts	3	8	200	82	0.20	4,022
Building Construction	Generator Sets	1	8	200	14	0.74	847
Building Construction	Tractors/Loaders/Backhoes	3	7	200	84	0.37	6,670
Building Construction	Welders	1	8	200	46	0.45	1,692
Paving	Pavers	2	8	18	81	0.42	501
Paving	Paving Equipment	2	8	18	89	0.36	471
Paving	Rollers	2	8	18	36	0.38	201
Architechural Coating	Air Compressors	1	6	25	37	0.48	136
						Total	25,607

Table 3-4: Construction Worker Fuel Use - Medium Facilities

Phase	Equipment Type	Vehicle Type	Fuel Type	One-Way	Miles per	Days per	Total Miles	Fuel Mileage	Fuel
Site Preparation	Worker	LDT1	gasoline	17.5	11.7	5	1023.75	33.50	31
Grading	Worker	LDT1	gasoline	20	11.7	8	1872.00	33.50	56
Building Construction	Worker	LDT1	gasoline	0.1184	11.7	200	277.06	33.50	8
Building Construction	Vendor	LHD2	diesel	0.052448	8.4	200	88.11	10.00	9
Paving	Worker	LDT1	gasoline	15	11.7	18	3159.00	33.50	94
Architechural Coating	Worker	LDT1	gasoline	0.02368	11.7	25	6.93	33.50	0.2
								Total	198

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Table 4: Onroad Mobile Source Vehicle Information and Fuel Use

Table 4-1: Vehicle Information and Mileage Calculation - Scenario 1

Vehicle Type	Vehicle Use	Number of Vehicles per Day	Fuel	Days	One-way Trips per Vehicle per Day	One-way Trips per Year	One-way Onsite Trip Mileage	One-way Offsite Trip Mileage[1]	Total One-way Trip Mileage	Onsite Total VMT/yr	Offsite Total VMT/yr	Total VMT/yr	Fuel Use Gal/yr
LDT1	Employee	8	Gasoline	312	2	4,992	0.00	15	15.00	0	74,880	74,880	2,235
LHD2	Delivery of Office Supplies	1	Diesel	312	2	624	0.20	15	15.20	125	9,360	9,485	948
T7 Tractor	Ship Raw Material	14	Diesel	312	2	8,736	0.20	5	5.20	1,747	43,680	45,427	9,085
T7 Tractor	Ship Finished Compost	3	Diesel	312	2	1,872	0.20	15	15.20	374	28,080	28,454	5,691

Table 4-2: Vehicle Information and Mileage Calculation - Scenario 2

Vehicle Type	Vehicle Use	Number of Vehicles per Day	Fuel	Days	One-way Trips per Vehicle per Day	One-way Trips per Year	One-way Onsite Trip Mileage	One-way Offsite Trip Mileage[1]	Total One-way Trip Mileage	Onsite Total VMT/yr	Offsite Total VMT/yr	Total VMT/yr	Fuel Use Gal/yr
LDT1	Employee	8	Gasoline	312	2	4,992	0.00	15	15.00	0	74,880	74,880	2,235
LHD2	Delivery of Office Supplies	1	Diesel	312	2	624	0.20	15	15.20	125	9,360	9,485	948
T7 Tractor	Ship Raw Material	14	Diesel	312	2	8,736	0.20	5	5.20	1,747	43,680	45,427	9,085
T7 Tractor	Ship Finished Compost	3	Diesel	312	2	1,872	0.20	15	15.20	374	28,080	28,454	5,691

Table 4-3: Vehicle Information and Mileage Calculation - Scenario 3

Vehicle Type	Vehicle Use	Number of Vehicles per Day	Fuel	Days	One-way Trips per Vehicle per Day	One-way Trips per Year	One-way Onsite Trip Mileage	One-way Offsite Trip Mileage[1]	Total One-way Trip Mileage	Onsite Total VMT/yr	Offsite Total VMT/yr	Total VMT/yr	Fuel Use Gal/yr
LDT1	Employee	8	Gasoline	312	2	4,992	0.00	15	15.00	0	74,880	74,880	2,235
LHD2	Delivery of Office Supplies	1	Diesel	312	2	624	0.20	15	15.20	125	9,360	9,485	948
T7 Tractor	Ship Raw Material	14	Diesel	312	2	8,736	0.20	5	5.20	1,747	43,680	45,427	9,085
T7 Tractor	Ship Finished Compost	3	Diesel	312	2	1,872	0.20	15	15.20	374	28,080	28,454	5,691

Table 4-4: Vehicle Information and Mileage Calculation - Scenario 4

Vehicle Type	Vehicle Use	Number of Vehicles per Day	Fuel	Days	One-way Trips per Vehicle per Day	One-way Trips per Year	One-way Onsite Trip Mileage	One-way Offsite Trip Mileage[1]	Total One-way Trip Mileage	Onsite Total VMT/yr	Offsite Total VMT/yr	Total VMT/yr	Fuel Use Gal/yr
LDT1	Employee	12	Gasoline	312	2	7,488	0.00	15	15.00	0	112,320	112,320	3,353
LHD2	Delivery of Office Supplies	1	Diesel	312	2	624	0.20	15	15.20	125	9,360	9,485	948
T7 Tractor	Ship Raw Material	35	Diesel	312	2	21,840	0.20	5	5.20	4,368	109,200	113,568	22,714
T7 Tractor	Ship Finished Compost	7	Diesel	312	2	4,368	0.20	15	15.20	874	65,520	66,394	13,279

Table 4-5: Vehicle Information and Mileage Calculation - Scenario 5

Vehicle Type	Vehicle Use	Number of Vehicles per Day	Fuel	Days	One-way Trips per Vehicle per Day	One-way Trips per Year	One-way Onsite Trip Mileage	One-way Offsite Trip Mileage[1]	Total One-way Trip Mileage	Onsite Total VMT/yr	Offsite Total VMT/yr	Total VMT/yr	Fuel Use Gal/yr
LDT1	Employee	12	Gasoline	312	2	7,488	0.00	15	15.00	0	112,320	112,320	3,353
LHD2	Delivery of Office Supplies	1	Diesel	312	2	624	0.20	15	15.20	125	9,360	9,485	948
T7 Tractor	Ship Raw Material	35	Diesel	312	2	21,840	0.20	5	5.20	4,368	109,200	113,568	22,714
T7 Tractor	Ship Finished Compost	7	Diesel	312	2	4,368	0.20	15	15.20	874	65,520	66,394	13,279

Table 4-6: Vehicle Information and Mileage Calculation - Scenario 6

Vehicle Type	Vehicle Use	Number of Vehicles per Day	Fuel	Days	One-way Trips per Vehicle per Day	One-way Trips per Year	One-way Onsite Trip Mileage	One-way Offsite Trip Mileage[1]	Total One-way Trip Mileage	Onsite Total VMT/yr	Offsite Total VMT/yr	Total VMT/yr	Fuel Use Gal/yr
LDT1	Employee	12	Gasoline	312	2	7,488	0.00	15	15.00	0	112,320	112,320	3,353
LHD2	Delivery of Office Supplies	1	Diesel	312	2	624	0.20	15	15.20	125	9,360	9,485	948
T7 Tractor	Ship Raw Material	35	Diesel	312	2	21,840	0.20	5	5.20	4,368	109,200	113,568	22,714
T7 Tractor	Ship Finished Compost	7	Diesel	312	2	4,368	0.20	15	15.20	874	65,520	66,394	13,279

Notes:

1. One-way Offsite Trip Mileage for raw material shipment represents the incremental mileage relative to the baseline scenario (waste hauling to landfill).

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Table 5: Offroad Equipment Fuel Use

Table 5-1: Offroad Equipment Fuel Usage - Scenario 1

Unit Count	Offroad Equipment	Typical Model (or Equivalent)	Engine Information		Op Load[1]	Fuel (gal/yr)
			BHp	Hr/Yr		
1	Windrow Turner	Scarab	250	3,120	0.80	31,883
1	Fuel Truck	Freightliner M2106	350	624	0.38	4,240
1	Tractors	Massey Fergusen, 7619	200	3,120	0.37	11,797
1	Excavator	Caterpillar 326	201	3,120	0.38	12,176
2	Loader	Caterpillar, 962K	250	3,120	0.36	28,695
1	Water Truck	International, 7400 6x4	350	3,120	0.38	21,202
1	Sweeper Truck	Freightliner M2	240	3,120	0.46	17,600
					Total	127,593

Table 5-2: Offroad Equipment Fuel Usage - Scenario 2

Unit Count	Offroad Equipment	Typical Model (or Equivalent)	Engine Information		Op Load[1]	Fuel (gal/yr)
			BHp	Hr/Yr		
0	Windrow Turner	Scarab	250	0	0.00	0
1	Fuel Truck	Freightliner M2106	350	624	0.38	4,240
1	Tractors	Massey Fergusen, 7619	200	3,120	0.37	11,797
1	Excavator	Caterpillar 326	201	3,120	0.38	12,176
2	Loader	Caterpillar, 962K	250	3,120	0.36	28,695
1	Water Truck	International, 7400 6x4	350	3,120	0.38	21,202
1	Sweeper Truck	Freightliner M2	240	3,120	0.46	17,600
					Total	95,710

Table 5-3: Offroad Equipment Fuel Usage - Scenario 3

Unit Count	Offroad Equipment	Typical Model (or Equivalent)	Engine Information		Op Load[1]	Fuel (gal/yr)
			BHp	Hr/Yr		
0	Windrow Turner	Scarab	250	0	0.00	0
1	Fuel Truck	Freightliner M2106	350	624	0.38	4,240
1	Tractors	Massey Fergusen, 7619	200	3,120	0.37	11,797
1	Excavator	Caterpillar 326	201	3,120	0.38	12,176
2	Loader	Caterpillar, 962K	250	3,120	0.36	28,695
1	Water Truck	International, 7400 6x4	350	3,120	0.38	21,202
1	Sweeper Truck	Freightliner M2	240	3,120	0.46	17,600
					Total	95,710

Table 5-4: Offroad Equipment Fuel Usage - Scenario 4

Unit Count	Offroad Equipment	Typical Model (or Equivalent)	Engine Information		Op Load[1]	Fuel (gal/yr)
			BHp	Hr/Yr		
1	Windrow Turner	Scarab	250	3,120	0.80	31,883
1	Fuel Truck	Freightliner M2106	350	624	0.38	4,240
1	Tractors	Massey Fergusen, 7619	200	3,120	0.37	11,797
1	Excavator	Caterpillar 326	201	3,120	0.38	12,176
3	Loader	Caterpillar, 962K	250	3,120	0.36	43,042
1	Water Truck	International, 7400 6x4	350	3,120	0.38	21,202
1	Sweeper Truck	Freightliner M2	240	3,120	0.46	17,600
					Total	141,941

Table 5-5: Offroad Equipment Fuel Usage - Scenario 5

Unit Count	Offroad Equipment	Typical Model (or Equivalent)	Engine Information		Op Load[1]	Fuel (gal/yr)
			BHp	Hr/Yr		
0	Windrow Turner	Scarab	250	0	0.00	0
1	Fuel Truck	Freightliner M2106	350	624	0.38	4,240
1	Tractors	Massey Fergusen, 7619	200	3,120	0.37	11,797
1	Excavator	Caterpillar 326	201	3,120	0.38	12,176
3	Loader	Caterpillar, 962K	250	3,120	0.36	43,042
1	Water Truck	International, 7400 6x4	350	3,120	0.38	21,202
1	Sweeper Truck	Freightliner M2	240	3,120	0.46	17,600
					Total	110,058

Table 5-6: Offroad Equipment Fuel Usage - Scenario 6

Unit Count	Offroad Equipment	Typical Model (or Equivalent)	Engine Information		Op Load[1]	Fuel (gal/yr)
			BHp	Hr/Yr		
0	Windrow Turner	Scarab	250	0	0.00	0
1	Fuel Truck	Freightliner M2106	350	624	0.38	4,240
1	Tractors	Massey Fergusen, 7619	200	3,120	0.37	11,797
1	Excavator	Caterpillar 326	201	3,120	0.38	12,176
3	Loader	Caterpillar, 962K	250	3,120	0.36	43,042
1	Water Truck	International, 7400 6x4	350	3,120	0.38	21,202
1	Sweeper Truck	Freightliner M2	240	3,120	0.46	17,600
					Total	110,058

Notes:

1. CalEEMod User Guide, Appendix G Default Data Tables, Table G12,
https://www.caleemod.com/user-guide
except for windrow turner which is absed on an enginering estimate.

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Table 6: Stationary Engine Fuel Use

Table 6-1: Stationary Engine Fuel Consumption - Scenario 1

Function	Number of Engines	Engine Characteristics		Hr/Yr	Fuel (gal/yr)
		BHp	Op Load		
Diesel Grinders	1	100	0.95	3,120	15,145
Diesel Screens	1	100	0.95	3,120	15,145
Diesel Stackers	1	100	0.95	3,120	15,145
Diesel Colorizer	0	100	0.95	3,120	0
Diesel Emergency Generator	1	150	0.74	200	1,134
Diesel Emergency Fire Pump	1	300	0.74	200	2,269

Table 6-2: Stationary Engine Fuel Consumption - Scenario 2

Function	Number of Engines	Engine Characteristics		Hr/Yr	Fuel (gal/yr)
		BHp	Op Load		
Diesel Grinders	1	100	0.95	3,120	15,145
Diesel Screens	1	100	0.95	3,120	15,145
Diesel Stackers	1	100	0.95	3,120	15,145
Diesel Colorizer	0	100	0.95	3,120	0
Diesel Emergency Generator	1	150	0.74	200	1,134
Diesel Emergency Fire Pump	1	300	0.74	200	2,269

Table 6-3: Stationary Engine Fuel Consumption - Scenario 3

Function	Number of Engines	Engine Characteristics		Hr/Yr	Fuel (gal/yr)
		BHp	Op Load		
Diesel Grinders	1	100	0.95	3,120	15,145
Diesel Screens	1	100	0.95	3,120	15,145
Diesel Stackers	1	100	0.95	3,120	15,145
Diesel Colorizer	0	100	0.95	3,120	0
Diesel Emergency Generator	1	150	0.74	200	1,134
Diesel Emergency Fire Pump	1	300	0.74	200	2,269

Table 6-4: Stationary Engine Fuel Consumption - Scenario 4

Function	Number of Engines	Engine Characteristics		Hr/Yr	Fuel (gal/yr)
		BHp	Op Load		
Diesel Grinders	1	100	0.95	3,120	15,145
Diesel Screens	1	100	0.95	3,120	15,145
Diesel Stackers	1	100	0.95	3,120	15,145
Diesel Colorizer	1	100	0.95	3,120	15,145
Diesel Emergency Generator	1	150	0.74	200	1,134
Diesel Emergency Fire Pump	1	300	0.74	200	2,269

Table 6-5: Stationary Engine Fuel Consumption - Scenario 5

Function	Number of Engines	Engine Characteristics		Hr/Yr	Fuel (gal/yr)
		BHp	Op Load		
Diesel Grinders	1	100	0.95	3,120	15,145
Diesel Screens	1	100	0.95	3,120	15,145
Diesel Stackers	1	100	0.95	3,120	15,145
Diesel Colorizer	1	100	0.95	3,120	15,145
Diesel Emergency Generator	1	150	0.74	200	1,134
Diesel Emergency Fire Pump	1	300	0.74	200	2,269

Table 6-6: Stationary Engine Fuel Consumption - Scenario 6

Function	Number of Engines	Engine Characteristics		Hr/Yr	Fuel (gal/yr)
		BHp	Op Load		
Diesel Grinders	1	100	0.95	3,120	15,145
Diesel Screens	1	100	0.95	3,120	15,145
Diesel Stackers	1	100	0.95	3,120	15,145
Diesel Colorizer	1	100	0.95	3,120	15,145
Diesel Emergency Generator	1	150	0.74	200	1,134
Diesel Emergency Fire Pump	1	300	0.74	200	2,269

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Table 7: Building Utility Requirements

Table 7: Building Utility Requirements

Scenario	Building Size (sq.ft.)	Utility	Intensity Factor[1,2]	Annual Usage
1, 2, and 3	160	Electricity	20,468 kWh/1000 sq.ft./yr	3,274.9 kWh/yr
	160	Water	177,734 gallons/1000 sq.ft./yr	0.1 AF/yr
	160	Natural Gas	26,827 kBtu/1000 sq.ft./yr	4.3 MMBtu/yr
4, 5, and 6	160	Electricity	20,468 kWh/1000 sq.ft./yr	3,274.9 kWh/yr
	160	Water	177,734 gallons/1000 sq.ft./yr	0.1 AF/yr
	160	Natural Gas	26,827 kBtu/1000 sq.ft./yr	4.3 MMBtu/yr

Data and Parameters

Conversion	1000	kBtu/MMBtu
Conversion	325,851	gal/acre foot

Notes:

Water intensity factor from CalEEMod Users's Guide, Appendix G, Table G-31

Electricity and natural gas intensity factors from CalEEMod User's Guide, Appendix G, Table G-28

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Table 8: Electricity Usage

Table 8-1: Electricity Demand - Blower

Scenario	Installed Blower (Hp)	Installed Blower (kW)	Operating (Hours/yr)	Blower Electrical Energy Usage (kW-hr/yr)
1	0	0.0	0	0
2	10	7.5	8,760	65,324
3	10	7.5	8,760	65,324
4	0	0.0	0	0
5	30	22.4	8,760	195,973
6	30	22.4	8,760	195,973

Table 8-2: Electricity Demand - Water Supply

Scenario	Raw Throughput, as delivered (ton/yr)	Moisture Content as Delivered (ton/yr)	Throughput (Bone Dry Ton/yr)	Moisture as Composted (ton/yr)	Water Required (AF/yr)	Energy Intensity[1] (kW-hr/AF)	Water Electrical Energy Usage (kW-hr/yr)
1	10,000	2,000	8,000	5,600	6.3	5306.771859	33,269
2	10,000	2,000	8,000	5,600	6.3	5306.771859	33,269
3	10,000	2,000	8,000	5,600	6.3	5306.771859	33,269
4	25,000	5,000	20,000	14,000	15.5	5306.771859	82,478
5	25,000	5,000	20,000	14,000	15.5	5306.771859	82,478
6	25,000	5,000	20,000	14,000	15.5	5306.771859	82,478

Table 8-3:Energy Intensity Factors - Water Supply[2]

	Supply	Treat	Distribute	Wastewater
kW-hr/AF	3044.175594	725.3146236	1537.281642	1500.553833

Data and Parameters

Conversion	1.341	kW per Hp
Conversion	2000	lb/ton
Moisture content of feedstock	20%	assumption
Moisture content required	70%	assumption
Allowance for sprinkler use	50%	engineering estimate
Density water	8.34	lb/gal
Conversion	325,851	gal/AF

Notes:

1. Energy intensity for supply, treatment and distribution. Wastewater disposal not required.
2. Energy Intensity Factors for water supply, distribution from CalEEMod Appendix G, Table G-32.

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Table 9: Energy Summary

Table 9-1: Energy Summary by Source Category

Phase	Energy Category	Unit of Measure	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Construction	Gasoline	Gal/period	207	207	207	189	189	189
	Diesel	Gal/period	24,217	24,217	24,217	25,616	25,616	25,616
Operations	Onroad Gasoline	Gal/yr	2,235	2,235	2,235	3,353	3,353	3,353
	Onroad Diesel	Gal/yr	15,725	15,725	15,725	36,941	36,941	36,941
	Offroad Diesel	Gal/yr	127,593	95,710	95,710	141,941	110,058	110,058
	Stationary Diesel	Gal/yr	48,836	48,836	48,836	63,981	63,981	63,981
	Electricity	kW-hr/yr	36,544	101,869	101,869	85,753	281,726	281,726
	Natural Gas	MMBtu/yr	4.3	4.3	4.3	4.3	4.3	4.3

Table 9-2: Operations Energy Consumption Summary by Type

Totals	Unit of Measure	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Gasoline	Gal/yr	2,235	2,235	2,235	3,353	3,353	3,353
Diesel	Gal/yr	192,155	160,272	160,272	242,863	210,979	210,979
Electricity	kW-hr/yr	36,544	101,869	101,869	85,753	281,726	281,726
Natural Gas	MMBtu/yr	4.3	4.3	4.3	4.3	4.3	4.3

Table 9-3: Operations Energy Use as a Percentage of Statewide Energy Use

Fuel	California Consumption	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Gasoline	13,318,149,611 Gal/yr	0.00002%	0.00002%	0.00002%	0.00003%	0.00003%	0.00003%
Diesel	2,905,359,699 Gal/yr	0.0066%	0.0055%	0.0055%	0.0084%	0.0073%	0.0073%
Electricity	281,000 GW-hr/yr	0.00130%	0.00363%	0.00363%	0.00305%	0.01003%	0.01003%

Notes:

1. According to the California
2. The CDTFA reports that approximately 2.9 billion gallons of diesel fuel, including off road diesel, were sold in California in 2025 (CDTFA 2026).
3. According to the California Energy Commission (CEC), Statewide electricity consumption was more than 281,000 gigawatt hours (GW-hr) in 2024 (CEC 2026b, pg. 54).

Appendix D

Risk Assessment

NCE has made every effort to provide this report and all associated information in an accessible format. If you need the appendices in an alternative format please contact Jeffrey Esquivel, (916) 341-6337, jeffery.esquivel@calrecycle.ca.gov.

Risk Assessment

Small and Medium Composting Facilities and Operations

Statewide, California

California Department of Resources Recovery and Recycling

Waste Permitting, Compliance, and Mitigation Division
1001 I Street
Sacramento, CA 95814

September 1, 2026

NCE
8801 Folsom Blvd., Suite 265
Sacramento, CA 95826

NCE Project No. 1235.03.55

Collaboration. Commitment. Confidence.℠

Risk Assessment

Small and Medium Composting Facilities and Operations

Statewide, California

September 1, 2026

Prepared for:

California Department of Resources Recovery and Recycling
Waste Permitting, Compliance, and Mitigation Division
1001 I Street
Sacramento, CA 95814

Prepared by:

Ryan Bast, PG
Senior Geologist

Michael Leacox, PG, CEG
Vice President

With contributions from Yorke Engineering

NCE
8801 Folsom Blvd., Suite 265
Sacramento, CA 95826
(916) 388-5655

NCE Project No. 1235.03.55

Risk Assessment Overview

This Risk Assessment was prepared to evaluate potential risks associated with the development and operation of small and medium composting facilities and operations. The Risk Assessment qualitatively assesses the potential risks to the environment (soil, groundwater, surface water, and air quality) and human population to inform the programmatic Environmental Impact Report (EIR) required by Senate Bill (SB) 1046 to facilitate the development and operation of small and medium composting facilities and operations throughout the State.

Generally, a Risk Assessment is a systematic approach to identify, analyze, and prioritize risk based on site settings, receptors, potential exposure pathways, and adverse effects. The approach to this Risk Assessment includes looking at the environmental settings where future composting facilities and operations could be located, establishing potential receptors and exposure pathways, review of publicly available information related to potential contaminants of concern from composting activities, and assigning qualitative risk levels to composting activities. Development of the Risk Assessment relied on institutional knowledge composting activities and on existing relevant resources including established regulatory composting guidelines and regulations outlined in the State Water Resources Control Board's (SWRCB) General Waste Discharge Requirements for Commercial Composting Operations Order WQ 2020-0012-DWQ (General Order) and CalRecycle regulations pertaining to compostable material handling facilities and operations outlined in California Code of Regulations (CCR) Title 14 Chapter 3.1 Sections 17850 through 17895 (14 CCR). The Risk Assessment presents General Order and 14 CCR requirements that address and reduce risk and concludes with best management practices (BMPs) that could be implemented to further reduce and mitigate potential residual risks associated with composting operations.

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Air Emission Calculations

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List of Abbreviations

Abbreviation	Definition
ASPs	aerated static piles
BAAQMD	Bay Area Air Quality Management District
basin plan	Regional Water Quality Control Board water quality control plan
BMPs	best management practices
CAA	Clean Air Act
CalRecycle	California Department of Resources Recovery and Recycling
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CASP	covered aerated static pile
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
cy	cubic yards
DPM	diesel particulate matter
DWR	Department of Water Resources
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
General Order	General Waste Discharge Requirements for Commercial Composting Operations
NH3	ammonia
OEHHA	Office of Environmental Health Hazard Assessment
OIMP	Odor Impact Minimization Plan
program	Small and Medium Composting Facilities and Operations
RWQCB	Regional Water Quality Control Board
SB	Senate Bill

Abbreviation	Definition
SCAQMD	South Coast Air Quality Management District
SDAPCD	San Diego Air Pollution Control District
SJVAPCD	San Joaquin Valley Air Pollution Control District
State	State of California
SWIS	Solid Waste Information System
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
tpy	tons per year
VFA	volatile fatty acids
VOCs	volatile organic compounds
WDR	Waste Discharge Requirement
14 CCR	California Code of Regulations Title 14
°C	degrees Celsius
°F	degrees Fahrenheit

1 Introduction/Purpose

With the passage and implementation of Senate Bill (SB) 1383 in 2016, the California Department of Resources Recovery and Recycling (CalRecycle), in consultation with the California Air Resources Board (CARB), developed a series of goals (and associated regulations) to reduce disposal of organic waste (statewide) by 50 percent of 2014 levels by 2020 and 75 percent by 2025. In addition, a recovery goal of at least 20 percent by 2025 of edible food in the organic waste stream was established. CalRecycle prepared an Environmental Impact Report (EIR) related to SB 1383 (certified in 2019) that programmatically evaluated the expansion of composting facilities, as well as other types of waste reduction facilities, throughout the State of California (State) in response to the established goals.

In 2024, CalRecycle prepared an evaluation of current practices and permitting related to the development of small (less than 10,000 tpy; not more than 5,000 cubic yards [cy] at any one time) composting operations and medium (less than 25,000 tpy but more than 10,000 tpy; more than 5,000 cy but not more than 12,500 cy at any one time) composting facilities that accept agricultural, green, and food material (including vegetative food material). As identified in that study, the entitlement and environmental review of small and medium compostable material handling facilities and operations has been historically approached in many different ways with some facilities and operations deemed non-discretionary (i.e., not a project under the California Environmental Quality Act [CEQA]) while others would involve preparation of either a Notice of Exemption, Negative Declaration, Mitigated Negative Declaration pursuant to CEQA requirements. This historic approach has led to challenges associated with permitting and development, following initial approval by the local jurisdiction. For context and since 2021, 10 small and 18 medium composting facilities and operations have been permitted or authorized by the solid waste local enforcement agency and recorded in CalRecycle's Solid Waste Information System (SWIS) database. To ensure that the State continues to achieve and exceed SB 1383 targets, it is reasonably foreseeable that the development of additional small and medium composting facilities is necessary, especially within more rural areas of the State.

To help facilitate the permitting and development of small and medium composting facilities and operations throughout the State, a programmatic EIR is being prepared. An objective of the program is to develop a consistent approach and to facilitate the permitting and regulatory approval process for these small and medium composting facilities and operations. The purpose of this Risk Assessment is to qualitatively assess the potential risks associated with the development and operation of small and medium composting facilities and operations to inform preparation of the programmatic EIR. This Risk Assessment looks at publicly available information related to potential contaminants of concern from the development and operations of compost facilities and operations, identifies potential exposure pathways for those identified contaminants to affect various media including soil, water, and air. Development of the Risk Assessment relied heavily on existing relevant resources including established regulatory composting guidelines and regulations outlined in the State Water Resources Control Board's (SWRCB) General Waste Discharge Requirements for Commercial Composting Operations Order WQ 2020-0012-DWQ (General Order; SWRCB 2020) and CalRecycle regulations pertaining to compostable material handling facilities and operations outlined in California Code of Regulations (CCR) Title 14 Chapter 3.1 Sections 17850 through 17895 (14 CCR). The Risk Assessment concludes with BMPs that could be implemented to reduce and mitigate potential risks associated with the operation of composting facilities and operations.

2 Program Description and Composting Options

2.1 Program Description

Based on the projected need for additional organic waste recycling capacity to achieve and maintain SB 1383 targets, it is estimated that capacity for approximately 506,000 additional tons of compostable material will be necessary by 2034 (CalRecycle n.d). Considering that composting facilities may be located where their target capacity may not be achieved, an additional 25% of capacity need has been applied to the estimated need for a total program volume of 632,500 tpy.

To provide adequate capacity for the forecasted increase in compostable material by 2034, it is estimated that the program may result in an additional 15 small composting operations and 25 medium composting facilities across California. This estimate is derived based on the average permitted capacity for small and medium composting facilities and operations since 2021 (i.e., over the last 5 years). It is also considered likely that small and medium composting facilities and operations would be developed beyond 2034, which are reflected as part of the total potential program development below. Table 2-1 provides estimates for key components of each facility and operation to be developed, the program by 2034, and the entire program.

Table 2-1. Small and Medium Composting Facilities and Operations Program

Per Facility	**Small**	**Medium**	
Allowable On-site capacity (at one time)	Up to 5,000 cy	5,000 – 12,500 cy	
Annual tonnage (tpy)	10,000	25,000	
Average acreage per facility	5	11	
Feedstock Type	Agricultural material, Green material, Vegetative food material	Agricultural material, Green material, Vegetative food material, Food material	
Program by 2034	**Small**	**Medium**	**Total**
# of Facilities	15	25	40
# of Facilities per Year (average)	Up to 3	Up to 4	Up to 7
Total acres of development	75	275	350
Annual tonnage (tpy)	150,000	625,000	775,000
Program Total			
# of Facilities	30	50	80

# of Facilities per Year (average)	Up to 3	Up to 4	Up to 7
Total acres of development	150	550	700
Annual tonnage (tpy)	300,000	1,250,000	1,550,000

Source: Data provided by CalRecycle 2026.

As noted in Table 2-1 and since 2021 (i.e., within a 5-year period), solid waste local enforcement agencies have permitted or authorized 10 small and 18 medium composting facilities and operations. Carrying forward that same ratio for small/medium composting facilities and operations over a similar 5-year period, up to 8 small composting operations and 13 medium composting facilities would be permitted or authorized. This would then translate into the projected development of 15 small and 25 medium composting activities by 2034 with additional development of composting facilities and operations beyond 2034 (as shown in Table 2-1). In addition, the program would allow for consistency of approach and mitigation of potentially significant impacts (through implementation of the BMPs and mitigation measures presented herein), which would be anticipated to streamline permitting of facilities developed under the program.

While micro-scale composting activities (i.e., backyard or community garden composting) is encouraged by CalRecycle to increase diversion from landfills, such activities are not subject to CalRecycle/Local Enforcement Agency oversight and are not expected to have a meaningful impact to the development of this Risk Assessment.

2.2 Overview of Commercial Composting Options Considered

This Risk Assessment evaluates the potential risk associated with the 2 basic and most commonly implemented commercial-scale composting methods: windrows and aerated static piles (ASPs). Most facilities/operations (except biosolids and manure composting facilities) start the composting process by grinding, shredding, or otherwise reducing the size of the incoming feedstock (i.e., the stream of organic waste being processed at a facility). Most facilities/operations remove physical contaminants, such as plastic, metal, and glass from incoming feedstock. After feedstock preparation, the materials are moved to the active composting phase.

- **Windrows** are elongated piles of material that can range from 8 to 20 feet wide, up to 10 feet tall, and hundreds of feet long. A machine that straddles the pile turns the windrow by moving along its length, churning the material, breaking up clumps, fluffing the pile, and moving materials to and from the pile core. This action enables all feedstock to be subject to the high internal temperatures of the pile, which reduces pathogens. Fluffing up the pile helps air reach into the pile core, facilitating high temperatures and rapid decomposition. Turning can also be accomplished with front end loaders.
- **Aerated Static Pile** composting, increasingly common in California, uses electric fans to push or pull air through the piles during the active composting phase. Positive aeration occurs when ambient air is blown into the pile; negative aeration occurs when air is drawn through the pile. ASPs are engineered to reduce pollutants such as volatile organic compounds (VOCs) and ammonia. Positive aeration systems may use fabric covers or a thick top layer of finished, unscreened compost that acts a biofilter and are often referred to as covered aerated static pile (CASP) composting. Negative aeration systems discharge air from the piles through a dedicated system that further reduces pollutants. Negative aeration systems

are typically equipped with filtration systems that filter emissions and air prior to discharge to the atmosphere. Therefore, this Risk Assessment assumes negative aeration systems are equipped with emission filtration systems.

Composting occurs in 2 basic phases:

- **Active phase:** Composting begins when temperatures exceed 122 degrees Fahrenheit (°F) or 50 degrees Celsius (°C) and continues as temperatures rise to more than 131°F or 55°C, beginning the Process to Further Reduce Pathogens (14 CCR, Section 17868.3). This stage may last up to a month for windrow composting and can be completed more rapidly for ASP composting. The active phase continues while compost matures. Temperatures decline but are still above ambient levels.
- **Curing phase:** After the initial high-temperature active phase, some facilities/operations cure compost to reduce organic acids and reduce phytotoxic compounds. The length of curing time varies considerably by facility.

After the composting process is completed, the finished compost is screened for size and for contaminants, before being sold. Any material that is screened out is often reprocessed or discarded if it is a physical contaminant. Finished composted material is then sold s as a soil amendment for agricultural, landscaping, and horticulture uses. Conventional and organic agricultural operations use most of the compost produced in California; however, it is also bagged and sold or given away to the general public, nurseries, and landscapers.

In-vessel composting is not evaluated for potential risk because it is less common than the methods discussed above and because there is naturally less environmental risk with composting within a containment structure like a vessel.

2.3 Feedstock Considered

Feedstock varies slightly between small and medium composting facilities/operations. For small composting operations, the Risk Assessment assumes feedstock will consist of agricultural material, green material, and vegetative food material. Medium composting facilities assume feedstock will consist of agricultural material, green material, food material, and vegetative food material,

3 Environmental Settings

The program area occurs throughout the State. Based on CalRecycle records, many commercial composting facilities/operations currently operating within the State are located in and around metropolitan centers (Los Angeles, Bay Area, San Diego, and Sacramento) and/or in the San Joaquin Valley. Facilities located outside of major urban areas are primarily located closer to large agricultural areas where compost is used. The location of existing and permitted composting facilities and operations are known within California; however, decisions by future project proponents regarding the precise location of a new composting facility or operation would be speculative at this time. Furthermore, due to local planning, political (i.e., the willingness of jurisdictions to address local opposition to new or expanded facilities/operations), and economic influences, attempting to predict future project approvals about the specific location and design of future composting facilities and operations undertaken in response to SB 1383 and other requirements would also be speculative.

Given the large program area (statewide), the unknown locations of future small and medium compositing facilities and operations, and the large variability of environmental and geographic settings present in California, there are a wide range of environmental settings small and medium composting facilities and operations can be sited. To practicably assess risk, this Risk Assessment looks at general composting activities described in Section 2.2 and how those operations potentially affect various media such as soil, water, and air.

3.1 Geology, Hydrogeology and Air

The potential area of development for the additional composting facilities and operations includes the entire state of California. Considering the geologic, geographic, and resource diversity within the State presents challenges in evaluating and assigning risk. As a result, the Risk Assessment considers specific soil, hydrogeologic (groundwater), surface water, and air quality scenarios that could represent potential risk as a result of small/medium composting facilities and operations.

3.1.1 Geology

There are 11 recognized naturally defined geologic regions, known as geomorphic provinces, in California that each display a distinct landscape. These geomorphic provinces vary from low-lying basins consisting of thousands of feet of accumulated sediment to high-elevation mountainous topography with little to no accumulated sediment to variations in between. The geology of each province influences the types of soil present, the hydrogeology of how groundwater flows through the subsurface, and how surface water travels across the landscape.

Types of soil and rocks found in California can be wide-ranging and highly variable depending on the bedrock they originate from, the depositional environment, and the geomorphic process to which they are constantly exposed. Soil can include fine grained sediments such as clays and silts, coarse grained sediments like sands and gravels, or a combination thereof. The complex geologic history of California provides a diverse range of bedrock including igneous rocks such as granite and basalt, metamorphic rocks such as schist and marble, and sedimentary rocks such as limestone and sandstone. For the purposes of this Risk Assessment, the various soil and bedrock types found in California will collectively be referred to as soil and will refer to the top tens of feet of the subsurface because this depth will have the most effect on and be the most affected by composting activities.

Infiltration of leachate generated at a facility into and through the vadose zone is one of the pathways considered. There are many characteristics of soil that affect the fate and transport of composting related contaminants through the vadose zone (unsaturated zone) including grain size, mineral composition, and moisture content. Of the various characteristics of soil that can influence the fate and transport of leachate, the percolation rate is likely the biggest contributor and therefore used as a proxy for assigning risk to soil and groundwater from composting activities. The greater the percolation rate, the greater the ability of soil to transmit leachate. Soil types such as clays, silts, and unfractured bedrock have lower percolation rates and are typically found to retard flow into and/or through the subsurface. Soil types such as coarse sands, gravels, and fractured bedrock typically have higher percolation rates allowing leachate to move relatively faster into and/or through the subsurface. The approach of using percolation rates as a proxy is consistent with the SWRCB's General Order that uses percolation rate for establishing criteria for siting a composting facility and operation to protect water quality. For the purposes of this Risk Assessment, this analysis uses the guidance of the General Order to evaluate risk from small and medium composting facilities and operations.

3.1.2 Hydrogeology (Groundwater and Surface Water)

Statewide water quality is managed by the SWRCB who delegates authority and responsibility to 9 Regional Water Quality Control Boards (RWQCBs). The RWQCB boundaries are geographically differentiated based on watershed and water quality requirements because of the diverse hydrogeologic conditions across the State. Water resources consist of groundwater and surface water including rivers, streams, lakes, reservoirs, wetlands, and coastal water. Groundwater is held within the pore spaces of soil such as sands, gravels, and other sediments commonly referred to as alluvium and within fractured permeable rocks. These natural subsurface storages of groundwater are known as aquifers. The Department of Water Resources (DWR) has identified 515 alluvial groundwater basins across the State, which encompasses over 40% of the State's area (DWR 2026: H-44). Depth to groundwater can range from shallow depths, less than 10 feet like commonly observed in the Bay Area of Northern California, to greater depths of tens to hundreds of feet, like commonly observed in the Central Valley or in desert environments.

The RWQCBs protect water quality across the State by designating current and potential future beneficial uses of groundwater and surface water, establishing water quality objectives, and implementing water quality control plans (basin plans). Common beneficial uses of groundwater include municipal and domestic water supply, agricultural use, industrial water supply, and surface water replenishment. Common beneficial uses of surface waters include municipal and domestic water supply, agricultural supply, industrial water supply, ecological and wildlife habitats, recreational uses, flood protection, groundwater recharge, and water quality enhancement. Water quality objectives are established in the basin plans to set water quality standards that protect beneficial uses. To ensure those water quality standards are met, the RWQCBs issue permits known as Waste Discharge Requirements (WDRs) to regulate land use activities that discharge or have the potential to discharge waste to land, groundwater, or surface water that could degrade water quality. Common land use activities that require a WDR include agricultural and forestry operations, industrial facilities, wastewater treatment plants, landfills, and composting facilities/operations. Many factors influence risk to water quality, such as type and volume of waste, depth to groundwater, distance to surface water, site-specific rainfall amounts, and soil type. To promote composting activities and streamline the permitting process, the SWRQCB developed the General Order to protect water quality statewide by establishing guidelines that consider risk to water from composting activities. The General Order establishes percolation rate and minimum depth to groundwater criteria and setback distances to surface water bodies and water supply wells for siting of compost facilities and operations. For the

purposes of this Risk Assessment, this analysis relies upon the guidance of the General Order to evaluate risk to groundwater and surface water from small and medium composting facilities and operations.

3.1.3 Air Contaminants

Program activities may occur in any of California's 15 air basins and within the jurisdiction of any of California's 35 local air districts. The ambient concentrations of air contaminants within these basins are established by the concentration of emissions released by the sources of air contaminants and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions within California are influenced by such natural factors as topography, meteorology, and climate as well as the concentration of emissions released by existing air contaminant sources. Air pollution can also move freely within and between air basins; therefore, air pollution generated in one basin may degrade the air quality within an adjacent basin. Air quality within California is regulated by the U.S. Environmental Protection Agency (EPA), CARB, and local air districts through and in compliance with a variety of federal, state, regional, and local regulations, including the federal Clean Air Act (CAA), California Clean Air Act (CCAA), and air district rules and regulations pertaining to ambient air quality standards (both national and state). For the purposes of this Risk Assessment, this analysis uses the guidance of and evaluates potential risks associated with Bay Area Air Quality Management District (BAAQMD), South Coast Air Quality Management District (SCAQMD), San Joaquin Valley Air Pollution Control District (SJVAPCD), and San Diego Air Pollution Control District (SDAPCD).

Within the context of this Risk Assessment, the potential risks of a particular set of air contaminants is considered. Toxic Air Contaminants (TACs) are air contaminants that may cause adverse health effects, including cancer and non-cancer health impacts. Diesel particulate matter (DPM), a common TAC emitted by diesel-fueled vehicles and equipment, is often the primary contributor to health risk impacts from facility operations. Long-term exposure to elevated TAC concentrations may increase cancer risk and contribute to respiratory and other chronic health effects.

3.1.4 Odors

An odor is the sensation that the human brain generates in response to certain chemicals breathed in through the nose. The perception of odor depends on both the characteristics and concentration of the odorant and the characteristics of the person smelling the odorant. An objectionable odor to one person can be tolerable to another.

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of (and distance to) sensitive receptors. Offensive odors can be unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose individuals to objectionable odors are deemed to have a significant impact. Typical facilities that generate odors include wastewater treatment facilities, sanitary landfills, composting facilities, petroleum refineries, chemical manufacturing plants, and food processing facilities.

Many compounds formed during composting are "odorous," which are considered offensive by at least some people. Several individual compounds that can be emitted from a compost facility stand out as odorous, such as ammonia and hydrogen sulfide. However, because of the large number of chemical species involved with composting, odorous compounds are frequently identified by categories of similar chemicals. The primary

categories associated with organic materials present in the feedstock and byproducts of decomposition include mercaptans, organic sulfides, ammonia, amines, indoles, volatile fatty acids (VFAs), terpenes, alcohols, ketones and aldehydes. Mercaptans, organic sulfides, and hydrogen sulfide are compounds that contain sulfur. Amines, indoles, and ammonia are nitrogen-based compounds. VFAs are most closely associated with carbohydrates and lipids (i.e., fats and oils). The remaining groups are common organic compounds with volatile members.

3.2 Geography

California geography consists of mountainous terrain, arid low-land and high-land deserts, coastal and alpine forests, deltaic landscapes, and large valleys resulting in different climates found within the State. These varying climates can have large temperature differences and significant annual precipitation amounts within relatively proximity to each other. Local geographic, geologic, hydrogeologic, and meteorological conditions can affect how contaminants are transported, dispersed, transformed, and removed from the environment, ultimately influencing contaminant concentrations at receptor locations. Factors such as distance from the source, prevailing wind patterns, atmospheric conditions, terrain, land use, soil and hydrogeologic conditions, and release characteristics may affect the distribution of contaminants in the surrounding area. The State is also home to large metropolitan areas with millions of residents as well as smaller rural communities. To meet the program's goal of 40 new composting facilities and operations by 2034, the development of small and medium composting facilities and operations will likely occur in both urban and rural areas. These new composting facilities and operations may be constructed to expand existing solid waste operations/facilities or may consist of new sites constructed on vacant native land and/or on vacant land previously used for other purposes. This Risk Assessment evaluates risk associated with the construction and operation of compositing facilities in urban and rural areas as well as native and previously developed land.

The Prioritization Score methodology used in the air quality portion of this Risk Assessment does not account for geographic features such as local terrain, topography, meteorology, or other factors that may influence contaminant dispersion. The methodology is intended to provide a conservative screening-level assessment of potential health impacts and does not incorporate local dispersion characteristics. These site-specific factors can be evaluated through refined air dispersion modeling.

3.3 Receptors

Receptors considered for this Risk Assessment are divided into 2 categories, 1) the environment and 2) human population. The environmental receptors include soil, groundwater, surface water, and air. Evaluation of risk to receptors looks at how composting activities could potentially affect the environment (soil, water, and air) and how human receptors may be exposed to the potentially contaminated environment. Risk to soil from composting activities is considered limited in extent to soil at the facility. Therefore, risk from contaminated soil is only considered for facility workers.

With respect to the human population category and specific to air quality and odors, the assessment is primarily oriented towards facility workers. This Risk Assessment evaluates potential air quality/odor risks to several receptor types. The methodology follows the Emissions and Potency Procedure in the California Air Pollution Control Officers Association's (CAPCOA's) guidelines, where emission data are combined with applicable Office of Environmental Health Hazard Assessment (OEHHA) health values and receptor distance adjustment factors to calculate separate Prioritization Scores for residential cancer, worker cancer, chronic non-cancer, and acute non-

cancer risk. The worker cancer Prioritization Score was calculated using SDAPCD's method of applying a 0.3 factor to the residential cancer Prioritization Score.

- Residential Cancer Risk: Evaluates health risk from lifetime exposure to emissions at residential and other sensitive receptor locations. Other sensitive receptors include hospitals, K-12 schools, daycare centers, and elder care facilities. Residential cancer risk is typically assessed using a 30-year exposure duration.
- Worker Cancer Risk: Evaluates health risk from long-term exposure to individuals at long-term business locations (i.e., commercial office and retail). Worker cancer risk is typically assessed using a 25-year exposure duration.
- Chronic Risk: Evaluates health risk from long-term (1-year) exposure to emissions. Chronic receptors include locations where an individual could reasonably be expected to spend time over the better part of the year.
- Acute Risk: Evaluates health risk from short-term (1-hour) exposure to emissions. Acute receptors include any location where an individual could reasonably be present for at least 1 hour during a day.

4 Exposure Pathways

Contaminants associated with compost and the operation of a compost activity can migrate into the environment in a variety of ways including direct contact, leaching, wind dispersion, and run-off discharge into surface water which can then ultimately be exposed to the human population through dermal contact, inhalation, and ingestion and potentially cause adverse effects. The following sections discuss potential exposure pathways to each environmental media from composting facilities and operations and how contaminated environmental media can result in human exposure.

4.1 Soil

Soil can be impacted by feedstock from direct contact and leachate from feedstock moving the through the soil column. Humans can be exposed to contaminated soil through direct contact, ingestion, and inhalation of dust.

4.2 Water

4.2.1 Groundwater

Groundwater can be exposed to contaminants associated with the operation of a composting activity from leachate migrating through the subsurface. Exposure pathways from contaminated groundwater to humans consist of ingestion and direct contact from contaminant plume migration to water supply wells.

4.2.2 Surface Water

Exposure of surface water bodies to contaminants associated with the operation of a composting activity consist of run-off of leachate and stormwater that has contacted feedstock, discharge of contaminated groundwater into surface water bodies, and wind dispersion of contaminated soil, compost, and feedstock particulates. Humans can be exposed to contaminated surface water through direct contact and ingestion.

4.3 Air

Exposure of affected air quality and odors from the operation of a composting activity to the human population can occur through inhalation. However, with respect to air quality and odors, the Prioritization Score methodology does not evaluate exposure pathways and instead considers contaminant potency, toxicity, emission rates, and proximity to receptors.

5 Evaluation of Risk to the Environment and Human Health

The following sections discuss potential risks to the environment and human health based on the exposure pathways discussed above and consider commercial composting options including windrow, ASP, and CASP, and the contaminants typically associated with the feedstock considered under this program (agricultural material, green material, and food material (including vegetative food material)). Because specific locations or facility designs are unknown, this Risk Assessment evaluates the general operations of small and medium composting facilities and operations and identifies potential risk to the environment and human health. The current regulatory permitting requirements for the development and operation of composting facilities in the State were reviewed to evaluate how they addressed the identified risks. These regulatory frameworks include the SWRQCB General Order and 14 CCR Chapter 3.1 Sections 17850 through 17895 for soil, groundwater and surface water, and BAAQMD, SCAQMD, SJVAPCD, and SDAPCD for air quality and odors.

Small composting operations under this program may receive feedstock consisting of agricultural material, green material and vegetative food material, andmedium composting facilities may receive the same feedstocks with the addition of food material. The source and type of feedstock are the primary factors in which contaminants may be found in composting materials. Contaminants commonly associated with agricultural material, green material, food material, and vegetative food material feedstocks include plastics, metals, pesticides, nutrients and salts, and pathogens (Chm2Hill 2004: 11 and Governo 2003: 23). The contaminants for both the small and medium composting facilities and operations are generally the same, however, there is greater potential for pathogens to be present at medium composting facilities due to the food material they can receive.

5.1 Environment (Soil and Water) Risk Assessment

The most significant risk to soil and water comes from leachate generated during composting. Leachate is the liquid from feedstock and compost material that is generated either from the moisture of the feedstock and compost or from water that contacts and passes through the feedstock and compost material. Leachate may contain dissolved metals, salts, plastics, suspended solids, and pathogens. The risk of leachate contaminating the environment is the mobilization of contaminants present in leachate as it drains from feedstock and compost piles and can be of greater concern in localities that receive higher amounts of precipitation, have shallow groundwater, have soil with high permeability, or during storm events. This discussion considers the degree to which existing regulation, especially the General Order, addresses risk.

The General Order uses a tiered system to classify composting facilities based on potential risk to the environment. The General Order classifies composting activities into 2 tiers (Tier 1 and Tier 2) based on volume and type of feedstock, proximity to surface water and water supply wells, and depth to groundwater versus soil percolation rates. Tier 1 composting activities are considered less likely to affect water quality than Tier 2 composting activities. Assuming small composting operations meet the minimum setback distance to surface water and water supply wells of 100 feet and the soil percolation rate and minimum depth to groundwater criteria, they would classify as a Tier 1 composting activity. If they cannot meet the minimum setback distance and soil percolation rate and minimum depth to groundwater, they would be classified as a Tier 2 composting activity. Medium composting facilities would fall under Tier 2 because they could accept food material. The different requirements between Tier 1 and Tier 2 composting activities and how they address potential risk are discussed further in the following sections.

5.1.1 Soil

Soil can be contaminated from composting operations by leachate migrating into the underlying surface soil and, to a lesser extent, from direct contact between the surface soil and feedstock and compost material. Composting activities generally will not be a source of widespread soil contamination and will likely be limited to localized areas where feedstock and compost are stored. Windrow, ASP, and CASP composting methodologies are commonly performed on areas of bare soil. The repeated long-term use of these areas can contribute to the accumulation of plastics, metals, pesticides, nutrients, and pathogens on shallow and surficial soil, and into deeper subsurface soil from leachate. Soil with low percolation rates will have low risk from leachate infiltration and soil with high percolation rates will have high risk from leachate infiltration. Additionally, poor facility surface drainage may promote leachate to pond and infiltrate into the subsurface. Ponding in compost storage and process areas with high percolation rates can create conditions conducive to contaminant migration into the subsurface. If left unmitigated, risk to soil at composting facilities and operations facilities will be present.

Exposed surface soil that may contain contaminants can be subject to increased erosion during precipitation and storm events. Stormwater that enters a facility as run-on and leaves a facility as run-off has the potential risk to mobile soil contaminated by the operation of a composting activity. If a minimal amount of stormwater is able to contact soil, the risk of contaminated soil erosion is low. If a large amount of stormwater is able to contact soil, the risk of contaminated soil erosion is high.

The General Order focuses on protection of groundwater and surface water. However, compliance with requirements of Tier 1 and Tier 2 composting activities would address the potential risk to soil from composting activities. These include:

- Design of facilities and operations to manage a 25-year, 24-hour peak storm event at a minimum to prevent or limit sediment laden stormwater run-on and/or run-off.
- Grade working surfaces to facilitate drainage and minimize ponding by sloping or crowning composting pads to reduce infiltration.
- For Tier 1 composting activities, meet the soil percolation rate and minimum depth to groundwater criteria.
- For Tier 2 composting activities, surfaces and drainage ditches to be constructed of compacted fine grained soil (like clay), asphaltic-concrete, or equivalent.
- Requires routine inspection and monitoring of all facility and operation drainage systems and engineered working surfaces.

These General Order requirements address the risk to soil by requiring adequate facility drainage to minimize ponding on composting pads to limit the infiltration of leachate into the subsurface, ensuring facilities can handle stormwater run-on and run-off from a moderately-sized precipitation event, and establishing minimum soil and depth to groundwater criteria that must be met to demonstrate low risk. If the minimum soil and depth to groundwater criteria cannot be met, then an engineered surface with low percolation rates must be constructed.

5.1.2 Water

The primary objective of the General Order is to protect water quality, both surface water and groundwater. The potential risks to surface water and groundwater are identified within the following applicable sections, Surface Water and Groundwater.. The requirements of the General Order were developed to be protective of water quality across the State based on geologic and hydrogeologic conditions and can be applied statewide where a composting facility and operation may be sited. Because the locations of composting facilities and operations under this program are unknown, the General Order proves to be a useful tool to provide mitigation measures to the risks identified in this Risk Assessment. Compliance with the General Order requirements by the program's future composting facilities and operations will reduce potential risk to water from composting operations.

Surface Water

Risk to surface water from small and medium composting facilities and operations comes from run-off of stormwater that has interacted with composting material or contaminated soil, and run-off of leachate. If a minimal amount of stormwater is able to contact compost material or contaminated soil, the risk to surface water from contaminated run-off is low. If a large amount of stormwater is able to contact compost material or contaminated soil, the risk to surface water from contaminated run-off is high. Improperly graded compost facilities and operations could promote run-off if graded too steeply and/or if the site is designed with inadequate drainage capacity and conveyance infrastructure. Compost facilities and operations in localities with little to no topographical relief have a low risk to surface water from contaminated run-off. Compost facilities and operations located in localities with large topographical relief have a high risk to surface water from contaminated run-off. Additionally, risk to surface water is influenced by the distance to a composting facility and operation due to potentially contaminated run-off. Compost facilities and operations sited further away than the minimum setback distance of 100 feet (per the General Order) have a low risk of affecting a surface water body from run-off. Compost facilities and operations sited closer than the minimum setback distance of 100 feet have a high risk of affecting a surface water body from run-off.

The General Order addresses these potential risks through the following requirements:

- A setback distance of at least 100 feet to the nearest surface water body.
- Facilities are to be designed and constructed to control and manage all run-off for a 25-year, 24-hour peak storm event, at a minimum.
- A Water and Wastewater Management Plan must be prepared and approved demonstrating how the facility and operation will manage run-off and run-on.
- Berms must be constructed to prevent run-off/run-on from a 25-year, 24-hour peak storm event, at a minimum. In addition, the soil percolation rate and depth to groundwater criteria for Tier 1 activities must be met, or the facility surface must be engineered with low percolation rates to prevent or limit infiltration of leachate into the subsurface.
- Drainage systems must be properly designed and constructed and must be inspected and cleaned out annually prior to wet season.
- Routine inspection and monitoring of all facility and operation drainage systems and engineered working surfaces.

The General Order addresses risk to surface water by establishing requirements that can handle wastewater as well as stormwater run-on and run-off from a moderately-sized precipitation event, and siting distances to provide a distance buffer. In addition, the General Order requires facilities to ensure on-site water management systems operate as intended through routine inspection and maintenance.

Groundwater

Risk to groundwater from small and medium composting facilities and operations comes from leachate infiltration through the subsurface and into the water table, as well as leachate reaching the water table through a preferential pathway such as a water supply well. Leachate can transport elevated levels of dissolved metals, salts, suspended solids, plastics, and pathogens into the water table that can exceed water quality objectives established in basin plans. Soil percolation rate coupled with depth to groundwater are primary factors that influence risk to groundwater quality from composting facilities and operations, as demonstrated in the General Order's soil percolation rate ranges and depth to groundwater criteria for Tier 1 activities. Soils with a low percolation rate and deep depth to groundwater have low risk to groundwater. Soils with a low percolation rate and shallow depth to groundwater have a low to moderate risk to groundwater. Soils with a high percolation rate and deep depth to groundwater have a low to moderate risk to groundwater. Soils with a high percolation rate and a shallow depth to groundwater have a high risk to groundwater.

The General Order addresses these potential risks through the following requirements:

- Facility and operation siting conditions must meet soil percolation rates and depths to groundwater criteria to be classified as Tier 1. The higher the soil percolation rate (i.e. the faster a liquid can move through soil) the deeper the required minimum depth to groundwater. For example, a soil percolation rate of less than 1 minute per inch is required to have a minimum depth to groundwater of 50 feet and a soil percolation rate of greater than 30 minutes per inch is required to have a minimum depth to groundwater of 5 feet.
- If manure is a component of the feedstock from agricultural material, a Groundwater Protection Monitoring Plan is required to monitor and identify any potential impacts to groundwater before they occur. This would include installing a network of groundwater monitoring wells that must be monitored and sampled on a routine basis.
- Composting facilities and operations that do not meet the soil percolation and depth to groundwater criteria are classified as Tier 2 and require additional engineering controls such as clay liners and geomembrane underlying compost processing areas with associated subsurface monitoring points.
- Routine inspection and monitoring of all facility and operation drainage and monitoring systems.

The General Order addresses risk to groundwater by reducing or eliminating the likelihood of leachate reaching groundwater through soil percolation rates and depth to groundwater setback limits. Required monitoring directly below engineering controls such as clay liners and geomembrane identifies leachate infiltration before reaching groundwater.

5.2 Human Health Risk Assessment

This human health risks assessment looks at potential risks from environmental media (soil, water, and air) that may be contaminated from composting facilities and operations and directly from the compost and feedstock material.

5.2.1 Air

TAC emissions from small and medium composting facilities and operations include DPM, a known carcinogen, from haul truck activity, mobile sources including front end loaders, and stationary sources such as the engines driving screens and grinders. Composting may emit TAC from the decomposition of organic waste, and material handling operations may emit TAC in the form of dust. TAC emissions are evaluated to ensure that adverse acute, chronic, and carcinogenic health risk impacts exceeding regulatory thresholds do not occur as a result of the program.

Small and medium composting facilities and operations would result in stationary source emissions of TACs. However, these composting activities would be expected to be sited within an appropriate land use (i.e., industrial) and typically would not be located within 1,000 feet of a sensitive receptor. The stationary sources would be subject to permitting as required by the applicable air district. To obtain a stationary source permit from an air district, the facility operator would have to demonstrate that operations do not expose sensitive receptors to an incremental increase in cancer risk (e.g., one that exceeds 10 in one million) or hazard index value (e.g., 1.0 or greater). Therefore, operation of a composting facilities and operations under the proposed program would likely not expose off-site sensitive receptors to TAC concentrations due to stationary source emissions. Nonetheless, because operation of small or medium compost facility and operationconstructed under the proposed program would require the operation of diesel-fueled vehicles and heavy-duty equipment, compost facilities and operations could emit mobile-source TAC emissions resulting in health risk impacts exceeding an applicable threshold of significance. Therefore, evaluation of health risk impacts due to air emissions is appropriate.

Toxics

Methodology

Because of the statewide nature of the program and the fact that it does not identify specific locations or operational designs, this air toxics risk analysis was based on a series of representative composting scenarios. The scenarios were developed to capture the range of facility sizes, feedstocks, and composting technologies anticipated under the program.

Six scenarios were evaluated, representing small and medium composting facilities and operations utilizing windrow, positive CASP, and negative ASP systems. Small composting operations were assumed to have an on-site capacity of up to 5,000 cy and process up to 10,000 tpy of green material, agriculture material and vegetative food material). Medium composting facilities were assumed to have an on-site capacity of up to 12,500 cy and process up to 25,000 tpy of green material, agriculture material, food material (including vegetative food material). The scenarios and associated operating assumptions are included in Appendix A. Simplified descriptions of the scenarios are listed in Table 5-1.

Table 5-1. Representative Composting Facility Scenarios

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Facility Type	Small	Small	Small	Medium	Medium	Medium
Composting Technology	Windrows	Positive CASP	Negative ASP with Filter	Windrows	Positive CASP	Negative ASP with Filter
Throughput	10,000 tpy	10,000 tpy	10,000 tpy	25,000 tpy	25,000 tpy	25,000 tpy

Operation of a compost facility and operaton would produce emissions of air contaminants from fuel combustion in stationary and mobile sources, decomposition of organic materials, and use of processing equipment. Toxics emissions estimates were prepared for the mobile and stationary emission sources required to operate the 6 representative composting scenarios described in Table 5-1. Emissions estimates have been prepared for the following stationary source categories:

- Stationary diesel engine exhaust criteria pollutant emissions for grinders, screens, stackers, colorizers, and emergency engines;
- Feedstock storage, composting, curing, and finished compost storage VOC, organic TAC and ammonia (NH3) emissions;
- Grinding, screening, material handling, and wind erosion Dust and Particulate TAC Emissions; and
- Stationary diesel engine exhaust DPM emissions.

And the following mobile-source categories:

- Vehicle and Equipment Exhaust TAC Emissions:
    - Diesel Exhaust Emissions (i.e., DPM); and
    - Gasoline Exhaust Emissions;
- Paved Road Dust TAC Emissions; and
- Unpaved Road Dust TAC Emissions.

For each category of emissions, emission calculation worksheets including the data and assumptions used in the calculations are provided in Appendix A.

Baseline operations for all scenarios assume that the feedstock would otherwise be sent to a landfill. For this analysis, it was assumed that TAC emissions at a compost facility and operation would be new emissions, and landfill emissions of these contaminants are not estimated. As a practical matter, the TAC emissions have localized impacts, thus emissions of these contaminants from a remote landfill would not factor into the analyses of impacts at the composting sites.

For feedstock truck trips, there are 3 possibilities: 1) the distance to a new composting facility and operation is shorter than the distance to a landfill; 2) the distance is the same as the distance to a landfill; and 3) the distance to a new composting facility and operation is greater than the distance to a landfill. In the first 2 possibilities,

emissions from truck travel would decrease or be unchanged. To ensure that project emissions are not underestimated, only the third possibility was included in emission calculations; feedstock truck trip distance to a landfill was subtracted from the truck trip distance to a composting facility and operation. This difference from baseline is incorporated into the project emissions by using the difference in distance in the calculations; the baseline emissions from feedstock trucks are not presented separately.

It is likely that composting facilities and operations will be located closer to feedstock sources than landfills because the largest feedstock sources (i.e., agriculture facilities) are also often the largest users of finished compost, which provides additional incentive to locate composting facilities and operations facilities close to the feedstock sources.

Risk Evaluation

To assess the potential health risks from a project to sensitive receptors, the TAC emissions from the implementation of the program are assessed in accordance with regulatory guidelines. This analysis is based on the OEHHA "Hot Spot" guidance document (OEHHA 2015) and the CAPCOA "Air Toxics 'Hot Spots' Program Facility Prioritization Guidelines" (CAPCOA 2016).

The CAPCOA prioritization guidelines outline a technique for calculating a Prioritization Score that helps air districts identify priority compost activities for Risk Assessment, which involves consideration of TAC potency, toxicity, quantity of emissions, and proximity to sensitive receptors, such as hospitals, schools, daycare centers, worksites, and residences.

As noted above, Prioritization Scores were calculated using the Emissions and Potency Procedure in the CAPCOA's guidelines. Emission data are combined with applicable OEHHA health values and receptor distance adjustment factors to calculate separate Prioritization Scores for residential cancer, worker cancer, chronic non-cancer, and acute non-cancer risk. The worker cancer Prioritization Score was calculated using the SDAPCD method of applying a 0.3 factor to the residential cancer Prioritization Score.

- Residential Cancer Risk: Evaluates health risk from lifetime exposure to emissions at residential and sensitive receptor locations. Sensitive receptors include hospitals, K-12 schools, daycare centers, and elder care facilities. Residential cancer risk is typically assessed using a 30-year exposure duration.
- Worker Cancer Risk: Evaluates health risk from long-term exposure to individuals at long-term business locations. Worker cancer risk is typically assessed using a 25-year exposure duration.
- Chronic Risk: Evaluates health risk from long-term (1-year) exposure to emissions. Chronic receptors include locations where an individual could reasonably be expected to spend time over the better part of the year.
- Acute Risk: Evaluates health risk from short-term (1-hour) exposure to emissions. Acute receptors include any location where an individual could reasonably be present for at least 1 hour during a day.

TAC emissions calculations are provided in Appendix A. TAC emission sources include the DPM emissions from the diesel engines used to screen and grind waste materials and compost, on-road haul trucks, and off-road mobile equipment (e.g., loaders), and NH3 and organic TACs from composting activities, and toxic components of dust from material handling activities.

To assess the potential health risk from the 6 composting scenarios, Prioritization Scores were calculated at various receptor distances using the TAC emissions estimated for that scenario. Additionally, receptor distances

were back-calculated for each scenario to determine the minimum distances at which the facility would be classified as high, intermediate, or low priority based on the applicable Prioritization Score thresholds. Detailed information/results by scenario and distance are presented in Appendix B.

Each air district sets their Prioritization Score thresholds to be used for project-specific evaluations. Table 5-2 summarizes the thresholds for the 4 districts reviewed.

Table 5-2. Prioritization Score Thresholds

Air District	Prioritization Score Threshold Category	Prioritization Score Cancer Risk Thresholds	Prioritization Score Chronic/Acute Risk Threshold	Potentially Significant?
BAAQMD, SJVAPCD, and SCAQMD	High	≥10	≥10	Yes
	Intermediate	≥1 and <10	≥1 and <10	Yes
	Low	<1	<1	No
SDAPCD	High	≥100	≥10	Yes
	Intermediate	≥1 and <100	≥1 and <10	Yes
	Low	<1	<1	No

The significance of the thresholds are described below:

- High Score: Projects having a high Prioritization Score may have high risk. A refined Health Risk Assessment is recommended to determine if a Project's TAC emissions would have significant health risk impacts. Thus, this score is considered to have a Potentially Significant human health impact and would necessitate a more detailed analysis for a project-level CEQA review.
- Intermediate Score: Projects with an intermediate Prioritization Score, may require further analysis to determine if the Project's TAC emissions would have significant health risk impacts. Many air districts consider projects with an intermediate Prioritization Score to be unlikely to have an adverse health risk, although some districts may require additional analysis. Consultation with the local air district or lead agency would be required to determine if the Project's TAC emissions have a less than significant human health impact. Therefore, this score is considered to have a Potentially Significant impact on human health and would necessitate a more detailed analysis for a project-level CEQA review.
- Low Score: Projects with a low Prioritization Score are unlikely to have an adverse health risk, thus are considered to have a Less Than Significant human health impact.

The Health Risk Assessment screening conducted for this study estimates the residential and worker cancer risk, as well as potential chronic and acute non-cancer risks, associated with the 6 scenarios. The results were then used to establish screening distances (i.e., minimum distances from source to receptor) to ensure less than significant health risks impacts to residential and worker receptors would occur. The results of this are shown in

Table 5-3 for each scenario. These distances were determined using the Prioritization Score calculation methodology. Scenarios that achieved a low priority score are assigned a significance determination of Less Than Significant, which is the same across all air districts evaluated (BAAQMD, SJVAPCD, SCAQMD, and SDAPCD), as well as most other districts.

In cases where the distance between the source (i.e., the project) and the nearest receptor is less than the distance shown in Table 5-3 (which indicates a potentially significant impact), individual project proponents should conduct Health Risk Assessment modeling pursuant to the most recent guidance published by OEHHA. Each Health Risk Assessment should incorporate TAC emissions from the proposed project sources specific to that facility, including mobile and stationary sources.

For example, under Scenario 1, if there are no residential receptors within 2,185 feet and, no worker receptors within 1,198 feet of a proposed facility, that project would be considered to have less than significant health risk impacts associated with air toxics. If there are residential receptors within 2,185 feet, or worker receptors within 1,198 feet, that project would be considered to have potentially significant health risk impacts associated with air toxics, and a project-specific Health Risk Assessment should be conducted in accordance with OEHHA and CAPCOA guidelines. The same interpretation applies to the remaining scenarios using the corresponding distances shown in the table. The results of the detailed analysis for each scenario is provided in Appendix B.

Table 5-3. Minimum Distances to Residential and Worker Receptors for Less Than Significant Impact by Scenario for Four Air Districts

Scenario	Minimum Distance to Residential Receptors for Less Than Significant Impact (feet)	Minimum Distance to Worker Receptors for Less Than Significant Impact (feet)
1 (Small Windrow Operation)	2,185	1,198
2 (Small CASP Operation)	1,906	1,043
3 (Small, Negative ASP w/ Filter Operation)	1,874	1,027
4 (Medium Windrow Facility)	3,268	1,792
5 (Medium CASP Facility)	2,792	1,528
6 (Medium, Negative ASP w/ Filter Facility)	2,740	1,500

Note: Residential and worker receptor distances correspond to the residential cancer risk and worker cancer risk thresholds, respectively. For all scenarios, the calculated acute and chronic non-cancer risk distances were less than the corresponding cancer risk distances; therefore, cancer risk is the limiting criterion. Compliance with the cancer risk distance also ensures compliance with the acute and chronic non-cancer risk distance thresholds.

Odor

Construction activities are not a substantial source of objectionable odors. Temporary exhaust emissions from construction equipment may be noticeable in the immediate vicinity of active construction areas, but such emissions would be localized and short-term in duration. Accordingly, construction-related odor impacts would not be considered substantial.

With respect to operation, composting facilities and operations have the potential to generate objectionable odors associated with feedstock handling, active composting, curing, screening, product storage, and other operational activities. The magnitude of potential odor impacts depends on facility size, composting technology, operating practices, meteorological conditions, and the proximity of sensitive receptors. Local jurisdictions with land use authority can and should require individual projects to be consistent with applicable local plans, policies, regulations, and development standards, including any applicable setbacks or buffer zones for potentially odorous operations, as part of project approval and environmental review processes.

The implementation of BMPs for composting facilities and operations would help to minimize the potential for objectionable odors to be perceived off-site from small and medium composting facilities and operations. These measures may be incorporated into permit conditions by the air districts for permitted facilities, into the Odor Impact Minimization Plan (OIMP), implemented voluntarily by a facility and operation as a BMP to minimize odor impacts, or required as CEQA mitigation. With proper site selection, implementation of the required OIMP, and adoption of the appropriate BMPs (either required by permit conditions or adopted voluntarily), odor impacts would be less than significant.

5.2.2 Soil

Because soil contamination from composting facilities and operations is likely to be limited to the immediate vicinity of compost material storage and processing, the greatest risk from contaminated soil is to facility personnel. Facility personnel are performing the feedstock receiving and processing, staging the compost piles, turning and fluffing the piles (if using the windrow methodology), and preparing the mature compost for distribution. Facility personnel could come into direct contact with contaminated surface soil accumulated in the composting storage and processing areas. Dry soil conditions could create a potential inhalation hazard from contaminated dust.

The most effective mitigation measures to protect human health from contaminated soil are to mitigate the potential risk to soil from composting activities by controlling the source of contamination and implementing the General Order requirements list above in Section 5.1.1.

5.2.3 Water (Surface and Groundwater)

Risk to human health from impacted surface water and groundwater can result from contact and ingestion during common uses such as recreational, agricultural, and domestic and municipal supply. The degree of risk is dependent upon many factors including the source and feedstock type as this will influence the potential contaminants present, the contaminant concentrations effecting water quality, the receiving water chemistry, the sensitivity of the receptors, and the exposure duration.

The most effective mitigation measures to protect human health from contaminated surface water and groundwater are to mitigate the potential risk to water from composting activities by controlling the source of contamination by implementing the General Order requirements list above in Section 5.1.2.

5.2.4 Compost and Feedstock

Feedstock and compost are the source of contamination to the environment and ultimately to human health. However, these materials can directly have adverse health effects on compost facility/operation personnel and end users of the mature compost. These risks include physical contaminants (plastics, glass, debris, etc.) present in the feedstock, the inclusion of feedstock types not covered under this program such as animal carcasses and biosolids, and elevated contaminant concentrations in feedstock before reduction during the composting process. Compost facility/operation personnel and end users may come into direct contact with these contaminants if the feedstock is improperly processed, screened, and composted. Improperly screened and processed feedstock has a high risk of exposure to physical contaminants in compost. Properly screened and processed feedstock has a low risk of exposure to physical contaminants in compost. Compost that has not gone through the Process to Further Reduce Pathogens long enough has a high risk of containing elevated pathogen levels. Compost that has gone through Process to Further Reduce Pathogens long enough has a low risk of containing elevated pathogen levels.

Composting facilities and operations are regulated by 14 CCR and are required to perform the following procedures which greatly reduce the risk associated with compost and feedstock.

- Random and routine load checks of feedstocks for contaminants (14 CCR Section 17867).
- Ensure maximum allowable metal concentrations in compost prior to distribution (14 CCR Section 17868.2).
- Pathogen reduction procedures (14 CCR Section 17868.3) including:
    - Windrow process must keep compost at a temperature of 155 °F or higher from at least 15 days
    - ASP or CASP must have at least 6 to 12 inches of insulating material and keep compost at a temperature of 155 °F or higher from at least 3 days
- Establish limits of physical contaminant concentration and processing, sorting, and sizing of feedstock (14 CCR Section 17868.3.1).
- Visual observation of incoming feedstock to identify unacceptable feedstock material (14 CCR Section 17868.5).

14 CCR addresses these risks by ensuring only acceptable feedstocks are received by composting facilities and operations through inspection and monitoring, setting physical contaminant and metal concentration levels, and ensuring compost going through the Process to Further Reduce Pathogens process long enough (depending on compost technology).

6 BMP Evaluation

The General Order and 14 CCR establish requirements that mitigate much of the risk associated with small and medium composting facilities and operations that would be covered by this program. This section discusses additional BMPs that can be considered in conjunction with General Order and 14 CCR requirements to further mitigate risk. BMPs can consist of practices, procedures, and engineering and institutional controls. The BMPs listed may be applicable to mitigate risk associated with more than one media.

- **Use of impermeable or low permeable surfaces:** Use impermeable (asphalt concrete) or low permeable surfaces (compacted clay layer) beneath areas of a facility or operation that will receive, store, and process feedstock and where composting will occur to prevent or limit infiltration of leachate into the subsurface. This should be used particularly when the soil percolation rate and minimum depth to groundwater criteria in the General Order cannot be met.
- **Scraping or cleaning surface of compost/feedstock areas:** Scrape or clean residual feedstock and compost off surface between composting cycles to mitigate potential accumulation of contaminants.
- **Watering of unpaved surfaces:** Adequately water unpaved surfaces, without oversaturating, to mitigate the generation of dust during movement of heavy equipment and facility traffic.
- **Use of detention ponds and surface drainage:** Construct surface drainage ditches around feedstock and compost pads that convey surface water and leachate to detention ponds to prevent run-off.
- **In-vessel composting:** When General Order setback distance criterion of 100 feet from nearest surface water and water supply well cannot be met, utilize in-vessel composting to mitigate run-off of leachate and stormwater that has been in contact with feedstock and compost.
- **Covering feedstock and compost piles:** Cover feedstock and compost piles to limit exposure during storm events by constructing permanent roof structures over these areas or temporarily covering with material such as visqueen, tents, or tarps.
- **Personal Protective Equipment:** Utilize personal protective equipment for facility/operation personnel that handle feedstock and compost material such as nitrile gloves, safety glasses, and face masks to limit direct contact, ingestion, and inhalation exposure.

6.1 Air Toxics

Applicants shall conduct composting activities outside of the minimum screening distances (based on size and facility type) shown in Table 5-3. In the event that a project would be sited within the minimum screening distances, that project should prepare a project-specific Health Risk Assessment to determine whether or not health risks may occur (specific to that project's site conditions). If the Health Risk Assessment modeling determines that a project under the program may result in incremental health risks associated with TAC emissions, additional measures/BMPs should be implemented to avoid or minimize impacts from operation-related TAC emissions.

- Project proponents shall consider use of a different composting method that results in lesser TAC emissions (e.g., Negative ASP with a filter versus windrows);

- Project proponents shall use additional components either as a component of the compost mix or as a surface layer to reduce on-site emissions (e.g., biochar);
- Project proponents shall install diesel particulate filters or implement other CARB verified diesel emission control strategies for heavy-duty equipment;
- Project proponents shall apply U.S. EPA Tier 3 or 4 emissions standards to off-road heavy-duty equipment;
- Project proponents shall use haul trucks with on-road engines instead of off-road engines for on-site hauling;
- Project proponents shall establish an electricity supply and use electric-powered equipment instead of diesel-powered equipment, if feasible;
- Project proponents shall apply on-road diesel PM mitigation measures consistent with CARB's Diesel Certification Program; and
- Project proponents shall utilize renewable natural gas to power on-road vehicles accessing future project sites.

6.2 Odors

BMPs applicable to odor prevention include the following:

- Site selection: Odor impacts can be minimized by ensuring that the site selected for a new compost facility and operation is sufficiently distant from potential receptors. The SJVAPCD GAMAQI recommends a setback distance of 1 mile for a compost facility and operation from potential receptors (SJVAPCD 2015a), which may be unreasonable for many potential compost sites. The GAMAQI has applied that setback distance for several decades, beginning when windrow technology dominated the composting industry, pre-dating modern ASP composting techniques. A modern ASP compost facility and operation will typically have 80% lower emission levels than a comparably sized windrow compost facility and operation. Accordingly, a 1-mile setback distance may be appropriate for a windrow compost facility and operation, but is likely unnecessary for an ASP compost facility and operation. In its Rule 1133 staff report, the SCAQMD recommends a 1/4-mile setback distance (SCAQMD 2011), which would be more appropriate for an ASP compost facility and operation.
- Feedstock storage limitation: Although feedstock composition can determine odor to a large extent, management practices can also have a large impact, and in some cases mitigate odor production.
    - Offensive odors from manure, food, and liquid waste can be minimized by incorporating the waste into a compost pile on the same day they are received.
    - Limiting feedstock storage of green waste and biosolids prior to introducing the material into the compost pile will reduce the occurrence of decomposition, reducing emissions and odors. The BACT standard in air districts that impose permit requirements on feedstock storage is 2 days.
- Develop a compost blend to optimize conditions:

  - Balancing the carbon and nitrogen of the initial feedstock, and mixing different types of organic material in quantities to achieve a carbon to nitrogen ratio at a range between 20:1 to 40:1.
  - Ensuring particle size is large enough to allow airflow. This can be accomplished by blending woodchips into dense feedstocks.
  - Add water to the feedstock, as needed, to maintain a moisture content between 40% to 60%.
- Well-constructed, properly aerated static compost piles produce fewer odors.
  - Forcing air through the piles, using either a positive aeration system (pushing air up through the pile) or negative aeration system (pulling air down through the pile) maintains aerobic conditions within the piles.
  - Turning or aerating a windrow at a frequency to maintain a center pile temperature between 110°F to 140°F or an oxygen content greater than 5% will minimize odor emissions.
- Covering piles using breathable fabrics (e.g., the Gore® system) or a finished compost biofilter layer reduces odors as well as VOCs and NH3 emissions from the piles. The finished compost biofilter layer on compost piles for a positively aerated CASP, or a fixed bed biofilter (mulch, engineered fill, or other binding material) for negatively aerated ASP, further reduces emissions.
- Ensure that the biofilter layer (positive aeration) or the fixed bed biofilter (negative aeration) is properly wetted at all times using a sprinkler system.
- Aerate water retention basins to reduce the occurrence of strong odors (CIWMB 2007, pgs. 27-38).

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Appendix E

Noise and Vibration Technical Report

NCE has made every effort to provide this report and all associated information in an accessible format. If you need the appendices in an alternative format please contact Jeffrey Esquivel, (916) 341-6337, jeffery.esquivel@calrecycle.ca.gov.

Noise and Vibration Impact Study for Small/Medium Composting Project Permitting

California Department of Resources Recycling and Recovery

P.O. Box 4025
Sacramento, CA 9581

August 2026

Prepared by:

Yorke® ENGINEERING, LLC
www.YorkeEngr.com

Office Locations:
Los Angeles, Orange County,
Long Beach, Riverside, Ventura, San Diego,
Fresno, Merced, Berkeley, San Francisco

Tel: (949) 248-8490
Fax: (949) 248-8499

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Prepared for:

California Department of Resources Recycling and Recovery
P.O. Box 4025
Sacramento, CA 9581

August 2026

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Attachments

ATTACHMENT 1 – CONSTRUCTION NOISE CALCULATIONS

ATTACHMENT 2 – OPERATIONAL NOISE CALCUATIONS

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List of Acronyms and Abbreviations

ASP	Aerated Static Pile
CalEEMod	California Emissions Estimator Model®
CASP	Covered Aerated Static Pile
CNEL	Community Noise Equivalent Level
cy	Cubic Yards
dB	Decibel
dBA	A-Weighted Decibel
ft.	feet
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
Hz	Hertz
in/sec	Inches per Second
L_{dn}	Day-Night Noise Level (a.k.a. DNL)
L_{eq}	Equivalent Energy Level
L_{max}	Maximum Level of Noise
m	Meters
MM NOI-1	Mitigation Measure Noise-1
OPR	[California] Office of Planning and Research
PEIR	Program Environmental Impact Report
PPV	Peak Particle Velocity
RCNM	Roadway Construction Noise Model
RMS	Root Mean Square
SB	Senate Bill
TNM	Traffic Noise Model
TPY	Tons per Year

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Noise and Vibration Impact Study for Small/Medium Composting Project Permitting

1.0 INTRODUCTION

1.1 Project Overview

The California Department of Resources Recycling and Recovery (CalRecycle) is preparing a Program Environmental Impact Report (PEIR) pursuant to Senate Bill (SB) 1046 to facilitate the permitting and development of small and medium compostable material handling facilities and operations throughout California. The PEIR is designed to support implementation of SB 1383 by increasing California's capacity to process organic waste diverted from landfills through the development of additional composting facilities throughout the State. Implementation of SB 1046 would result in the construction and operation of new small and medium composting facilities that process agricultural, food, and green materials.

1.2 Purpose and Objectives

This technical report provides the noise and vibration analyses prepared in support of the PEIR for the CalRecycle Small and Medium Composting Facilities Program.

Yorke evaluated the potential for noise and vibration impacts associated with construction and operation of representative composting facility scenarios developed for the program. This report contains:

- A description of the representative facility scenarios and analysis assumptions;
- A screening-level analysis of construction noise and vibration impacts; and
- An analysis of operational noise and vibration impacts.

1.3 Project Location

The program area encompasses the entire State of California. The program is intended to facilitate the development and operation of new small and medium compostable material handling facilities and operations; however, specific facility locations have not been identified.

1.4 Facility Operations and Project Description

The Statewide program would facilitate the development and operation of small and medium compostable material handling facilities that process agricultural, vegetative food, green, and other organic materials. As defined by SB 1046, small facilities, which are anticipated to occupy approximately 5 acres, would process up to 10,000 tons per year (TPY) of material, and would have an on-site capacity of up to 5,000 cubic yards (cy). Medium facilities, which are anticipated to occupy approximately 11 acres, would process up to 25,000 TPY of material, and would have an on-site capacity of up to 12,500 cy.

Composting operations typically involve feedstock receiving and preparation, active composting, curing, screening, and product export. Incoming feedstocks may be ground, shredded, and sorted to remove contaminants before being placed into windrows, positively covered aerated static piles (CASPs), or negatively aerated static pile (ASP) systems for active composting. ASPs use blowers to aerate the piles. Following the active composting phase, material would be cured, screened to remove oversized materials and contaminants, and transported off-site for use as a soil amendment

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in agricultural, landscaping, and horticultural applications. Equipment commonly used during operations includes loaders, grinders, screeners, water trucks, and haul trucks. Windrow composting operations use windrow turners to agitate and aerate the piles; windrow turners can be self-propelled or towed by a tractor, loader, or other heavy equipment.

Heavy equipment operations, such as chipping, grinding, front-loader use, and truck activities associated with composting facility operations, are anticipated to occur during daytime hours, generally between 6:00 a.m. and 6:00 p.m., Monday through Saturday. However, some local jurisdictions define daytime hours as beginning at 7:00 a.m. and apply more stringent noise standards during nighttime or early morning hours. Accordingly, facilities located in proximity to sensitive receptors may require modified operating hours (e.g., 7:00 a.m. to 7:00 p.m.) or other noise reduction measures to comply with applicable local noise standards. The anticipated noise-generating equipment and estimated noise levels for each equipment type are presented in Table 1-1.

Table 1-1: List of Noise Generating Equipment

Equipment Type	Estimated Sound Level at 50 ft. (dBA)	Usage Factor %
Grinders[1]	90	50%
Screens[1]	85	50%
Stackers[1]	80	40%
Colorizer[1]	85	50%
Emergency Generator[1,3]	82	50%
Emergency Fire Pump[1,3]	85	50%
Tractors[2]	84	40%
Excavator[2]	85	40%
Loader[2]	84	40%
Water Truck[2]	84	40%
Windrow Turner[4]	84	40%
Sweeper Truck[2]	80	10%
Fuel Truck[2]	84	5%

Notes/Sources:

[1] Manufacturer specifications and published product literature.

[2] Federal Highway Administration (FHWA) 2006: pg. 3. Water truck and fuel truck noise levels were assumed to be equivalent to dump truck operations. A 5 percent usage factor was assumed for fuel truck activities due to the intermittent nature of on-site equipment refueling.

[3] Usage factors shown are representative of periodic testing and maintenance activities. For purposes of evaluating noise during emergency conditions, emergency generators and fire pumps were separately evaluated assuming 100% utilization.

[4] Windrow turner noise levels and usage factors were assumed to be equivalent to a loader based on comparable engine horsepower and operating characteristics.

2.0 NOISE AND VIBRATION FUNDAMENTALS

2.1 Definition and Measurement of Noise

Sound is a pressure wave created by a moving or vibrating source that travels through a fluid medium, such as air or water. Noise is defined as a sound or aggregated sounds that are perceived

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as dissonant, irritating, objectionable, intrusive, and/or disruptive to the quality of daily life. Sound is measured on a logarithmic scale of sound pressure level known as the decibel (dB) scale. A-weighted decibels (dBA) approximate the subjective response of the human ear to broad frequency sound sources by discriminating against very low and very high frequencies of the audible spectrum. The dBA scale is weighted to reflect only those frequencies that are audible to the human ear, generally defined as a range of 20 to 20,000 hertz (Hz). Figure 2-1 presents a range of noise levels associated with common indoor and outdoor activities.

Figure 2-1: Typical Noise Levels and Effects on People

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock band
Jet flyover at 1,000 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	70	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	
		Large business office
Quiet urban daytime	50	Dishwasher in next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime		
	30	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio
	10	
	0	

Source: Caltrans 2013, pg. 2-20.

2.2 Noise Descriptors

Environmental noise descriptors are generally based on time weighted averages, rather than instantaneous noise levels. Noise levels emitted by various sources are often expressed as equivalent energy level (L_{eq}). Maximum Level of Noise (L_{max}) is the root mean squared (RMS) maximum level of a noise source or environment measured on a sound level meter during a designated time interval (e.g., 15, 30, or 60 minutes) using fast meter response.

Because sound levels at a particular location typically vary over the course of the day and because people tend to be more sensitive to noise in the evening and at night than during the morning and afternoon, sound levels are commonly averaged over a 24-hour period as it is important to account for the difference in human response to daytime and nighttime noise. Noise is more disturbing at night than during the day and noise indices have been developed to account for the varying duration of noise events over time, as well as community response to them. The Community Noise

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Equivalent Level (CNEL) adds a 5-dB penalty to the "evening" noise levels (i.e., 7:00 p.m. to 10:00 p.m.) and a 10-dB penalty to the "nighttime" noise levels (i.e., 10:00 p.m. to 7:00 a.m.). The Day-Night Noise Level (L_{dn}) adds a 10-dB penalty to the "nighttime" noise levels. The latter two expressions of average "nighttime" sound levels are nearly equivalent, and while a general plan noise element usually refers to CNEL, standards cited from certain state and federal regulations may use L_{dn}[1]. (Caltrans 2013: pg. 2-48)

2.3 Noise Range

Decibel scales are logarithmic, such that an increase from 30 to 40 dB represents a tenfold increase in sound level, while an increase from 30 to 50 dB represents a hundredfold increase. Human perception of sound loudness, however, is subjective. Everyday sounds normally range from 30 dBA (very quiet, such as a soft whisper) to approximately 100 dBA [very loud, such as the noise produced by a jet flyover at a distance of 1,000 feet (ft.)].

2.4 Human Response to Changes in Noise Levels

In general, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz and it perceives a sound within that range as being more intense than a sound with a higher or lower frequency with the same magnitude. For purposes of this report, as well as with most environmental documents, overall sound levels are determined by applying frequency weighted adjustments to spectral sound levels. The dBA weighting scale is used to mimic human hearing response; therefore, sound is reported in terms of dBA. Typically, the human ear can barely perceive a change in noise level of 3 dBA. A change in noise level of 5 dBA is readily perceptible and a change of 10 dBA is perceived as being twice or half as loud.

2.5 Sound Propagation

Sound is transmitted in the air by pressure variations from its source to the surroundings. While absorption by air is one of the factors attributing to the weakening of a sound during transmission, the sound level also decreases as the sound propagates away from the source. Depending on the source of the sound, for every doubling of distance, the level will be reduced between 3 and 6 dB. The reduction of a sound is called attenuation. Other factors for noise attenuation are terrain absorption (terrain loss) and shielding/obstructions (insertion loss).

To reduce line-of-sight noise transmission, sound walls are commonly installed between a noise source and a receptor, such as along freeways or near sensitive land uses. Other natural or manmade features, such as buildings, hills, rough terrain, and dense vegetation, can also contribute to noise attenuation. Standard sound walls typically reduce noise levels by 5 to 10 dBA, with taller walls providing greater attenuation. However, high-performance acoustic barriers, depending on their design, materials, and installation, can achieve reductions of 20 dBA or more. These barriers are most effective when placed close to either the noise source or the receptor.

2.6 Vibration Transmission

Construction activity can result in varying degrees of ground-borne vibration, depending on the equipment and methods employed. Operation of construction equipment can cause vibrations that spread through the ground that diminish in strength with distance, similar to sound attenuation.

[1] CNEL and L_{dn} are discussed herein because they are used in the California General Plan Guidelines for evaluating land use compatibility. However, operational noise impacts in this report are evaluated using L_{eq}, consistent with the noise standards commonly used by local jurisdictions.

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While such ground-borne vibration is not a threat to humans or animals, buildings founded on the soil near a construction site may respond to these vibrations with varying effects, ranging from no perceptible effects at the lowest levels, low rumbling sounds and perceptible vibrations at moderate levels, and slight damage at the highest levels. Vibration amplitudes are usually expressed in peak particle velocity (PPV) or RMS vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is the maximum, instantaneous positive or negative peak of the vibration signal. PPV is often used in monitoring construction vibration since it is related to the stresses that are experienced by buildings and is generally not used to evaluate human response.

3.0 NOISE STANDARDS

3.1 Federal

The Federal Transit Administration (FTA) has developed procedures and significance criteria for evaluating noise and vibration impacts associated with construction activities. The FTA Transit Noise and Vibration Impact Assessment Manual identifies a construction noise impact threshold of 80 dBA L_{eq} at residential (i.e., sensitive) receptors (FTA 2018: pg. 179). Because specific facility locations and applicable local jurisdictional noise standards are not known at the program level, the FTA construction noise criterion was used to evaluate potential construction noise impacts. Future facilities developed under the program may be subject to more restrictive local noise standards, where applicable.

3.2 State of California 2017 General Plan Guidelines

The State of California General Plan Guidelines provide land use compatibility criteria based on CNEL. These guidelines are commonly used by local jurisdictions in developing noise standards and evaluating land use compatibility.

The California Governor's Office of Planning and Research's (OPR's) noise element guidelines include recommended exterior and interior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise, e.g., residential next to industrial. The guidelines contain a table that describes the compatibility of various land uses with a range of environmental noise levels in terms of CNEL. Table 3-1, State of California Land Use Compatibility for Community Noise Environments, reproduces the guidelines for determining acceptable and unacceptable community noise exposure limits for various land use categories. The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

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Table 3-1: State of California Land Use Compatibility for Community Noise Environments

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dBA)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential – Low Density, Single-Family, Duplex, Mobile Homes	50-60	55-70	70-75	75-85
Residential – Multiple Family	50-65	60-70	70-75	70-85
Transient Lodging – Motel, Hotels	50-65	60-70	70-80	80-85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50-70	60-70	70-80	80-85
Auditoriums, Concert Halls, Amphitheaters	N/A	50-70	N/A	65-85
Sports Arenas, Outdoor Spectator Sports	N/A	50-75	N/A	70-85
Playgrounds, Neighborhood Parks	50-70	N/A	65-75	75-85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50-70	N/A	70-80	80-85
Office Buildings, Business Commercial and Professional	50-70	65-75	75-85	N/A
Industrial, Manufacturing, Utilities, Agriculture	50-75	70-80	75-85	N/A

Source: California Governor's OPR 2017: pg. 374.

3.3 Local Noise Standards

Because specific facility locations have not been identified, the applicable General Plan Noise Element policies, municipal code requirements, and noise ordinance provisions cannot be determined at this time. Future facilities developed under the program would be required to comply with the noise standards, policies, and ordinances adopted by the local jurisdiction with authority over the Project site.

Local jurisdictions throughout California commonly regulate noise through General Plan Noise Elements and municipal noise ordinances that establish land use compatibility criteria, exterior and interior noise standards for sensitive land uses, restrictions on construction hours, and limits on operational noise levels. Because these requirements vary among jurisdictions, site-specific noise analyses may be required during subsequent Project-level environmental review to evaluate consistency with applicable local noise standards and ordinance requirements.

4.0 SENSITIVE RECEPTORS

Sensitive receptors (a.k.a. noise-sensitive receptors) are land uses that may be adversely affected by excessive noise levels. These receptors typically include residences, schools, hospitals, places of worship, libraries, and similar uses where occupants may be more susceptible to noise disturbance.

Because specific facility locations have not been identified, the location of future sensitive receptors relative to individual composting facilities cannot be determined at this time. Therefore, the noise analysis was conducted using representative sensitive receptor distances to evaluate

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potential construction and operational noise impacts. Future facilities developed under the program may require site-specific noise analyses to evaluate impacts on nearby sensitive receptors and compliance with applicable local noise standards.

5.0 FUTURE COMMUNITY NOISE IMPACTS

5.1 Construction

5.1.1 Methodology

5.1.1.1 Noise

The screening-level noise analysis for construction activities was completed based on methodology developed by the FHWA at the John A. Volpe National Transportation Systems Center and other technical references consistent with California Emissions Estimator Model® (CalEEMod) outputs (equipment utilization). The FHWA methodology uses actual noise measurement data collected during the Boston "Big Dig" project (1991–2006) as reference levels for a wide variety of construction equipment in common use, including equipment anticipated to be used for development of facilities under the program.

The FHWA noise model provides relatively conservative predictions because it does not account for site-specific geometry, dimensions of nearby structures, and local environmental conditions that can affect sound transmission, reflection, and attenuation. As a result, actual measured sound levels at receptors may vary somewhat from predictions and are typically lower. Additionally, the impacts of noise upon receptors are subjective because of differences in individual sensitivities and perceptions.

Because specific facility locations have not been identified, Project-specific construction noise analyses cannot be conducted at the program level. Therefore, construction noise levels were evaluated using representative construction equipment fleets for the small and medium composting facility scenarios and a representative sensitive receptor distance of 50 meters (m) [164 ft.]. The FHWA methodology predicts hourly equivalent sound levels (L_{eq}) generated by simultaneous construction equipment operation. Predicted noise levels were compared to the FTA daytime construction noise impact criterion of 80 dBA L_{eq} for residential receptors. Because specific facility locations and applicable local construction noise standards are unknown, the FTA criterion was used as a screening-level significance threshold for this program-level analysis. Future facilities developed under the program may require site-specific noise analyses to evaluate compliance with applicable local noise standards and ordinances, particularly where sensitive receptors are located closer than 50 m (164 ft.) or where local jurisdictions have adopted more restrictive noise standards.

5.1.1.2 Vibration

During construction activities, each composting facility would generate noise and vibration due to operation of off-road equipment, portable equipment, and vehicles at or near the Project site. No strong sources of vibrations (e.g., hard rock-breaking, large pile-driving) are anticipated to be required during the construction of the proposed facilities. FTA has published standard vibration velocities for construction equipment operations. The PPV vibration threshold for human annoyance is 0.2 in/sec (Caltrans 2020: pg. 22). Building damage can be cosmetic or structural. Generally, a PPV vibration threshold of approximately 0.3 in/sec is sufficient to avoid physical damage to engineered structures and 0.2 in/sec for non-engineered structures (FTA 2018: pg. 186; Caltrans 2020: pg. 24).

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Table 5-1 presents average source levels in terms of velocity for different types of construction equipment. Table 5-2 presents the human response to different levels of ground-borne vibration and noise (Caltrans 2020: pg. 22). A vibration threshold of 0.2 PPV was selected as the significance threshold.

The vibration source level (PPV_{ref}) for each piece of equipment at a reference distance of 25 ft. was determined per Table 5-1. The following equation was then used to apply the propagation adjustment to the source reference level to account for the distance from the equipment to the receiver:

$$PPV_{equip} = PPV_{ref} \times (\frac{25}{D})^{1.5}$$

where:

PPV_{equip} = the peak particle velocity of the equipment adjusted for distance, in/sec
PPV_{ref} = the source reference vibration level at 25 ft, in/sec
D = distance from the equipment to the receiver, ft

Source: FTA 2018: pg. 185.

Table 5-1: FTA Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 ft. (in/sec)	
Pile Driver (Impact)	Upper Range	1.518
	Typical	0.644
Pile Driver (Sonic)	Upper Range	0.734
	Typical	0.170
Clam Shovel Drop (Slurry Wall)		0.202
Hydromill (Slurry Wall)	In Soil	0.008
	In Rock	0.017
Vibratory Roller		0.210
Hoe Ram		0.089
Large Bulldozer		0.089
Caisson Drilling		0.089
Loaded Trucks		0.076
Jackhammer		0.035
Small Bulldozer		0.003

Source: FTA 2018: pg. 184.

Note: This table is reproduced from FTA 2018 for reference purposes. Not all equipment listed in the table is anticipated to be used during construction of facilities evaluated under this PEIR.

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Table 5-2: Human Response to Continuous Vibration from Traffic

PPV (in/sec)	Human Response
0.4-0.6	Unpleasant
0.2	Annoying
0.1	Begins to Annoy
0.08	Readily Perceptible
0.006-0.019	Threshold of Perception

Source: Caltrans 2020, pg. 22.

5.1.2 Impacts Analysis

5.1.2.1 Noise

The Project is expected to require up to approximately 1 year of planned work activities (i.e., from mobilization to substantial completion) comprising five construction phases:

1. Site preparation;
2. Grading;
3. Building construction;
4. Paving; and
5. Architectural coating.

During each of the construction phases, there would be a different mix of equipment operating, and cumulative noise levels would vary based on the amount of equipment in operation and the location of each activity at the Project site. In general, use of off-road equipment and portable equipment would generate noise due to engine mechanicals, engine exhaust, driveline mechanicals, shaft-driven devices and accessories, hydraulics operation, ground friction and displacement, and gravity drops (i.e., dumping and unloading).

Temporary construction noise would occur during site preparation, grading, building construction, and paving activities when heavy equipment is operating. Construction activities are anticipated to occur during daytime hours. Because specific facility locations have not been identified, applicable local construction hour restrictions cannot be determined at this time. Future facilities developed under the program would be required to comply with local construction hour restrictions and noise ordinance requirements established by the jurisdiction with authority over the Project site. Construction noise would be temporary in nature and would cease upon completion of construction.

Tables 5-3 and 5-4 summarize the estimated daytime construction noise levels for the representative small and medium composting facility scenarios at a receptor distance of 50 m (164 ft.) and compare the results to the FTA construction noise impact criterion of 80 dBA L_{eq}. Construction noise levels that do not exceed the FTA criterion are considered Less Than Significant.

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Table 5-3: Estimated Construction Noise Levels at a Representative Sensitive Receptor (50 Meters) – Small Facility Scenario

Construction Phase	Modeled Noise Level[1] (L_{eq} dBA)	Significance Threshold[2] (L_{eq} dBA)	Exceeds Threshold? (Yes/No)
Site Preparation	76	80	No
Grading	76	80	No
Building Construction	74	80	No
Paving	78	80	No
Architectural Coating	66	80	No

Notes:

[1] Estimated using FHWA Roadway Construction Noise Model (RCNM) methodology and CalEEMod construction activity data (FHWA 2006: 3).

[2] FTA construction noise criterion of 80 dBA L_{eq} at residential receptors (FTA 2018: pg. 179).

Table 5-4: Estimated Construction Noise Levels at a Representative Sensitive Receptor (50 Meters) – Medium Facility Scenario

Construction Phase	Modeled Noise Level[1] (L_{eq} dBA)	Significance Threshold[2] (L_{eq} dBA)	Exceeds Threshold? (Yes/No)
Site Preparation	76	80	No
Grading	79	80	No
Building Construction	74	80	No
Paving	78	80	No
Architectural Coating	66	80	No

Notes:

[1] Estimated using FHWA RCNM methodology and CalEEMod construction activity data (FHWA 2006: 3).

[2] FTA construction noise criterion of 80 dBA L_{eq} at residential receptors (FTA 2018: pg. 179).

As shown in Tables 5-3 and 5-4, the estimated average construction noise levels at the representative sensitive receptor would be below the FTA construction noise criterion of 80 dBA L_{eq}. Therefore, temporary construction noise impacts would not exceed applicable significance thresholds and would be Less Than Significant.

IMPACT: Less Than Significant

5.1.2.2 Vibration

Based on the information presented in Table 5-1, vibration levels at the nearest off-site structure[2] would not exceed the screening-level significance threshold of 0.2 in/sec PPV. In addition, high-vibration construction equipment, such as pile drivers, are not anticipated to be used during construction of the representative facility scenarios. Therefore,

[2] For purposes of the vibration analysis, the nearest off-site structure was assumed to be located 50 ft. from construction activities. This assumption is more conservative than the representative sensitive receptor distance of 164 ft. (50 m) used in the noise analysis because the nearest off-site structure may not be a noise-sensitive receptor.

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construction-related vibration impacts would be Less Than Significant, as shown in Table 5-5.

Table 5-5: Estimated Peak Activity Daytime Vibration Impacts

Equipment	Vibration Levels at Nearest Off-Site Building (PPV at 50 ft.)	Exceeds Threshold?[1] (Yes/No)
Clam Shovel	0.07	No
Hydromill (In Soil)	<0.01	No
Vibratory Roller/Compactor	0.07	No
Hoe Ram/Hydraulic Breaker	0.03	No
Large Bulldozer/Crawler Tractor	0.03	No
Caisson Drilling/Boring	0.03	No
Loaded Dump Trucks	0.03	No
Jackhammer (Pneumatic)	0.01	No
Small Bulldozer/Excavator/Backhoe	<0.01	No

Note:

[1] A screening-level vibration significance threshold of 0.2 in/sec PPV was used to evaluate potential building damage and human annoyance impacts.

IMPACT: Less Than Significant

5.2 Operations

5.2.1 Methodology

5.2.1.1 Off-Site Traffic Noise

The evaluation of Project-related traffic noise is based on established FHWA principles for assessing roadway noise. FHWA Traffic Noise Model (TNM) identifies traffic volume, vehicle mix, vehicle speeds, and the distance between roadways and receptors as the primary factors influencing traffic noise levels (FHWA 2021: pgs. 29-32). As part of this methodology, FHWA guidance indicates that traffic noise levels increase logarithmically, such that a doubling of traffic volumes is generally required to result in an approximately 3-dBA increase in noise levels, which represents the minimum change that may be perceptible to the human ear (FHWA 2011, pgs. 9-10). This relationship is commonly used in qualitative traffic noise assessments to evaluate the potential for project-related changes in traffic conditions to result in noticeable increases in ambient noise levels.

5.2.1.2 On-Site Noise

The inverse square law was used to estimate sound pressure level of on-site noise sources at the nearest sensitive receptor. To determine the sound attenuation over a distance using the inverse square law, an idealization needs to be made in which there are no reflective surfaces or barriers between the source and the location at which the sound level is being determined. According to the inverse square law, it can be shown that for each doubling of distance from a point source, the sound pressure level decreases by approximately 6 dB.

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5.2.1.3 Vibration

Typical operational equipment includes blowers (ASP facilities only), loaders, grinders, screeners, tractors, water trucks, sweeper trucks, haul trucks, and windrow turners (windrow facilities only). These activities are not anticipated to involve high-vibration equipment commonly associated with substantial ground-borne vibration impacts, such as pile drivers, blasting, or similar vibration-intensive activities. Accordingly, a qualitative assessment of potential operational vibration impacts was conducted.

5.2.2 Impacts Analysis

5.2.2.1 Off-Site Traffic Noise

Vehicle activity associated with facility operations includes employee and light-duty commercial vehicle trips, tractor trailer trips, and fuel truck deliveries. Estimated average daily vehicle trips for each representative composting facility scenario are summarized in Table 5-6. Small facilities would generate approximately 52 daily trips, and medium facilities would generate approximately 110 daily trips.

In general, a doubling of traffic volume is required to increase noise levels by approximately 3 dBA, which is considered the minimum change that may be perceptible to people. Given the relatively low number of daily vehicle trips associated with the representative facility scenarios, operational traffic is not expected to substantially increase roadway noise levels. Because future facility locations and haul routes are unknown, the distribution of operational truck traffic on specific roadway segments cannot be determined at the program level. Future facilities may also be subject to site-specific traffic studies during local permitting and environmental review to evaluate truck access, haul routes, and other transportation-related considerations, and identify any necessary mitigation measures. While operational traffic noise impacts would generally be expected to be less than significant, the potential for significant traffic noise impacts cannot be ruled out for all future facilities under the proposed program. Therefore, operational traffic noise impacts are conservatively considered Potentially Significant.

Table 5-6: Estimated Average Daily Vehicle Trips for Representative Composting Facility Scenarios

Scenarios	Facility Size	Active Technology	Trips/day		
			Employee and Light Duty Commercial Vehicles	Tractor Trailers	Total
1	Small	Windrows	18	34	52
2		Positive CASP	18	34	52
3		Negative ASP with Filter	18	34	52
4	Medium	Windrows	26	84	110
5		Positive CASP	26	84	110
6		Negative ASP with Filter	26	84	110

IMPACT: Potentially Significant

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Mitigation Measure Noise-1 (MM NOI-1): Conduct a Project-Specific Traffic Impact Analysis and Implement Required Mitigation Measures

For future facilities that have the potential to substantially increase traffic volumes on roadways serving noise-sensitive land uses, a project-specific traffic impact analysis shall be conducted during subsequent project-level environmental review. The analysis shall evaluate project-generated traffic on affected roadway segments and identify any significant transportation impacts and associated mitigation measures. Any transportation-related mitigation measures identified through the analysis and required by the lead agency, such as haul route modifications, restrictions on truck operating hours, or other measures intended to reduce transportation-related impacts, shall be incorporated into the project and implemented.

5.2.2.2 On-Site Noise

The number of equipment assumed for each representative facility scenario is listed in Table 5-7. To provide a conservative assessment of operational noise impacts, all equipment was assumed to be operating simultaneously, although this condition is not expected to occur during most routine facility operations.

Emergency generators and emergency fire pumps are operated during emergency conditions, or for routine, limited duration maintenance and testing activities, and are not expected to operate concurrently with normal facility operations. Accordingly, these sources were not included in the operational noise analysis. However, a separate screening-level evaluation indicates that, assuming continuous operation during an emergency event (100% usage factor), a diesel emergency generator and diesel emergency fire pump would generate noise levels ranging from approximately 26 to 47 dBA and 29 to 50 dBA, respectively, at representative sensitive receptor distances evaluated in this analysis. Therefore, operation of emergency equipment is not expected to substantially contribute to operational noise impacts at nearby receptors.

Blowers are often enclosed, located in containers, buildings, or behind biofilters and are not typically considered a dominant noise source at composting facilities. Therefore, operation of blowers is not expected to substantially contribute to operational noise impacts at nearby receptors.

Table 5-8 summarizes the estimated operational noise levels for representative small and medium composting facilities at various receptor distances. To provide a conservative assessment of operational noise impacts, all noise-generating equipment was assumed to operate at the same distance from the representative sensitive receptor, without the benefit of intervening barriers, topography, buildings, vegetation, compost piles, or other sound-attenuating features. Consequently, the predicted noise levels likely overestimate actual noise exposure at nearby receptors.

As shown in Table 5-8, estimated operational noise levels for the representative small and medium composting facility scenarios would not exceed the representative daytime noise threshold of 60 dBA (L_{eq}) at distances of approximately 2,000 ft. from routine facility operations. Therefore, future facilities located beyond 2,000 ft. from sensitive receptors would generally be expected to comply with typical daytime noise standards. Facilities located within 2,000 ft. of sensitive receptors may require site-specific noise impact analyses during subsequent Project-level environmental review to demonstrate compliance

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with applicable local noise standards. Because the analysis conservatively assumes all equipment operates simultaneously at the same distance from the receptor and does not account for attenuation from buildings, sound walls, berms, topography, vegetation, compost piles, or other shielding features, actual noise levels may be lower than those predicted herein. Such site-specific conditions should be considered during subsequent Project-level environmental review, as appropriate.

Table 5-7: Equipment List for Representative Composting Facility Scenarios

Scenario	1	2	3	4	5	6
Facility Size	**Small**			**Medium**		
Active Technology	**Windrows**	**Positive CASP**	**Negative ASP with Filter**	**Windrows**	**Positive CASP**	**Negative ASP with Filter**
Grinders	1	1	1	1	1	1
Screens	1	1	1	1	1	1
Stackers	1	1	1	1	1	1
Colorizer	0	0	0	1	1	1
Emergency Generator	1	1	1	1	1	1
Emergency Fire Pump	1	1	1	1	1	1
Tractors	1	1	1	1	1	1
Excavator	1	1	1	1	1	1
Loader	2	2	2	3	3	3
Windrow Turner	1	0	0	1	0	0
Water Truck	1	1	1	1	1	1
Sweeper Truck	1	1	1	1	1	1
Fuel Truck	1	1	1	1	1	1

Table 5-8: Estimated Operational Noise Levels at Representative Sensitive Receptor Distances for Small and Medium Composting Facilities

Scenarios	Facility Size	Noise Level dBA (L_{eq}) at Nearest Sensitive Receptor				
		50 m (164 ft.)	**100 m (328 ft.)**	**200 m (656 ft.)**	**500 m (1,640 ft.)**	**610 m (2,000 ft.)**
1–3	Small	81	75	69	61	59
4–6	Medium	82	76	70	62	60
Representative Daytime Sensitive Receptor Noise Threshold (L_{eq}, dBA)[1]		60	60	60	60	60
Exceeds Threshold? (Yes/No)	Small	Yes	Yes	Yes	Yes	No
	Medium	Yes	Yes	Yes	Yes	No

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Note:

[1] A daytime noise level of 60 dBA is presented as a screening threshold because it is commonly used by cities and counties for evaluating operational noise at residential receptors. Actual applicable noise standards may vary by jurisdiction and should be verified during Project-level environmental review.

IMPACT: Potentially Significant

Mitigation Measure Noise-2 (MM NOI-2): Implement Operational Noise Reduction Measures

For facilities located within approximately 2,000 ft.[3] of a sensitive receptor, local jurisdictions shall require preparation of a site-specific noise impact analysis during Project-level environmental review. The analysis shall evaluate operational noise levels at nearby sensitive receptors and identify feasible measures necessary to achieve compliance with applicable local noise standards. Such measures may include, but are not limited to:

- Maintaining all powered equipment in accordance with manufacturer specifications;
- Public notice of activities shall be provided to nearby sensitive receptors of potential noise-generating activities;
- All motorized equipment shall be shut down when not in use;
- Locating stationary noise-generating equipment as far as practicable from nearby sensitive receptors;
- Using existing buildings, stockpiles, berms, or topographic features to provide noise shielding;
- Installing sound walls, acoustic barriers, earthen berms, shipping-container walls, or similar acoustical shielding measures;
- Providing additional setbacks from nearby sensitive receptors;
- Implementing alternative measures demonstrated by a qualified acoustical consultant to achieve compliance with applicable local noise standards; and/or
- To achieve an interior noise level consistent with applicable noise standards, the installation of double pane windows and building insulation shall be offered to residences directly affected by significant operational noise levels generated by the noise-generating facility. If accepted by the homeowner, the Project applicant shall provide the funding necessary to install the appropriate noise-reducing building improvements.

Any measures identified in the site-specific noise analysis and determined to be necessary to achieve compliance with applicable local noise standards shall be implemented as part of the project.

[3] The 2,000-ft. distance is a screening distance for operational noise evaluation and should not be interpreted as a required setback distance from sensitive receptors. Facilities located within 2,000 ft. of a sensitive receptor may still demonstrate compliance with applicable local noise standards through a site-specific noise impact analysis and implementation of noise attenuation measures, as necessary.

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It is reasonable to expect that project-specific acoustical analyses and associated conditions of approval would reduce operational noise impacts to a less-than-significant level. However, because future facility locations, receptor distances, and the specific noise attenuation measures that may be required are unknown at the program level, the degree to which such measures would be required and their effectiveness cannot be determined at this time. Therefore, for CEQA compliance purposes, operational noise impacts are conservatively considered Potentially Significant.

IMPACT: Potentially Significant

5.2.2.3 Vibration

The operations phase of the proposed composting facilities is not anticipated to involve substantial sources of vibration due to the nature of the operation. In addition, intense sources of vibration decrease substantially within 30 to 50 ft. of the source and would occur well within the facility boundary. As such, operational vibration impacts would be Less Than Significant.

IMPACT: Less Than Significant

6.0 CONCLUSIONS

Construction noise generated by development of representative small and medium composting facilities would occur during daytime hours, be temporary in nature, and cease upon completion of construction activities. As shown in Tables 5-3 and 5-4, estimated construction noise levels at a sensitive receptor located at a representative distance of 50 m (164 ft.) and beyond would remain below the FTA screening-level significance threshold of 80 dBA. Therefore, construction noise impacts would be Less Than Significant.

Neither construction nor operation of representative composting facilities is expected to generate substantial ground-borne vibration. Construction-related vibration levels would remain below the applicable screening threshold and routine facility operations would not involve vibration-intensive equipment or activities. Therefore, construction and operational vibration impacts would be Less Than Significant.

Operational traffic associated with facility employees, feedstock deliveries, compost export, and support vehicles would represent a relatively minor increase in roadway traffic. Because future facility locations and haul routes are unknown, the distribution of operational truck traffic on specific roadway segments cannot be determined at the program level. Future facilities may also be subject to site-specific traffic studies during local permitting and environmental review to evaluate roadway, intersection, and haul route conditions, and identify any necessary mitigation measures. While operational traffic noise impacts would generally be expected to be less than significant, the potential for significant traffic noise impacts cannot be ruled out for all future facilities under the proposed program. Therefore, operational traffic noise impacts are conservatively considered Potentially Significant.

Operational noise generated by compost processing, material handling, screening, grinding, and associated facility activities has the potential to result in significant impacts at nearby sensitive receptors. As shown in Table 5-8, operational noise levels would generally be below a representative daytime residential threshold of 60 dBA (L_{eq}) at distances of approximately 2,000 ft. and beyond from routine facility operations. Facilities located within 2,000 ft. of a sensitive

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receptor may require Project-specific noise impact analyses and noise attenuation measures during subsequent Project-level environmental review. Because future facility locations, receptor distances, and the specific noise attenuation measures that may be needed are unknown, compliance with applicable local noise standards cannot be verified at the program level. Therefore, operational noise impacts are conservatively considered Potentially Significant.

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ATTACHMENT 1 – CONSTRUCTION NOISE CALCULATIONS

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Table 1-1: Estimated Construction Attenuated Sound Levels of Small Facilities at Nearest Sensitive Receptor (dBA)

Phase Name	CalEEMod Equipment Type	Equipment Count	RCNM Construction Equipment Type	Usage Factor	Reference SPL L_{REF} (dBA)	Distance to Receptor (ft)	Terrain Coefficient (dBA/ft)	Insertion Loss (dBA)	Window Loss (dBA)	Attenuated SPL L_{MAX} (dBA)	Attenuated SPL L_{EQ} (dBA)	Count RMS L_{MAX} (antilog)	Count RMS L_{EQ} (antilog)	Count SPL L_{MAX} (dBA)	Count SPL L_{EQ} (dBA)
Site Preparation	Rubber Tired Dozers	3	Tractor (rubber tire)	40%	84	164	0.0000	0	0	73.7	69.7	7.00E+07	2.80E+07	78.5	74.5
Site Preparation	Tractors/Loaders/Backhoes	4	Backhoe (with loader)	40%	80	164	0.0000	0	0	69.7	65.7	3.72E+07	1.49E+07	75.7	71.7
Grading	Excavators	1	Excavator (hydraulic)	40%	85	164	0.0000	0	0	74.7	70.7	2.94E+07	1.18E+07	74.7	70.7
Grading	Graders	1	Grader	40%	85	164	0.0000	0	0	74.7	70.7	2.94E+07	1.18E+07	74.7	70.7
Grading	Rubber Tired Dozers	1	Tractor (rubber tire)	40%	84	164	0.0000	0	0	73.7	69.7	2.33E+07	9.34E+06	73.7	69.7
Grading	Tractors/Loaders/Backhoes	3	Backhoe (with loader)	40%	80	164	0.0000	0	0	69.7	65.7	2.79E+07	1.12E+07	74.5	70.5
Building Construction	Cranes	1	Crane	16%	85	164	0.0000	0	0	74.7	66.7	2.94E+07	4.70E+06	74.7	66.7
Building Construction	Forklifts	3	Forklift (front end loader)	40%	80	164	0.0000	0	0	69.7	65.7	2.79E+07	1.12E+07	74.5	70.5
Building Construction	Generator Sets	1	Generator (<25 KVA quiet design)	50%	70	164	0.0000	0	0	59.7	56.7	9.30E+05	4.65E+05	59.7	56.7
Building Construction	Tractors/Loaders/Backhoes	3	Backhoe (with loader)	40%	80	164	0.0000	0	0	69.7	65.7	2.79E+07	1.12E+07	74.5	70.5
Building Construction	Welders	1	Welding Machine (arc welding)	50%	70	164	0.0000	0	0	59.7	56.7	9.30E+05	4.65E+05	59.7	56.7
Paving	Cement and Mortar Mixers	2	Drum Mixer	50%	80	164	0.0000	0	0	69.7	66.7	1.86E+07	9.30E+06	72.7	69.7
Paving	Pavers	1	Paver (asphalt)	50%	85	164	0.0000	0	0	74.7	71.7	2.94E+07	1.47E+07	74.7	71.7
Paving	Paving Equipment	2	Paver (asphalt)	50%	85	164	0.0000	0	0	74.7	71.7	5.88E+07	2.94E+07	77.7	74.7
Paving	Rollers	2	Roller	20%	85	164	0.0000	0	0	74.7	67.7	5.88E+07	1.18E+07	77.7	70.7
Paving	Tractors/Loaders/Backhoes	1	Backhoe (with loader)	40%	80	164	0.0000	0	0	69.7	65.7	9.30E+06	3.72E+06	69.7	65.7
Architectural Coating	Air Compressors	1	Compressor (air)	40%	80	164	0.0000	0	0	69.7	65.7	9.30E+06	3.72E+06	69.7	65.7
			Ref. Dist. (ft)	**50**											

Table 1-2: Combined Sound Levels Per Construction Phase for Small Facilities

Phase Name	∑RMS L_{MAX}	∑RMS L_{EQ}	∑SPL L_{MAX} (dBA)	∑SPL L_{EQ} (dBA)
Site Preparation	1.07E+08	4.29E+07	80.3	**76**
Grading	1.10E+08	4.40E+07	80.4	**76**
Building Construction	8.70E+07	2.79E+07	79.4	**74**
Paving	1.75E+08	6.89E+07	82.4	**78**
Architectural Coating	9.30E+06	3.72E+06	69.7	**66**

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Table 1-3: Estimated Construction Attenuated Sound Levels of Medium Facilities at Nearest Sensitive Receptor (dBA)

Phase Name	CalEEMod Equipment Type	Equipment Count	RCNM Construction Equipment Type	Usage Factor	Reference SPL L_{REF} (dBA)	Distance to Receptor (ft)	Terrain Coefficient (dBA/ft)	Insertion Loss (dBA)	Window Loss (dBA)	Attenuated SPL L_{MAX} (dBA)	Attenuated SPL L_{EQ} (dBA)	Count RMS L_{MAX} (antilog)	Count RMS L_{EQ} (antilog)	Count SPL L_{MAX} (dBA)	Count SPL L_{EQ} (dBA)
Site Preparation	Rubber Tired Dozers	3	Tractor (rubber tire)	40%	84	164	0.0000	0	0	73.7	69.7	7.00E+07	2.80E+07	78.5	74.5
Site Preparation	Tractors/Loaders/Backhoes	4	Backhoe (with loader)	40%	80	164	0.0000	0	0	69.7	65.7	3.72E+07	1.49E+07	75.7	71.7
Grading	Excavators	2	Excavator (hydraulic)	40%	85	164	0.0000	0	0	74.7	70.7	5.88E+07	2.35E+07	77.7	73.7
Grading	Graders	1	Grader	40%	85	164	0.0000	0	0	74.7	70.7	2.94E+07	1.18E+07	74.7	70.7
Grading	Rubber Tired Dozers	1	Tractor (rubber tire)	40%	84	164	0.0000	0	0	73.7	69.7	2.33E+07	9.34E+06	73.7	69.7
Grading	Tractors/Loaders/Backhoes	2	Backhoe (with loader)	40%	80	164	0.0000	0	0	69.7	65.7	1.86E+07	7.44E+06	72.7	68.7
Grading	Scrapers	2	Scraper	40%	85	164	0.0000	0	0	74.7	70.7	5.88E+07	2.35E+07	77.7	73.7
Building Construction	Cranes	1	Crane	16%	85	164	0.0000	0	0	74.7	66.7	2.94E+07	4.70E+06	74.7	66.7
Building Construction	Forklifts	3	Forklift (front end loader)	40%	80	164	0.0000	0	0	69.7	65.7	2.79E+07	1.12E+07	74.5	70.5
Building Construction	Generator Sets	1	Generator (<25 KVA quiet design)	50%	70	164	0.0000	0	0	59.7	56.7	9.30E+05	4.65E+05	59.7	56.7
Building Construction	Tractors/Loaders/Backhoes	3	Backhoe (with loader)	40%	80	164	0.0000	0	0	69.7	65.7	2.79E+07	1.12E+07	74.5	70.5
Building Construction	Welders	1	Welding Machine (arc welding)	50%	70	164	0.0000	0	0	59.7	56.7	9.30E+05	4.65E+05	59.7	56.7
Paving	Pavers	2	Paver (asphalt)	50%	85	164	0.0000	0	0	74.7	71.7	5.88E+07	2.94E+07	77.7	74.7
Paving	Paving Equipment	2	Paver (asphalt)	50%	85	164	0.0000	0	0	74.7	71.7	5.88E+07	2.94E+07	77.7	74.7
Paving	Rollers	2	Roller	20%	85	164	0.0000	0	0	74.7	67.7	5.88E+07	1.18E+07	77.7	70.7
Architectural Coating	Air Compressors	1	Compressor (air)	40%	80	164	0.0000	0	0	69.7	65.7	9.30E+06	3.72E+06	69.7	65.7
			Ref. Dist. (ft)	**50**											

Table 1-4: Combined Sound Levels Per Construction Phase for Medium Facilities

Phase Name	∑RMS L_{MAX}	∑RMS L_{EQ}	∑SPL L_{MAX} (dBA)	∑SPL L_{EQ} (dBA)
Site Preparation	1.07E+08	4.29E+07	80.3	**76**
Grading	1.89E+08	7.56E+07	82.8	**79**
Building Construction	8.70E+07	2.79E+07	79.4	**74**
Paving	1.76E+08	7.05E+07	82.5	**78**
Architectural Coating	9.30E+06	3.72E+06	69.7	**66**

ATTACHMENT 2 – OPERATIONAL NOISE CALCUATIONS

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Table 2-1: Estimated Operational Attenuated Sound Levels of Small Facilities at Nearest Sensitive Receptor at 50 Meters (dBA)											
Noise Sources	**Usage Factor**	**L_{REF}**	**Number of Equipment**	**D**	**TC**	**IL**	**WL**	**RMS**		**Operational Noise Level (dBA)**	
		dBA		**ft**	**dBA/ft**	**dBA**	**dBA**	**L_{MAX}**	**L_{EQ}**	**L_{MAX}**	**L_{EQ}**
Diesel Grinders	50%	90	1	164	0	0	0	9.3E+07	4.6E+07	79.7	77
Diesel Screens	50%	85	1	164	0	0	0	2.9E+07	1.5E+07	74.7	72
Diesel Stackers	40%	80	1	164	0	0	0	9.3E+06	3.7E+06	69.7	66
Tractors	40%	84	1	164	0	0	0	2.3E+07	9.3E+06	73.7	70
Excavator	40%	85	1	164	0	0	0	2.9E+07	1.2E+07	74.7	71
Loader	40%	84	2	164	0	0	0	2.3E+07	1.9E+07	73.7	73
Windrow Turner	40%	84	1	164	0	0	0	2.3E+07	9.3E+06	73.7	70
Water Truck	40%	84	1	164	0	0	0	2.3E+07	9.3E+06	73.7	70
Sweeper Truck	10%	80	1	164	0	0	0	9.3E+06	9.3E+05	69.7	60
Fuel Truck	5%	84	1	164	0	0	0	2.3E+07	1.2E+06	73.7	61
Combined Operational Noise Levels											**81**

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Table 2-2: Estimated Operational Attenuated Sound Levels of Small Facilities at Nearest Sensitive Receptor at 100 Meters (dBA)											
Noise Sources	**Usage Factor**	**L_{REF}**	**Number of Equipment**	**D**	**TC**	**IL**	**WL**	**RMS**		**Operational Noise Level (dBA)**	
		dBA		**ft**	**dBA/ft**	**dBA**	**dBA**	**L_{MAX}**	**L_{EQ}**	**L_{MAX}**	**L_{EQ}**
Diesel Grinders	50%	90	1	328	0	0	0	2.3E+07	1.2E+07	73.7	71
Diesel Screens	50%	85	1	328	0	0	0	7.3E+06	3.7E+06	68.7	66
Diesel Stackers	40%	80	1	328	0	0	0	2.3E+06	9.3E+05	63.7	60
Tractors	40%	84	1	328	0	0	0	5.8E+06	2.3E+06	67.7	64
Excavator	40%	85	1	328	0	0	0	7.3E+06	2.9E+06	68.7	65
Loader	40%	84	2	328	0	0	0	5.8E+06	4.7E+06	67.7	67
Windrow Turner	40%	84	1	328	0	0	0	5.8E+06	2.3E+06	67.7	64
Water Truck	40%	84	1	328	0	0	0	5.8E+06	2.3E+06	67.7	64
Sweeper Truck	10%	80	1	328	0	0	0	2.3E+06	2.3E+05	63.7	54
Fuel Truck	5%	84	1	328	0	0	0	5.8E+06	2.9E+05	67.7	55
Combined Operational Noise Levels											**75**

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Table 2-3: Estimated Operational Attenuated Sound Levels of Small Facilities at Nearest Sensitive Receptor at 200 Meters (dBA)											
Noise Sources	**Usage Factor**	**L_{REF}**	**Number of Equipment**	**D**	**TC**	**IL**	**WL**	**RMS**		**Operational Noise Level (dBA)**	
		dBA		**ft**	**dBA/ft**	**dBA**	**dBA**	**L_{MAX}**	**L_{EQ}**	**L_{MAX}**	**L_{EQ}**
Diesel Grinders	50%	90	1	656	0	0	0	5.8E+06	2.9E+06	67.6	65
Diesel Screens	50%	85	1	656	0	0	0	1.8E+06	9.2E+05	62.6	60
Diesel Stackers	40%	80	1	656	0	0	0	5.8E+05	2.3E+05	57.6	54
Tractors	40%	84	1	656	0	0	0	1.5E+06	5.8E+05	61.6	58
Excavator	40%	85	1	656	0	0	0	1.8E+06	7.3E+05	62.6	59
Loader	40%	84	2	656	0	0	0	1.5E+06	1.2E+06	61.6	61
Windrow Turner	40%	84	1	656	0	0	0	1.5E+06	5.8E+05	61.6	58
Water Truck	40%	84	1	656	0	0	0	1.5E+06	5.8E+05	61.6	58
Sweeper Truck	10%	80	1	656	0	0	0	5.8E+05	5.8E+04	57.6	48
Fuel Truck	5%	84	1	656	0	0	0	1.5E+06	7.3E+04	61.6	49
Combined Operational Noise Levels											**69**

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Table 2-4: Estimated Operational Attenuated Sound Levels of Small Facilities at Nearest Sensitive Receptor at 500 Meters (dBA)											
Noise Sources	**Usage Factor**	**L_{REF}**	**Number of Equipment**	**D**	**TC**	**IL**	**WL**	**RMS**		**Operational Noise Level (dBA)**	
		dBA		**ft**	**dBA/ft**	**dBA**	**dBA**	**L_{MAX}**	**L_{EQ}**	**L_{MAX}**	**L_{EQ}**
Diesel Grinders	50%	90	1	1640	0	0	0	9.3E+05	4.6E+05	59.7	57
Diesel Screens	50%	85	1	1640	0	0	0	2.9E+05	1.5E+05	54.7	52
Diesel Stackers	40%	80	1	1640	0	0	0	9.3E+04	3.7E+04	49.7	46
Tractors	40%	84	1	1640	0	0	0	2.3E+05	9.3E+04	53.7	50
Excavator	40%	85	1	1640	0	0	0	2.9E+05	1.2E+05	54.7	51
Loader	40%	84	2	1640	0	0	0	2.3E+05	1.9E+05	53.7	53
Windrow Turner	40%	84	1	1640	0	0	0	2.3E+05	9.3E+04	53.7	50
Water Truck	40%	84	1	1640	0	0	0	2.3E+05	9.3E+04	53.7	50
Sweeper Truck	10%	80	1	1640	0	0	0	9.3E+04	9.3E+03	49.7	40
Fuel Truck	5%	84	1	1640	0	0	0	2.3E+05	1.2E+04	53.7	41
Combined Operational Noise Levels											**61**

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Table 2-5: Estimated Operational Attenuated Sound Levels of Small Facilities at Nearest Sensitive Receptor at 610 Meters (dBA)											
Noise Sources	**Usage Factor**	**L_{REF}**	**Number of Equipment**	**D**	**TC**	**IL**	**WL**	**RMS**		**Operational Noise Level (dBA)**	
		dBA		**ft**	**dBA/ft**	**dBA**	**dBA**	**L_{MAX}**	**L_{EQ}**	**L_{MAX}**	**L_{EQ}**
Diesel Grinders	50%	90	1	2000	0	0	0	6.3E+05	3.1E+05	58.0	55
Diesel Screens	50%	85	1	2000	0	0	0	2.0E+05	9.9E+04	53.0	50
Diesel Stackers	40%	80	1	2000	0	0	0	6.3E+04	2.5E+04	48.0	44
Tractors	40%	84	1	2000	0	0	0	1.6E+05	6.3E+04	52.0	48
Excavator	40%	85	1	2000	0	0	0	2.0E+05	7.9E+04	53.0	49
Loader	40%	84	2	2000	0	0	0	1.6E+05	1.3E+05	52.0	51
Windrow Turner	40%	84	1	2000	0	0	0	1.6E+05	6.3E+04	52.0	48
Water Truck	40%	84	1	2000	0	0	0	1.6E+05	6.3E+04	52.0	48
Sweeper Truck	10%	80	1	2000	0	0	0	6.3E+04	6.3E+03	48.0	38
Fuel Truck	5%	84	1	2000	0	0	0	1.6E+05	7.8E+03	52.0	39
Combined Operational Noise Levels											**59**

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Table 2-6: Estimated Operational Attenuated Sound Levels of Medium Facilities at Nearest Sensitive Receptor at 50 Meters (dBA)											
Noise Sources	**Usage Factor**	**L_{REF}**	**Number of Equipment**	**D**	**TC**	**IL**	**WL**	**RMS**		**Operational Noise Level (dBA)**	
		dBA		**ft**	**dBA/ft**	**dBA**	**dBA**	**L_{MAX}**	**L_{EQ}**	**L_{MAX}**	**L_{EQ}**
Diesel Grinders	50%	90	1	164	0	0	0	9.3E+07	4.6E+07	79.7	77
Diesel Screens	50%	85	1	164	0	0	0	2.9E+07	1.5E+07	74.7	72
Diesel Stackers	40%	80	1	164	0	0	0	9.3E+06	3.7E+06	69.7	66
Diesel Colorizer	50%	85	1	164	0	0	0	2.9E+07	1.5E+07	74.7	72
Tractors	40%	84	1	164	0	0	0	2.3E+07	9.3E+06	73.7	70
Excavator	40%	85	1	164	0	0	0	2.9E+07	1.2E+07	74.7	71
Loader	40%	84	3	164	0	0	0	2.3E+07	2.8E+07	73.7	74
Windrow Turner	40%	84	1	164	0	0	0	2.3E+07	9.3E+06	73.7	70
Water Truck	40%	84	1	164	0	0	0	2.3E+07	9.3E+06	73.7	70
Sweeper Truck	10%	80	1	164	0	0	0	9.3E+06	9.3E+05	69.7	60
Fuel Truck	5%	84	1	164	0	0	0	2.3E+07	1.2E+06	73.7	61
Combined Operational Noise Levels											**82**

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Table 2-7: Estimated Operational Attenuated Sound Levels of Medium Facilities at Nearest Sensitive Receptor at 100 Meters (dBA)											
Noise Sources	**Usage Factor**	**L_{REF}**	**Number of Equipment**	**D**	**TC**	**IL**	**WL**	**RMS**		**Operational Noise Level (dBA)**	
		dBA		**ft**	**dBA/ft**	**dBA**	**dBA**	**L_{MAX}**	**L_{EQ}**	**L_{MAX}**	**L_{EQ}**
Diesel Grinders	50%	90	1	328	0	0	0	2.3E+07	1.2E+07	73.7	71
Diesel Screens	50%	85	1	328	0	0	0	7.3E+06	3.7E+06	68.7	66
Diesel Stackers	40%	80	1	328	0	0	0	2.3E+06	9.3E+05	63.7	60
Diesel Colorizer	50%	85	1	328	0	0	0	7.3E+06	3.7E+06	68.7	66
Tractors	40%	84	1	328	0	0	0	5.8E+06	2.3E+06	67.7	64
Excavator	40%	85	1	328	0	0	0	7.3E+06	2.9E+06	68.7	65
Loader	40%	84	3	328	0	0	0	5.8E+06	7.0E+06	67.7	68
Windrow Turner	40%	84	1	328	0	0	0	5.8E+06	2.3E+06	67.7	64
Water Truck	40%	84	1	328	0	0	0	5.8E+06	2.3E+06	67.7	64
Sweeper Truck	10%	80	1	328	0	0	0	2.3E+06	2.3E+05	63.7	54
Fuel Truck	5%	84	1	328	0	0	0	5.8E+06	2.9E+05	67.7	55
Combined Operational Noise Levels											**76**

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Table 2-8: Estimated Operational Attenuated Sound Levels of Medium Facilities at Nearest Sensitive Receptor at 200 Meters (dBA)											
Noise Sources	**Usage Factor**	**L_{REF}**	**Number of Equipment**	**D**	**TC**	**IL**	**WL**	**RMS**		**Operational Noise Level (dBA)**	
		dBA		**ft**	**dBA/ft**	**dBA**	**dBA**	**L_{MAX}**	**L_{EQ}**	**L_{MAX}**	**L_{EQ}**
Diesel Grinders	50%	90	1	656	0	0	0	5.8E+06	2.9E+06	67.6	65
Diesel Screens	50%	85	1	656	0	0	0	1.8E+06	9.2E+05	62.6	60
Diesel Stackers	40%	80	1	656	0	0	0	5.8E+05	2.3E+05	57.6	54
Diesel Colorizer	50%	85	1	656	0	0	0	1.8E+06	9.2E+05	62.6	60
Tractors	40%	84	1	656	0	0	0	1.5E+06	5.8E+05	61.6	58
Excavator	40%	85	1	656	0	0	0	1.8E+06	7.3E+05	62.6	59
Loader	40%	84	3	656	0	0	0	1.5E+06	1.8E+06	61.6	62
Windrow Turner	40%	84	1	656	0	0	0	1.5E+06	5.8E+05	61.6	58
Water Truck	40%	84	1	656	0	0	0	1.5E+06	5.8E+05	61.6	58
Sweeper Truck	10%	80	1	656	0	0	0	5.8E+05	5.8E+04	57.6	48
Fuel Truck	5%	84	1	656	0	0	0	1.5E+06	7.3E+04	61.6	49
Combined Operational Noise Levels											**70**

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Table 2-9: Estimated Operational Attenuated Sound Levels of Medium Facilities at Nearest Sensitive Receptor at 500 Meters (dBA)											
Noise Sources	**Usage Factor**	**L_{REF}**	**Number of Equipment**	**D**	**TC**	**IL**	**WL**	**RMS**		**Operational Noise Level (dBA)**	
		dBA		**ft**	**dBA/ft**	**dBA**	**dBA**	**L_{MAX}**	**L_{EQ}**	**L_{MAX}**	**L_{EQ}**
Diesel Grinders	50%	90	1	1640	0	0	0	9.3E+05	4.6E+05	59.7	57
Diesel Screens	50%	85	1	1640	0	0	0	2.9E+05	1.5E+05	54.7	52
Diesel Stackers	40%	80	1	1640	0	0	0	9.3E+04	3.7E+04	49.7	46
Diesel Colorizer	50%	85	1	1640	0	0	0	2.9E+05	1.5E+05	54.7	52
Tractors	40%	84	1	1640	0	0	0	2.3E+05	9.3E+04	53.7	50
Excavator	40%	85	1	1640	0	0	0	2.9E+05	1.2E+05	54.7	51
Loader	40%	84	3	1640	0	0	0	2.3E+05	2.8E+05	53.7	54
Windrow Turner	40%	84	1	1640	0	0	0	2.3E+05	9.3E+04	53.7	50
Water Truck	40%	84	1	1640	0	0	0	2.3E+05	9.3E+04	53.7	50
Sweeper Truck	10%	80	1	1640	0	0	0	9.3E+04	9.3E+03	49.7	40
Fuel Truck	5%	84	1	1640	0	0	0	2.3E+05	1.2E+04	53.7	41
Combined Operational Noise Levels											**62**

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Table 2-10: Estimated Operational Attenuated Sound Levels of Medium Facilities at Nearest Sensitive Receptor at 610 Meters (dBA)											
Noise Sources	**Usage Factor**	**L_{REF}**	**Number of Equipment**	**D**	**TC**	**IL**	**WL**	**RMS**		**Operational Noise Level (dBA)**	
		dBA		**ft**	**dBA/ft**	**dBA**	**dBA**	**L_{MAX}**	**L_{EQ}**	**L_{MAX}**	**L_{EQ}**
Diesel Grinders	50%	90	1	2000	0	0	0	6.3E+05	3.1E+05	58.0	55
Diesel Screens	50%	85	1	2000	0	0	0	2.0E+05	9.9E+04	53.0	50
Diesel Stackers	40%	80	1	2000	0	0	0	6.3E+04	2.5E+04	48.0	44
Diesel Colorizer	50%	85	1	2000	0	0	0	2.0E+05	9.9E+04	53.0	50
Tractors	40%	84	1	2000	0	0	0	1.6E+05	6.3E+04	52.0	48
Excavator	40%	85	1	2000	0	0	0	2.0E+05	7.9E+04	53.0	49
Loader	40%	84	3	2000	0	0	0	1.6E+05	1.9E+05	52.0	53
Windrow Turner	40%	84	1	2000	0	0	0	1.6E+05	6.3E+04	52.0	48
Water Truck	40%	84	1	2000	0	0	0	1.6E+05	6.3E+04	52.0	48
Sweeper Truck	10%	80	1	2000	0	0	0	6.3E+04	6.3E+03	48.0	38
Fuel Truck	5%	84	1	2000	0	0	0	1.6E+05	7.8E+03	52.0	39
Combined Operational Noise Levels											**60**