Draft Environmental Impact Report

SB 1383 Regulations
Short-Lived Climate Pollutants:
Organic Waste Methane Emission Reduction

Contractor's Report Produced under Contract by:

Ascent Environmental, Inc.
Integrated Waste Management Consulting, LLC

Prepared for:

CalRecycle

Department of Resources Recycling and Recovery

July 30, 2019

STATE OF CALIFORNIA

Gavin Newsom
Governor

Jared Blumenfeld
Secretary, California Environmental Protection Agency

DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY

Scott Smithline
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

Publication # DRRR-2019-1655

To conserve resources and reduce waste, CalRecycle reports are produced in electronic format only. If printing copies of this document, please consider use of recycled paper containing 100 percent postconsumer fiber and, where possible, please print images on both sides of the paper.

Prepared as part of contract number DRR18084 for $300,000.

The California Department of Resources Recycling and Recovery (CalRecycle) does not discriminate on the basis of disability in access to its programs. CalRecycle publications are available in accessible formats upon request by calling the Public Affairs Office at (916) 341-6300. Persons with hearing impairments can reach CalRecycle through the California Relay Service, 1-800-735-2929.

The Draft EIR assesses potential environmental effects that may result from the implementation of the CalRecycle's proposed regulations on SLCP Organic Waste Methane Emission Reduction Requirements. The Draft Program EIR evaluates and describes, on a statewide, program-level basis, the potential environmental impacts associated with the implementation of the regulations, including the expected construction and operation of organic waste recovery facilities, identifies those impacts that could be significant, and presents mitigation measures, which, if adopted by CalRecycle or other responsible agencies, could avoid or minimize these impacts.

Table of Contents

Appendices

Figures

Tables

List of Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
AB	Assembly Bill
AD	anaerobic digestion
ADC	alternative daily cover
AIC	alternative intermediate cover
AFV	alternative fuel vehicles
ASP	aerated static piles
BIOS	Biogeographic Information and Observation System
BLM	U.S. Bureau of Land Management
BMP	best management practice
Board	Board of Forestry and Fire Protection
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/OSHA	California Division of Occupational Safety and Health
CALGreen	California Green Building Standards
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCC	California Coastal Commission
CCR	California Code of Regulations
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CO	carbon monoxide

CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationships system
DOC	Department of Conservation's
DOT	U.S. Department of Transportation
Draft EIR	draft environmental impact report
DTSC	California Department of Toxic Substances Control
EIR	environmental impact report
EOP	emergency operations plan
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
FAA	Federal Aviation Administration
FMMP	Farmland Mapping and Monitoring Program
GHG	greenhouse gases
HAP	hazardous air pollutant
HFC	hydrofluorocarbons
HSC	California Health and Safety Code
ICM	incompatible material
IEPR	Integrated Energy Policy Report
ISOR	Initial Statement of Reasons
LEA	Local Enforcement Agency
MBTA	Migratory Bird Treaty Act
mm	millimeters
MMRP	mitigation monitoring and reporting program
$MMTCO_2e$	metric tons of carbon dioxide equivalent
mpg	miles per gallon
MRF	material recovery facilities

MRZ	Mineral Resource Zone
MSWLF	municipal solid waste landfill facility
MW	megawatts
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NEHRP	National Earthquake Hazards Reduction Program
NH_3	ammonia
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic and Safety Administration
NO_2	nitrogen dioxide
NOA	naturally occurring asbestos
NOP	Notice of Preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OIMP	Odor Impact Minimization Plan
OSHA	federal Occupational Safety and Health Administration
PFRP	Process to Further Reduce Pathogens
PM_{10}	particulate matter with an aerodynamic diameter of 10 micrometers or less)
$PM_{2.5}$	fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
POTW	Publicly Owned Treatment Works
PRC	Public Resources Code
PUC	Public Utilities Code
RNG	renewable natural gas
ROG	reactive organic gases
RPS	renewable portfolio standard
RWQCB	regional water quality control board
SAF Plan	State Alternative Fuels Plan
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill

SCAQMD	South Coast Air Quality Management District
SIP	state implementation plan
SIR	status impact report
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLCP	short-lived climate pollutant
SMARA	State Mining and Reclamation Act of 1975
SPCC	Spill Prevention, Control, and Countermeasure
sq. ft.	square feet
SRA	State Responsibility Area
SRIA	Standardized Regulatory Impact Assessment
SRRE	source reduction and recycling element
SWFP	solid waste facility permit
SWPPP	storm water pollution prevention plan
TAC	toxic air contaminant
TCR	tribal cultural resource
TPZ	Timberland Production Zone
UC	University of California
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
VHFHSZ	very high fire hazard severity zone
VMT	vehicle miles of travel
VOC	volatile organic compound
WDR	Waste Discharge Requirements
WHO	World Health Organization
Williamson Act	California Land Conservation Act
WUI	wildland-urban interface
WWTP	wastewater treatment plant

Executive Summary

ES.1 Background

Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006 (AB 32, Chapter 488, Statutes of 2006), declares that global warming poses a serious threat to the economic well-being, public health, natural resources, and environment of California and charges the California Air Resources Board (CARB) with "monitoring and regulating sources of emissions of greenhouse gases that cause global warming in order to reduce emissions of greenhouse gases (GHGs)." AB 32 provided initial direction on creating a comprehensive multi-year program to limit California's GHG emissions to 1990 levels by 2020 and initiated the transformations required to achieve the state's long-range climate objectives. Since then, Senate Bill (SB) 32 (Pavley, Chapter 249, Statutes of 2016) was enacted, which set a statewide GHG emission target of 40 percent below the 1990 level by 2030.

One specific requirement of AB 32 is to prepare a "scoping plan" for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020. CARB has prepared and adopted the Scoping Plan with multiple updates. Developing a Short-Lived Climate Pollutant (SLCP) Reduction Strategy is identified in the First Update to the Climate Change Scoping Plan as one of the recommended actions to achieve required GHG emission reductions. The SLCP Reduction Strategy addresses black carbon, methane, and hydrofluorocarbons, which are powerful climate forcers and harmful air pollutants with an abbreviated atmospheric lifespan compared to other known climate pollutants (e.g., carbon dioxide). GHG reductions are important to achieving the GHG targets called for by AB 32 and SB 32.

Senate Bill 605 (Lara, Chapter 523, Statutes of 2014) directed CARB to develop a comprehensive SLCP Reduction Strategy, in coordination with other state agencies and local air quality management and air pollution control districts to reduce emissions of GHGs. SB 1383 (Lara, Chapter 395, Statutes of 2016) directed CARB to approve and begin implementing the plan by January 1, 2018, and set statewide 2030 emission reduction targets for methane, hydrofluorocarbons (HFCs), and anthropogenic black carbon. The SLCP Reduction Strategy, approved in March 2017, includes directives for addressing landfill methane emissions via reductions in organic material disposal. The SLCP: Organic Waste Reductions Regulation (proposed regulation) implements these directives.

As required by SB 1383, the California Department of Resources Recycling and Recovery (CalRecycle), in consultation with CARB, is charged with developing regulations to reduce disposal of organic waste by 50 percent of 2014 levels by 2020 and 75 percent by 2025. In addition, at least 20 percent of the edible food in the organic waste stream must be recovered to feed people by 2025. Materials that cannot be effectively recovered for human consumption would be directed to organic waste recovery facilities to make useful products, including compost, fertilizer, fuel, or energy. These facilities may be developed at existing landfills, other waste management sites,

or at new stand-alone sites. These regulations must take effect on or after January 1, 2022.

ES.2 Overview of the Proposed Regulation

The proposed regulation directs actions to achieve the statewide organic waste disposal reduction and edible food recovery targets. CalRecycle, in consultation with CARB, has developed a regulatory approach that requires jurisdictions and other regulated entities to implement a suite of programs to achieve the statute's statewide mandates. The proposed regulation includes provisions related to the following types of activities:

- collection, with a focus on mandatory source-separated collection of organic waste;
- edible food recovery, with a focus on commercial edible food generators, such as wholesale food vendors, supermarkets, grocery stores, and restaurants with 250 or more seats or a total facility size equal to or greater than 5,000 square feet;
- recovery standards at facilities processing organic waste and methods for reducing contamination and the presence of organic waste in disposal streams;
- infrastructure planning, with a focus on regional coordination to plan for future organic waste recovery capacity and edible food recovery operations;
- procurement at the local level of compost; renewable gas used for fuel for transportation, electricity, heating applications, or pipeline injection; electricity from biomass conversion; and recyclable paper products;
- reporting requirements, which are built on existing systems for reporting to CalRecycle; and
- enforcement, with the primary requirements for mandatory enforcement being placed at the local level, but with CalRecycle also having an expanded enforcement role.

The proposed regulation applies to approximately 540 jurisdictions in California; millions of households; thousands of businesses; hundreds of haulers and food recovery organizations; hundreds of material recovery facilities (MRFs), processors, recyclers, and landfills; dozens of local government environmental enforcement agencies; and all schools, federal agencies, and State agencies. The proposed regulation broadly defines organic waste as follows (Section 18982[a][46]):

> Organic waste includes solid waste containing material originating from living organisms and their metabolic waste products, including but not limited to food, green material (i.e., yard trimmings and yard waste), landscape and pruning waste, organic textiles and carpets, lumber, wood, paper products, printing and white paper, manure, biosolids and sludges (solid, semi-solid, or liquid residue

generated during the treatment of domestic sewage in a treatment works), and digestate (solid, semi-solid, or liquid residue produced in digesters).

Organic wastes make up approximately 67 percent of the total waste stream (CalRecycle 2015, 2019. This total includes organic waste currently sent to landfills for uses considered “diversion” or “beneficial reuse under previous statutes. These activities include alternative daily cover (ADC), alternative intermediate cover (AIC), and other beneficial reuse (material used for buttressing, fill or other uses).

ES.3 Project Objectives

The major implementation objectives of the proposed regulation are as follows:

1. Reduce the level of statewide disposal of organic waste to 50 percent of the 2014 levels by 2020 and 75 percent by 2025.
2. By 2025, recover 20 percent of the amount of edible food currently disposed of so it can be used for human consumption.

Achieving these targets is essential to achieving the GHG emission reductions identified in the SLCP Reduction Strategy, as well as the State’s larger 2030 climate change goals.

ES.4 Intended Uses of This EIR

This document is a program environmental impact report (EIR), prepared in accordance with State California Environmental Quality Act (CEQA) Guidelines Section 15168. A program EIR may be prepared on a series of actions that can be characterized as one large project and that are related to, among other things, the issuance of general criteria to govern the conduct of a continuing program or to individual activities carried out under the same authorizing statutory or regulatory authority, and having generally similar environmental effects that can be mitigated in similar ways.

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 noted in Section 15168(c) of the State CEQA Guidelines, later proposed activities that are consistent with the proposed regulation would be examined in light of the information in this EIR to determine whether an additional environmental document must be prepared. 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 and no new or substantially more severe significant impacts would occur and no new mitigation measures would be required, no additional CEQA documentation would be needed. Under this circumstance, a notice of determination would be filed that indicates that this EIR adequately covers the environmental effects of the proposed project. Under this CEQA compliance approach, the lead agency must adopt all feasible mitigation measures from this EIR to address significant or potentially significant effects on the environment. If the lead agency on a future and related project finds that it is not

entirely within the scope of the proposed regulation, additional CEQA analysis, including preparation of a project-specific mitigated negative declaration or EIR may be required.

It is important within the context of this EIR to understand the extent of the relevant authority of CalRecycle. It provides technical assistance to Local Enforcement Agencies (LEA) that enforce state solid waste law in local jurisdictions pursuant to CalRecycle certification. CalRecycle also promulgates the state regulations governing the issuance of solid waste facility permits by LEAs, with the concurrence of 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 the enforcement of state minimum standards for solid waste handling, transfer, composting, transformation and disposal in accordance with Division 30 of the Public Resources Code (PRC) and associated regulations. The conditions that may be enforced through such permits are restricted in scope. For example, PRC Sections 43020 and 43021 prohibit the enforcement of permit conditions related to air quality or water quality. In addition, PRC Section 43101 expands such restrictions to prohibit CalRecycle authority from overlapping with the authority of any other state agency, which further curtails the types of permit conditions that may be enforced. Under PRC Section 44012, CalRecycle and LEAs are limited to imposing operational conditions on solid waste facilities rather than pre-operational conditions, such as those that might govern facility construction. Furthermore, operational conditions must be limited to those that protect public health, safety, and the environment within the authority of CalRecycle and LEAs to enforce state minimum standards. As such, solid waste facility permit operating conditions may not extend to regulating issues such as tribal cultural resources.

CalRecycle does not have general land use authority to approve facilities or other structures that are developed in response to adoption of the proposed regulation. Such authority is vested, instead, with local jurisdictions under their land use powers (such as police power) and exercised through the issuance of local entitlements such as conditional use permits. The conditions that are curtailed by law from being included in state solid waste facility permits may be more appropriately included in local entitlements. Like any proposed development project, organic waste and food waste recovery facilities would be reviewed individually by local jurisdictions, in response to applications submitted by project proponents The goal of this Draft EIR is to consider the types of potential environmental effects of the reasonably foreseeable compliance responses that would be anticipated to meet the requirements included in the proposed SB 1383 regulation.

ES.5 Summary of Alternatives

The alternatives identified below are addressed in more detail in Chapter 5, “Alternatives.”

The following alternatives were considered by CalRecycle but are not evaluated further in this Draft EIR:

- Undersink Disposer Alternative

- Landfill Gas Collection Efficiency Alternative
- Co-Locate Organic Waste Recovery Facilities Only at Existing Solid Waste Handling Facilities and WWTPs Alternative
- Prohibit Mixed (Single- and Two-Container) Organic Waste Collection Programs Alternative

The following alternatives are evaluated in this Draft EIR:

- **Alternative 1: No Project Alternative** assumes that the proposed regulation would not be adopted.
- **Alternative 2: Limit the Types of Facilities, Operations, and Activities that Process or Use Organic Waste in a Way that Constitutes a Reduction of Landfill Disposal Alternative.** This alternative would limit Article 2 (14 CCR Section 18983.1[b]) of the proposed regulation to include only compost facilities, AD facilities, and recycling centers as the types of facilities, operations, and activities that would constitute a reduction in landfill disposal or recovery.
- **Alternative 3: Expand List of Targeted Commercial Edible Food Generators Alternative.** This alternative would expand the list of targeted commercial edible food generators in Article 10 (14 CCR 18991.3) of the proposed regulation with the intent of increasing the volume of edible food recovered (potentially reducing the overall food insecurity rate in California) and reducing the amount of material that needs to be managed as waste.

ES.6 Areas of Controversy and Issues to Be Resolved

According to Section 15143 of the State CEQA Guidelines, a lead agency must focus the EIR's analysis on the significant environmental effects on the environment. CalRecycle used several information sources to determine the environmental resources that could experience significant impacts. These sources included but were not limited to peer-reviewed literature, agency information databases, agency consultation, and consideration of scoping comments received on the Notice of Preparation (NOP) of the Draft EIR and during the public scoping meetings. The following issues and areas of concern are known and/or were raised by agencies or interested parties during the NOP review periods:

- air quality emissions;
- GHG emissions, especially methane;
- existing gas recovery systems in landfills;
- changes to traffic and transportation patterns, including vehicle miles traveled;
- conversion of agricultural lands to other uses;

- potential for pathogens in compostable materials and the effects of this contamination on land application;
- the ability for markets to handle organic materials; and
- the State's ability to achieve the mandated goals of SB 1383.

Issues to be resolved include whether the Director will approve the proposed regulation.

ES.7 Environmental Impacts of the Proposed Regulation

Table ES-1, presented at the end of this executive summary, provides a summary of the environmental impacts of the proposed regulation. The table identifies the level of significance of the impact before mitigation, recommended mitigation measures, and the level of significance of the impact after implementation of the mitigation measures.

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
3.1 Aesthetics			
Impact 3.1-1: Short-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 Construction of Facilities in Response to the Proposed Regulation Varying degrees of temporary degradation of public views would result during construction of facilities in response to the proposed regulation. Although there is uncertainty regarding the location of these facilities, construction activities and equipment associated with new facilities or modifications to existing facilities could introduce or increase the presence of visible artificial elements in areas of scenic importance, such as areas visible from State scenic highways. This impact would be potentially significant.	PS	**Mitigation Measure 3.1-1: Implement Aesthetic Resource Protection Measures during Construction of New or Modified Facilities in Response to the Proposed Regulation** As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant construction-related aesthetics impacts. Mitigation measures to reduce construction-related aesthetics impacts can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on aesthetic resources: • Proponents of new facilities constructed as a result of reasonably foreseeable compliance responses would coordinate with State or local land use agencies to seek entitlements for development. This process would involve the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must follow all applicable environmental regulations as part of approval of a development project. • Project proponents would implement all feasible mitigation identified during the environmental review to reduce or substantially lessen the potentially significant aesthetic impacts of the project. Actions may include equipment storage siting during construction within a property, daily clean-up of the	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		construction site, and temporary fencing to prevent views of construction areas. • To the extent feasible, the sites selected for use as construction staging and laydown areas would be areas that are already disturbed or are in locations of low visual sensitivity. Where feasible, construction staging and laydown areas for equipment, personal vehicles, and material storage would be sited to take advantage of natural screening opportunities provided by existing structures, topography, and vegetation. Temporary visual screens would be used where helpful if existing landscape features would not screen views of the areas. • All construction and maintenance areas would be kept clean and tidy, areas where construction materials and equipment are stored would be screened from view or be located in areas generally not visible to the public, and	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		disturbed soil would be revegetated, where feasible. • To the greatest extent feasible, alteration of the visual setting of important scenic landscape features, areas in a setting for observation from State scenic highways, national or state historic sites, public trails, and cultural resources will be avoided when siting projects and their associated elements.	
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 Facilities in Response to the Proposed Regulation Implementation of the proposed regulation would result in operation of new or modified organic waste handling and processing facilities at or near existing facilities or in urban areas zoned for industrial or solid waste handling facilities. The new or modified facilities would be similar in visual	PS	**Mitigation Measure 3.1-2: Implement Aesthetic Resource Protection Measures during Operation of New or Modified Facilities in Response to the Proposed Regulation** Consideration of a project's long-term aesthetic effects is typically subject to the purview of a local jurisdiction, based on its planning policies, ordinances, and/or design guidelines. Conditions of approval in a solid waste facility permit would not extend to regulating aesthetic impacts on a scenic vista, visual character, or quality of public view on scenic resources in a State scenic	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
character to other nearby industrial or solid waste facilities. Thus, operations at these facilities would not substantially degrade the character or quality of public views. Long-term effects on aesthetics could occur from operation of new or modified facilities in response to the proposed regulation. New organic waste recovery and processing facilities that are located in agricultural or other areas not previously developed for solid waste, agricultural, or wastewater treatment facilities could degrade public views from a scenic vista, degrade the visual character or quality of public views of the site, or disrupt views from a State scenic highway. The long-term operational impacts on scenic vistas, visual character, or quality of public views or on scenic resources in a State scenic highway associated with operation of facilities in response to the proposed regulation would be potentially significant.		highway system. Site-specific, project impacts and mitigation measures would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval. The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on aesthetic resources: • Proponents of new facilities constructed as a result of reasonably foreseeable compliance responses would coordinate with State or local land use agencies to seek entitlements for development. This process would involve the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must follow all applicable environmental regulations as part of approval of a development project.	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		• All feasible mitigation identified during the environmental review to reduce or substantially lessen the potentially significant scenic or aesthetic impacts of the project would be implemented. Actions may include facility or equipment siting within a property, visual screening by vegetation, fencing or walls to prevent views of operating areas, exterior paint colors that blend with landscapes, and lowest feasible height of visible equipment and structures. • The color and finish of the surfaces of all project structures and buildings visible to the public would be carried out to (1) minimize visual intrusion and contrast by blending with the landscape and (2) comply with local design policies and ordinances. The project proponent would submit a surface treatment plan to the lead agency for review and approval. • All operation and maintenance areas would be kept clean and tidy, areas where construction materials and equipment are stored would be screened	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		from view or located in areas generally not visible to the public, and disturbed soil would be revegetated, where feasible.	
Impact 3.1-3: Conflicts with Applicable Zoning and Other Regulations Governing Scenic Quality New or expanded organic waste handling facilities developed in response to the proposed regulation would either be co-located at or near existing solid waste facilities or at new stand-alone site in areas zoned for industrial or solid waste–handling facilities; it is more likely that new facilities would be co-located at existing solid waste–handling facilities in urbanized areas. Edible food recovery and community-scale composting facilities are likely to be located in urban areas. Existing solid waste–handling facilities are largely located in areas zoned for such uses, such as an industrial or solid waste zoning category that takes into account the scenic character of such uses. Facilities associated with future compliance responses would result in	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
a less-than-significant impact related to conflicts with applicable zoning and other regulations governing scenic quality.			
Impact 3.1-4: Temporary or Permanent New Sources of Substantial Light or Glare That Would Adversely Affect Day or Nighttime 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 new or expanded organic waste handling facilities developed in response to the proposed regulation. 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 or modified facilities in rural areas could include infrastructure containing reflective surfaces and could require safety lighting that would be noticeable in those areas. Implementation of the proposed project would result in potentially significant impacts	PS	**Mitigation Measure 3.1-4: Implement Light and Glare Reduction Measures during Operation of New or Modified Facilities in Response to the Proposed Regulation** Consideration of a project's long-term aesthetic effects is typically subject to the purview of a local jurisdiction, based on its planning policies, ordinances, and/or design guidelines. Conditions of approval in a solid waste facility permit would not extend to regulating issues such as the potential for new sources of light and glare to affect day or nighttime views. Site-specific, project impacts and mitigation measures would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
related to permanent new sources of substantial light or glare that would adversely affect day or nighttime views in areas near specific organic waste handling facilities.		The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize light and glare impacts: • Proponents of new facilities constructed as a result of reasonably foreseeable compliance responses would coordinate with State or local land use agencies to seek entitlements for development. This process would involve the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must follow all applicable environmental regulations as part of approval of a development project. • All feasible mitigation identified during the environmental review to reduce or substantially lessen the potentially significant light and glare impacts of the project would be implemented. Actions may include low-height lighting design, window glazing design, or minimized reflective surfaces.	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		• The color and finish of the surfaces of all project structures and buildings visible to the public would be carried out to (1) minimize glare and (2) comply with local design policies and ordinances. The project proponent would submit a surface treatment plan to the lead agency for review and approval. • The project proponent would contact the lead agency to discuss the documentation required in a lighting mitigation plan, submit to the lead agency a plan describing the measures that demonstrate compliance with lighting requirements, and notify the lead agency that the lighting has been completed and is ready for inspection.	
3.2 Agricultural and Forestry Resources			
Impact 3.2-1: Conversion of Farmland to Nonagricultural Use or Conflict with a Williamson Act Contract or Zoning for Agricultural Use Construction and operation of new or modified organic waste recovery facilities	PS	**Mitigation Measure 3.2-1: Implement Agricultural Resource Protection Measures during Construction and Operation of New or Modified Facilities Built in Response to the Proposed Regulation**	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
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 are not known. 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.		As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant impacts related to the location of specific facilities, including those on agricultural lands. Mitigation measures to reduce impacts on agricultural lands can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval. The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on agricultural resources: • Proponents of new facilities constructed as a result of reasonably foreseeable compliance responses would coordinate with local or State land use agencies to	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		seek entitlements for development. This process would involve the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must comply with all applicable regulations as part of approval of a development project. • Project proponents would implement all feasible mitigation identified during the environmental review to reduce or substantially lessen the potentially significant environmental impacts of the project. Examples of types of mitigation to protect Farmland include: ▪ designing proposed projects to minimize, to the greatest extent feasible, the loss of the highest value Farmland; or ▪ for projects that will result in permanent conversion of Farmland, preserve in perpetuity other Farmland through acquisition of an agricultural conservation easement,	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		or contributing funds to a land trust or other entity qualified to preserve Farmland in perpetuity (at a target ratio of 1:1, depending on the nature of the conversion and the characteristics of the Farmland to be converted, to compensate for permanent loss). • Any mitigation specifically required for a new or modified facility would be determined by the local lead agency, and future environmental documents by local and State lead agencies should include analysis of: ▪ avoidance of lands designated as Important Farmland as defined by the FMMP, and ▪ the feasibility of using farmland that is not designated as Important Farmland before deciding on the conversion of Important Farmland. • The feasibility, proximity, and value of the proposed project sites should be balanced before a decision is made to	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		locate a facility on land designated as Important Farmland. • Any action resulting in the conversion of Important Farmland should consider mitigation for the loss of such farmland. Any such mitigation should be completed before a grading or building permit is issued by providing the permitting agency with written evidence that the mitigation has been implemented. Mitigation may include but would not be limited to: ▪ permanent preservation of off-site Important Farmland (State-defined Prime Farmland, Farmland of Statewide Importance, and Unique Farmland) of equal or better agricultural quality, at a ratio of at least 1:1 (preservation may include the purchase of agricultural conservation easement[s], purchase of credits from an established agricultural farmland mitigation bank, and contribution of agricultural land or equivalent funding to an	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		organization that provides for the preservation of farmland toward the ultimate purchase of an agricultural conservation easement), and ▪ participation in any agricultural land mitigation program, including programs maintained by local governments that provide equal or more effective mitigation than the measures listed.	
Impact 3.2-2: Conflict with Existing Zoning for Forestland, Timberland, or Timberland Zoned Timberland Production or Loss of Forestland from Conversion to Nonforest Use Construction and operation of new or modified organic waste recovery facilities could result in significant temporary or permanent conversion of forestland or timberland and could conflict with zoning for forestland, timberland, or lands zoned as TPZ. The specific locations and scale of possible future facilities are not currently known; thus, the precise scale of conversion	PS	**Mitigation Measure 3.2-2: Implement Forest Resource Protection Measures during Construction and Operation of New or Modified Facilities Built in Response to the Proposed Regulation** As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant impacts related to the location of specific facilities, including those on forestland or timberland. Mitigation measures to reduce impacts on forestland	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
of forestland or timberland and conflicts with zoning cannot be determined at this time. Because there could be substantial conversion of forestland and timberland and conflicts with TPZ zoning, this impact would be potentially significant.		and timberland can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval. The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on forestland and timberland: • Proponents of new facilities constructed as a result of reasonably foreseeable compliance responses would coordinate with local or State land use agencies to seek entitlements for development. This process would involve the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must comply with all applicable	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		regulations as part of approval of a development project. • Project proponents would implement all feasible mitigation identified during the environmental review to reduce or substantially lessen the potentially significant environmental impacts of the project. Examples of types of mitigation to protect Farmland include: ▪ avoid land protected as forestland and timberland through site selection or project design. Where feasible, project proponents should take into account the value of the forest, not only in terms of direct products, such as wood, but also as part of the watershed ecosystem, when selecting a project site. Wherever possible, nonprotected sites should be preferred and selected instead of protected sites; and ▪ for projects that would result in permanent conversion of forestland, other forestland would be preserved	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		in perpetuity through a conservation easement or by acquiring lands or contributing funds to a land trust or other agency (at a target ratio of 1:1, depending on the nature of the conversion and the characteristics of the forestland to be converted, to compensate for permanent loss).	
Impact 3.2-3: Changes in the Existing Environment That, Because of Their Location or Nature, Indirectly Result in Conversion of Farmland to Nonagricultural Use or Conversion of Forestland to Nonforest Use Construction of new or modified organic waste facilities built in response to the proposed regulation 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 forestland to nonforest use. The specific locations and scale of possible future facilities are not known; thus, the precise extent and nature	PS	**Mitigation Measure 3.2-3: Implement Agricultural and Forest Resource Protection Measures during Construction and Operation of New or Modified Facilities Built in Response to the Proposed Regulation** As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant impacts related to the location of specific facilities, including those on agricultural and forest lands. Mitigation measures to reduce impacts on agricultural and forest resources can and should be implemented by local jurisdictions with land	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
of indirect conversion of forestland and Farmland from construction activities cannot be identified at this time. Because there could be substantial indirect conversion of Farmland and forestland from implementation of the proposed regulation, this impact would be potentially significant.		use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval. The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on agricultural and forest resources: • Proponents of new facilities constructed as a result of reasonably foreseeable compliance response would coordinate with local or State land use agencies to seek entitlements for development. This process would involve the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must comply with all applicable regulations as part of approval of a development project.	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		• Project proponents would implement all feasible mitigation identified during the environmental review to reduce or substantially lessen the potentially significant environmental impacts of the project. Examples of types of mitigation to protect Farmland and forest resources include: ▪ designing proposed projects to minimize, to the greatest extent feasible, the loss of the highest value Farmland; ▪ for projects that will result in permanent conversion of Farmland, preserve in perpetuity other Farmland through acquisition of an agricultural conservation easement, or contributing funds to a land trust or other entity qualified to preserve Farmland in perpetuity (at a target ratio of 1:1, depending on the nature of the conversion and the characteristics of the Farmland to be	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		converted, to compensate for permanent loss); ■ avoid land protected as forestland and timberland through site selection or project design. Where feasible, project proponents should take into account the value of the forest, not only in terms of direct products, such as wood, but also as part of the watershed ecosystem, when selecting a project site. Wherever possible, nonprotected sites should be preferred and selected instead of protected sites; and ■ for projects that would result in permanent conversion of forestland, other forestland would be preserved in perpetuity through a conservation easement or by acquiring lands or contributing funds to a land trust or other agency (at a target ratio of 1:1, depending on the nature of the conversion and the characteristics of the forestland to be converted, to compensate for permanent loss).	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		• Project proponents would comply with local plans, policies, ordinances, rules, and regulations regarding air quality–related emissions and associated exposure (e.g., construction-related fugitive particulate matter [PM] dust regulations, indirect source review, and payment into off-site mitigation funds). • For projects located in PM nonattainment areas, project proponents shall prepare and comply with a dust abatement plan that addresses emissions of fugitive dust during construction and operation of the project. • An invasive species management plan would be developed and implemented for any project the construction or operation of which could lead to the introduction or facilitation of invasive species establishment. The plan would ensure that invasive plant species and populations are kept below preconstruction abundance and distribution levels.	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
3.3 Air Quality			
Impact 3.3-1: Short-Term Construction-Related Emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ Construction of organic waste recovery facilities under the proposed regulation 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 $PM_{2.5}$ that could exceed local air districts' thresholds of significance. Construction-generated emissions of criteria air pollutants and precursors would be potentially significant.	PS	**Mitigation Measure 3.3-1: Implement All Feasible On- and Off-Site Mitigation Measures to Reduce Construction-Generated Air Pollutants to Below a Lead Agency–Approved Threshold of Significance** As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to include permit conditions regulating air quality. Lead agencies would evaluate a project's construction emissions against the applicable threshold of significance developed by a lead agency and/or air district. In cases where these thresholds are exceeded, mitigation measures to reduce construction-generated air pollutants can and should be implemented by local jurisdiction with permitting authority. Site-specific, project impacts and mitigation measures would be identified during a project's local review process. A proposed project would be approved by a local government and/or the	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		applicable air district as conditions of approval. The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on construction-generated air pollutants. • Project proponents shall apply for, secure, and comply with all appropriate air quality permits for project construction from the local agencies with air quality jurisdiction and from other applicable agencies, if appropriate, prior to construction mobilization. • Project proponents shall comply with the CAA and the CAAA (e.g., New Source Review and Best Available Control Technology criteria, if applicable). • Project proponents shall comply with local plans, policies, ordinances, rules, and regulations regarding air quality–related emissions and associated exposure (e.g., construction-related fugitive PM dust regulations, indirect	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		source review, and payment into off-site mitigation funds). • For projects located in PM nonattainment areas, project proponents shall prepare and comply with a dust abatement plan that addresses emissions of fugitive dust during construction of the project. • Project proponents shall apply EPA Tier 3 or 4 emissions standards for projects found to generate exhaust NO_X emissions in exceedance of an applicable threshold of significance. • Project proponents shall use all feasible biodiesel-, combined natural gas–, and electricity-powered heavy-duty equipment for projects that generate emissions in exceedance of an applicable threshold.	
Impact 3.3-2: Long-Term Operational Emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ Operation of organic waste recovery facilities under the proposed regulation	PS	**Mitigation Measure 3.3-2: Implement All Feasible On- and Off-Site Mitigation Measures to Reduce Operation-Related**	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
would result in reductions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ associated with the diversion of organic materials from landfills to facilities with the capacity to implement strategies to reduce such emissions. However, AD and composting facilities, and other organic waste recovery facilities, would also generate air pollution from the on- and off-road mobile sector. On-road vehicles (e.g., refuse and other collection trucks, commute-related automobiles) accessing organic waste recovery facilities would generate emissions of criteria air pollutants and precursors. New emissions could occur at AD and composting facilities either from diesel engine grinders, flaring of biogas or both, 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 air pollutants. Therefore, operation-related air quality impacts would be potentially significant.		**Air Pollutants to Below a Lead Agency–Approved Threshold of Significance** As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to include permit conditions regulating air quality. Lead agencies would evaluate a project's operational emissions against the applicable threshold of significance developed by a lead agency and/or air district. In cases where these thresholds are exceeded, mitigation measures to reduce operation-related air pollutants can and should be implemented by local jurisdiction with permitting authority. Site-specific, project impacts and mitigation measures would be identified during a project's local review process. A proposed project would be approved by a local government and/or the applicable air district as conditions of approval. The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on operation-related air pollutants.	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		• Project proponents shall comply with the CAA and CAAA (e.g., New Source Review and Best Available Control Technology criteria, if applicable). • Project proponents shall 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). • Project applicants shall establish a requirement pertaining to the use of biogas for electricity and facility-related vehicles. • Project applicants shall establish a maximum rate at which flaring may occur at a facility.	
Impact 3.3-3: Compliance with Air Quality Management Plans The proposed regulation would be compliant with statewide plans and programs that serve to reduce air pollution.	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
Plans and programs applicable to the proposed regulation include the Mobile Source Strategy and the SLCP Reduction Strategy. This impact would be less than significant.			
Impact 3.3-4: Exposure of Sensitive Receptors to TAC Emissions Construction of organic waste recovery facilities built in response to the proposed regulation would generate short-term emissions of diesel PM; however, emissions would be temporary. Given the timeline established by SB 1383, construction phasing likely would not exceed 5 years (i.e., it would be operational by 2025). Operation of organic waste recovery facilities under the proposed regulation would result in reductions in emissions of TACs as compared to existing conditions at landfills. TACs generated by the reasonably foreseeable organic waste recovery facilities would constitute a stationary source and would be subject to the permitting requirements set by the appropriate air district. However, it is foreseeable that	PS	**Mitigation Measure 3.3-4: Conduct a Health Risk Assessment and Implement On-Site TAC-Reducing Mitigation Measures** As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to include permit conditions regulating air quality. Lead agencies would evaluate a project's operational emissions against the applicable threshold of significance developed by a lead agency and/or air district. In cases where these thresholds are exceeded, mitigation measures to reduce operation-related air pollutants can and should be implemented by local jurisdiction with permitting authority. Site-specific, project impacts and mitigation measures would be identified during a project's local review process. A proposed	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
emissions of diesel PM could result in localized air quality impacts from the operational of diesel-powered on- and off-road equipment. This impact would be potentially significant.		project would be approved by a local government and/or the applicable air district as conditions of approval. The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on operation-related air pollutants. In cases where TAC emission thresholds are exceeded, future project proponents should conduct an HRA prior to commencing operation. The HRA should be prepared pursuant to the most recent guidance published by OEHHA. The HRA should estimate TAC emissions from both existing and proposed TAC sources including on- and off-site mobile and stationary sources. The HRA should determine the maximum incremental increase in cancer risk from the long-term operation of organic waste recovery facilities. Future project proponents should evaluate this incremental increase against an applicable threshold of significance as determined by the relevant air district. In cases where the incremental increase	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		exceeds these thresholds, on-site mitigation shall be applied. The following are operation-related mitigation measures that are typically applied to projects on site to reduce TAC emissions: • 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.	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		• Project proponents shall utilize renewable natural gas to power on-road vehicles accessing future project sites.	
Impact 3.3-5: Exposure of Sensitive Receptors to Odors Implementation of the proposed regulation would require the operation of new and expanded organic waste recovery facilities throughout the state. Adverse odors could be generated by activities performed at these facilities, including the handling of feedstock materials and the off-gassing of odors generated during the decomposition of organic materials. Finished compost applied to agricultural and other land uses could also create objectionable odors. Odor impacts related to the proposed regulation would be potentially significant.	PS	**Mitigation Measure 3.3-5a: Comply with Appropriate Local Land Use Plans, Policies, and Regulations** As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would require compliance with appropriate local land use plans, policies, and regulations. Local agencies can and should require individual projects to be consistent with appropriate local land use plans, policies, and regulations, including any applicable setbacks or buffer zones around sensitive land uses for potentially odiferous processes, as part of project approval requirements **Mitigation Measure 3.3-5b: Prepare an Odor Impact Minimization Plan or Odor Management Plan**	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		Pursuant to 14 CCR 17863.4 and 17896.31, future project proponents of compost and AD facilities shall prepare an OIMP to mitigate adverse odor impacts as a condition of approval. Project proponents of other organic waste recovery facilities (e.g., MRFs and rendering facilities) not subject to 14 CCR 17863.4 or 17896.31 shall develop and implement an Odor Management Plan that includes odor control strategies similar to those that would be included in an OIMP, such as the following possible strategies: • Prepare a list of potential odor sources. • Identify and describe the most likely sources of odor. • Identify the potential for, probable intensity of, and frequency of odor from likely sources. • Prepare a list of odor control technologies and management practices that could be implemented to minimize odor releases. These management practices shall entail the establishment	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		of, but shall not be limited to, the following criteria: ■ Require that substrate hauled to facilities is within sealed containers. ■ Provide enclosed, negative-pressure buildings for indoor receiving and preprocessing. ■ Treat collected odiferous air in a biofilter or air scrubbing system. ■ Establish a time limit for on-site retention of undigested substrates (e.g., substrates must be digested within 24 hours of reaching a site). ■ Combine organic feedstocks with coarse, dry building amendments to aerate feedstock. ■ Blend fresh organic feedstocks with finished compost, or apply a compost blanket of finished compost to fresh piles.	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		■ Manage the delivery schedule to facilitate the prompt handling of odorous substrates. ■ Handle digestate within enclosed buildings and/or directly pump it to sealed containers for transportation. ■ Identify a protocol for monitoring and recording odor releases. ■ Identify a protocol for reporting and responding to odor releases.	
Impact 3.3-6: Exposure of Sensitive Receptors to Mobile-Source CO Concentrations Implementation of the proposed regulation would result in increased VMT associated with the movement of organics to organic waste recovery facilities. CO would be emitted from this increase; 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	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
the past decade. This impact would be less than significant.			
3.4 Archaeological, Historical, and Tribal Cultural Resources			
Impact 3.4-1: Substantial Adverse Change in the Significance of Built Historical Resources Development of new or expanded organic waste recovery facilities to comply with SB 1383 requirements could occur on lands that contain built historical resources. Because proposed 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.	PS	**Mitigation Measure 3.4-1: Survey and Redesign or Avoid Significant Historical Resources** As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce impacts on historical resources. Mitigation measures to reduce potential impacts on historical resources can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on historical resources: • Applicants of projects shall identify and evaluate all historic-age (over 45 years in age) buildings and structures that are proposed to be removed and modified as part of the proposed regulation. This will include preparation of a historic structure report and evaluation of resources to determine their eligibility for recognition under federal, State, or local criteria. The evaluation shall be prepared by an architectural historian, or historical architect meeting the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, Professional Qualification Standards. The evaluation shall comply with State CEQA Guidelines Section 15064.5(b) and, if federal funding or permits are required, with Section 106 of the NHPA of 1966 (16 U.S. Code Section 470 et seq.).	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		• If resources eligible for inclusion in the NRHP, CRHR, or Local Official Register of Historic Resources are identified, an assessment of impacts on those resources shall be included in the report, as well as detailed measures to avoid impacts. If avoidance of a significant architectural/built environment resource is not feasible, additional mitigation options shall include, but not be limited to, specific design plans for historic districts or plans for alteration or adaptive reuse of a historical resource that follows *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitation, Restoring & Reconstructing Historic Buildings*.	
Impact 3.4-2: Disturbance to Unique Archaeological Resources The reasonably foreseeable development projects associated with the proposed regulation could be located on properties that contain known or unknown archaeological resources, and ground-	PS	**Mitigation Measure 3.4-2: Avoid Potential Effects on Archaeological Resources** As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
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.		impacts on archaeological resources. Mitigation measures to reduce potential impacts on archaeological resources can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval. The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on archaeological resources: • Applicants for projects that include any ground disturbance shall retain a qualified archaeologist to conduct archaeological surveys of the site. The applicant shall follow recommendations identified in the survey, which may include activities such as subsurface testing, design and implementation of a Worker Environmental Awareness Program, construction monitoring by a	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		qualified archaeologist, avoidance of sites, or preservation in place. • All projects shall include the following requirements as a condition of approval: If evidence of any prehistoric or historic-era subsurface archaeological features or deposits are discovered during construction-related earth-moving activities (e.g., ceramic shard, trash scatters, lithic scatters), all ground-disturbing activity in the area of the discovery shall be halted and the county shall be notified immediately. A qualified archaeologist shall be retained to assess the significance of the find. If the find is a prehistoric archaeological site, the appropriate Native American group shall be notified. If the archaeologist determines that the find does not meet NRHP or CRHR standards of significance for cultural resources, construction may proceed. If the archaeologist determines that further information is needed to evaluate significance, a data recovery plan shall	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		be prepared. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either a historical resource or a unique archaeological resource), the archaeologist shall work with the project 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 in recording any find, including submittal of the standard California Department of Parks and Recreation (DPR) Primary Record forms (Form DPR 523) and location information to the relevant information center, shall be followed.	
Impact 3.4-3: Substantial Adverse Change to Tribal Cultural Resources CalRecycle sent notification for consultation to three tribes on April 17, 2019. No responses were received at the time of release of this EIR. Because implementation of the proposed regulation	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
would comply with PRC Sections 21080.3.2, 21084.3, and 5097.9, this impact would be less than significant.			
Impact 3.4-4: Disturbance to Human Remains Prehistoric or historic-era marked or unmarked human interments are present throughout California. Ground-disturbing activities related to construction of new or expanded organic waste recovery facilities could uncover previously unknown human remains. Compliance with California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097 would avoid disturbance. This impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
3.5 Biological Resources			
Impact 3.5-1: Adverse Effect on Special-Status Species, Either Directly or through Habitat Modifications It is reasonably foreseeable to expect new or expanded facilities to be located at or near existing landfills or material recovery facilities, or in urban locations zoned for	PS	**Mitigation Measure 3.5-1: Incorporate Avoidance and Minimization Measures Consistent with Resource Agency Regulatory Requirements** If a proposed facility project site consists entirely of developed uses, fully disturbed land, non-native vegetation, or a	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
industrial or heavy commercial use, so in most circumstances, adverse effects to sensitive species would not occur. However, the potential to intrude into or displace natural habitat supporting special-status species cannot be fully dismissed, such as for project sites on urban/rural edges. 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. Development of organic wasted recovery facilities could result in the disturbance or loss of special-status plant and wildlife species and habitats, if they are located in areas of natural habitat. Therefore, this impact would be categorized as potentially significant.		combination thereof and natural habitat is not present, the proponent will report these conditions during the project's local government review process. No additional biological resource assessment or facility design responses are required. If a proposed facility project site contains or is likely to contain natural habitat, the agency with approval authority over the project must require project sponsors to incorporate avoidance and minimization measures into the facility design, so that natural habitats and special-status species do not experience significant adverse effects. If avoidance and minimization are not feasible, the proponent will coordinate with the appropriate resources agency to identify site-specific biological resource assessments to define the design features or other actions necessary to protect sensitive species and habitats, or compensate for habitat or species effects that cannot be avoided. The assessment shall be conducted by qualified	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		professionals pursuant to adopted protocols and agency guidelines and applied to project regulatory compliance. The project proponent shall comply with the mitigation requirements needed to achieve permit approval by the appropriate resource agency, so that special-status species are adequately protected or adequate compensatory actions are included.	
Impact 3.5-2: Substantial Adverse Effects on Riparian Habitat, Federally Protected Wetlands, or Other Sensitive Natural Communities through Direct Removal, Filling, Hydrological Interruption, or Other Means It is reasonably foreseeable to expect new or expanded facilities to be located at or near existing landfills or material recovery facilities, or in urban locations zoned for industrial or heavy commercial use, so in most circumstances, adverse effects to sensitive habitats would not occur. However, the potential to intrude into or displace sensitive habitats cannot be fully dismissed, such as for project sites on	PS	**Mitigation Measure 3.5-2: Avoid or Minimize Impacts, or Compensate for Unavoidable Loss of Sensitive Habitat** If a proposed facility project site contains or is likely to contain sensitive habitats, the agency with approval authority over the project shall require project sponsors to incorporate avoidance and minimization measures into the facility design, so that natural habitats and special-status species do not experience significant adverse effects. In keeping with the “no net loss” policy for wetlands and other waters, project designs shall be configured, whenever possible, to	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
urban/rural edges. Potential impacts could include disturbance or loss of jurisdictional waters, including wetlands; loss or degradation of stream or wetland function; incremental degradation of wetland habitats; and fragmentation of streams and wetlands. Development of organic wasted recovery facilities could result in the disturbance or loss of sensitive habitats, if those resources are located at future project sites. Therefore, this impact would be potentially significant.		avoid wetlands and other waters and avoid disturbances to wetlands and riparian corridors to preserve both the habitat and the overall ecological functions of these areas. Projects shall minimize ground disturbances and transportation project footprints near such areas to the extent practicable. Where avoidance of jurisdictional waters is not feasible, project sponsors must minimize fill and the use of in-water construction methods, and place fill only with express permit approval from the appropriate resources agencies (e.g., USACE, RWQCB, CDFW, BCDC, and CCC) and in accordance with applicable existing regulations, such as the CWA or local stream protection ordinances. Project sponsors can arrange for compensatory mitigation subject to approval by the USACE, RWQCB, CDFW, BCDC, and CCC, as applicable.	
Impact 3.5-3: Substantial Interference with the Movement of Any Native	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
Resident or Migratory Fish or Wildlife Species or with Established Native Resident or Migratory Wildlife Corridors It is reasonably foreseeable to expect new or expanded facilities to be located at or near existing landfills or material recovery facilities, or in urban locations zoned for industrial or heavy commercial use, so interference with fish or wildlife movement would not occur. Even if located on the urban/rural edge, development of new facilities associated with the proposed regulation would not occupy sufficient natural landscape to substantially interfere with native resident or migratory wildlife corridors. Therefore, this impact would be less than significant.			
Impact 3.5-4: Conflict with Adopted Local or Regional Conservation Plans It is reasonably foreseeable to expect new or expanded facilities to be located at or near existing landfills or material recovery facilities, or in urban locations zoned for industrial or heavy commercial use, so they	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
would not conflict with local or regional conservation plans and policies. Even if located on the urban/rural edge, development of new facilities associated with the proposed regulation 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.			
3.6 Energy			
Impact 3.6-1: Wasteful, Inefficient, or Unnecessary Consumption of Energy during Project Construction or Operation The proposed regulation would likely result in reasonably foreseeable compliance responses that require the use of fuels and electricity during construction and operation	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
of new or expanded organic waste handling facilities and hauling routes. The efficiency of equipment and vehicles consuming these energy resources is mandated by existing State laws and regulations. Some of the organic waste handling facilities anticipated to be constructed in response to the proposed regulation can produce renewable energy resources that would offset a portion of energy consumption associated imp and support the state in achieving renewable energy generation and alternative fuel goals. For these reasons, this impact would be less than significant.			
Impact 3.6-2: Conflict with or Obstruction of a State Plan for Renewable Energy or Energy Efficiency The new facilities and programs that are anticipated to be needed in response to the proposed regulation may include buildings, equipment, and vehicles that are required to comply with existing State regulations for energy efficiency. The renewable electricity and fuels produced from the operation of facilities that process organic waste	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
pursuant to the proposed regulation would support numerous State policies that mandate a transition to renewable energy. For these reasons, this impact would be less than significant.			
3.7 Geology and Soils			
Impact 3.7-1: Substantial Erosion or Loss of Topsoil Construction activities stemming from implementation of the proposed regulation could involve substantive earthwork activities that could result in soil erosion or the loss of topsoil. However, reasonably foreseeable future projects would be required to adhere to the conditions of the National Pollutant Discharge Elimination System (NPDES) General Construction Permit, including installation of best management practices (BMPs) to control erosion and sedimentation. As a result, this impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Impact 3.7-2: Placement of Organic Water Recovery Facilities in Areas of Expansive or Unstable Soils, or Creation	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
of Instability as a Result of Implementation Implementation of the proposed regulation would create a need for new or expanded organic waste recovery facilities and associated infrastructure. Potential new facilities could be located in a variety of geologic, soil, and slope conditions with varying soil stability risks. However, projects initiated in response to the proposed regulation would be subject to project-level environmental review and would be required to meet CBC conditions related to unstable soils. Therefore, this impact would be less than significant.			
Impact 3.7-3: Potential Substantial Adverse Effects Involving Rupture of a Known Earthquake Fault, Strong Seismic Ground Shaking, or Other Seismic Effects Future projects implemented in response to the proposed regulation could be located in seismically active areas where strong seismic shaking could damage project	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
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.			
Impact 3.7-4: Soils Incapable of Adequately Supporting the Use of Septic Tanks or Alternative Wastewater Disposal Systems Future projects implemented in response to the proposed regulation could be located in rural areas where municipal sewer systems are not available. 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.	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
Impact 3.7-5: 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 future projects implemented in response to the proposed regulation could be located in or near areas with important mineral resources. However, projects implemented in response to the proposed regulation would be required to evaluate potential effects on mineral resources through project-level environmental review. Additionally, local permitting would be completed in accordance with existing statewide protections of important mineral resources. Therefore, this impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Impact 3.7-6: Destruction of a Unique Paleontological Resource or Site Many unique and important fossils have been found in California. Future projects implemented in response to the proposed	PS	**Mitigation Measure 3.7-6: Survey and Redesign or Avoid Significant Paleontological Resources** As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
regulation would require ground disturbance, which could harm or destroy undiscovered paleontological resources. It is likely that many projects would be co-located at existing solid waste-handling facilities or wastewater treatment plants or built on previously disturbed sites. However, individual development projects have the potential to alter or destroy unique paleontological resources. Therefore, this impact would be potentially significant.		LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant impacts on paleontological resources. Mitigation measures to reduce potential impacts on paleontological resources can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval. The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on paleontological resources: • Applicants of projects that require grading or excavation in previously undisturbed areas shall retain a qualified geologist or paleontologist to identify and evaluate site geology relative to the potential for the presence of unique	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		paleontological resources. 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. • All projects shall include the following requirements as a condition of approval: If evidence of any paleontological features or deposits are discovered during construction-related earth-moving activities (e.g., vertebrate, invertebrate, or plant fossils, traces, and/or trackways), all ground-disturbing activity in the area of the discovery shall be halted and the county shall be notified immediately. A qualified paleontologist shall be retained to assess the significance of the find. 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	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		determined to be significant by the qualified paleontologist, they shall work with the project 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.	
3.8 Greenhouse Gas Emissions and Climate Change			
Impact 3.8-1: Conflict with Applicable Plans, Policies, or Regulations of an Agency Adopted for the Purpose of Reducing Emissions of GHGs The proposed regulation would be consistent with applicable plans, policies, and regulations aimed at reducing GHG emissions, including the 2017 Scoping Plan, SLCP Reduction Strategy, and Draft 2030 Natural and Working Lands Climate Change Implementation Plan. The purpose of the proposed regulation is to reduce fugitive methane emissions from landfills through	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
the redirection of organics to organic waste recovery facilities (such as compost and AD facilities), where methane emissions would be reduced through effective techniques or collected as biogas for energy generation and transportation fuel. Additionally, compost product would be applied within the State's agricultural sector, resulting in improved soil health and carbon sequestration potential. This impact would be less than significant.			
Impact 3.8-2: Short-Term Construction-Generated GHG Emissions Implementation of the proposed regulation would result in the construction of new or expanded organic waste recovery facilities to accommodate the increase in organic waste recovery. The construction of such facilities would generate GHG emissions that could exceed applicable local agency thresholds of significance. This impact would be potentially significant.	PS	**Mitigation Measure 3.8-2: Implement All Feasible On- and Off-Site Mitigation Measures to Reduce Greenhouse Gas Emissions to below a Lead Agency–Approved Threshold of Significance** As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to include permit conditions regulating GHG emissions. Lead agencies would evaluate a project's construction emissions against the applicable threshold of significance developed by a lead agency and/or air district. In cases where these	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		thresholds are exceeded, mitigation measures to reduce construction-generated GHG emissions can and should be implemented by local jurisdiction with permitting authority. Site-specific, project impacts and mitigation measures would be identified during a project's local review process. A proposed project would be approved by a local government and/or the applicable air district as conditions of approval. The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on construction-generated GHG emissions. • Project proponents shall require its contractors to restrict the idling of on- and off-road diesel equipment to no more than 5 minutes while the equipment is on-site. • Project proponents of new facilities shall implement waste, disposal, and recycling strategies (i.e., 10 percent	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		recycled content for Tier 1 and 15 percent recycled content for Tier 2) in accordance with the voluntary measures for non-residential land uses contained in Section A5.405 of the 2016 CALGreen Code or in accordance with any update to these requirements in future iterations of the CALGreen Code in place at the time of project construction. • Project proponents of new facilities shall achieve or exceed the enhanced Tier 2 target for nonresidential land uses of recycling or reusing 80 percent of the construction waste as described in Section A5.408 of the 2016 CALGreen Code or in accordance with any update to these requirements in future iterations of the CALGreen Code in place at the time of project construction. • Project proponents shall require all diesel-powered, off-road construction equipment meet EPA's Tier 3 or Tier 4 emissions standards as defined in 40 CFR 1039 and comply with the exhaust emission test procedures and provisions	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		of 40 CFR Parts 1065 and 1068. This measure can also be achieved by using battery-electric off-road equipment as it becomes available. This measure is consistent with Mitigation Measure 3.3-1 in Section 3.3, "Air Quality." • Project proponents shall implement a program that incentivizes construction workers to carpool, and/or use public transit or electric vehicles to commute to and from the project site.	
Impact 3.8-3: Long-Term Operation-Related GHG Emissions Implementation of the proposed regulation could result in increases in statewide and regional VMT associated with the collection of organic waste from targeted generators, the movement of organic material to an organic waste recovery facility, the hauling of edible food from Tier I and Tier II commercial edible food generators to edible food recovery operations or other feeding agencies, and the distribution of finished products (e.g., compost, biogas) to end	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
uses. 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 products, the GHG reductions achieved through implementation of the proposed regulation would be substantially greater than additional travel-generated emissions, so a net reduction in overall GHG emissions would be reasonably anticipated. This impact would be less than significant.			
3.9 Hazards and Hazardous Materials			
Impact 3.9-1: Significant Health Hazard from the Use of Hazardous Materials Construction and operation of new or modified organic waste–handling facilities implemented under the proposed regulation would 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	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
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 later activities under the proposed regulation would comply with these federal and State laws and regulations, this impact would be less than significant.			
Impact 3.9-2: Significant Hazards to the Public or Environment from Disturbance to Known Hazardous Material Sites Soil disturbance caused by construction associated with new or modified organic waste–handling facilities built in response to the proposed regulation 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,"	PS	**Mitigation Measure 3.9-2: Identify and Avoid Known Hazardous Waste Sites during Construction of New or Modified Facilities Built in Response to the Proposed Regulation** As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant impacts related to the exposure of workers, the public, or the	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
many hazardous waste sites are located throughout the state. Facilities implemented under the proposed regulation 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.		environment to hazardous materials. Mitigation measures to reduce potential hazardous materials impacts can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval. The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts from exposure to hazardous materials: • Proponents of new facilities constructed as a result of reasonably foreseeable compliance responses would coordinate with local or State land use agencies to seek entitlements for development. This process would involve the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		body must comply with all applicable regulations as part of approval of a development project. • During the environmental review process for a new or modified organic waste–handling facility project that would require ground-disturbing activities under the proposed regulation, the project proponent would coordinate with the landowner or other entity with jurisdiction (e.g., city or county) to determine whether hazardous materials are known to have been used, stored, or disposed of on the project site. The project proponent would 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 the site of a new or modified organic waste facility is known to contain hazardous waste or is included on the DTSC Cortese List and identified as containing potential soil contamination that has not been cleaned	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		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. If it is determined through coordination with landowners or after review of the Cortese List that no potential or known contamination is located on a project site, the project may proceed as planned. • Before final project design and any earth-disturbing activities, the applicant or agencies responsible would conduct a Phase I Environmental Site Assessment (ESA). The Phase I ESA would 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 organic waste–handling facilities. If no contaminated soil or groundwater is identified or if the Phase I ESA does not	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		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, the applicant or agencies responsible would retain a Registered Environmental Assessor to conduct follow-up sampling to characterize the contamination and to identify any required remediation that shall be conducted consistent with applicable regulations before any earth-disturbing activities. The environmental professional would prepare a report that includes, but would not be limited to, description of activities performed for the assessment, a summary of anticipated contaminants and contaminant concentrations at the proposed construction site, and recommendations for appropriate handling of any	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		contaminated materials during construction. • Project proponents would implement all feasible mitigation identified during the environmental document review to reduce or substantially lessen the potentially significant environmental impacts of the project.	
Impact 3.9-3: Generation of Vectors and Pathogens 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, which are public and environmental health hazards. However, organic waste–handling facilities and operations, including compost and AD facilities, facilities that process green material and wood waste, and edible food recovery programs, are regulated by existing laws and regulations to protect	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
human and environmental health. Therefore, this impact would be less than significant.			
Impact 3.9-4: Potential Hazards Associated with the Release of Hazardous Materials from the Siting of Organic Waste Recovery Facilities within One-Quarter Mile of a School Although new or modified organic waste–handling facilities would most likely be located at existing facilities and would not be located near schools, the specific location of the facilities that would be developed under the proposed regulation is currently unknown. The potential risks related to the use of hazardous materials at facilities near schools would be reduced through compliance with federal and State regulatory requirements, as discussed for Impact 3.9-1, above. Operation of AD facilities would generate biogas, which could pose a fire hazard near schools (see the discussion of Impact 3.15-2 in Section 3.15, "Wildfire"). However, compliance with the California Fire Code and applicable local	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
fire safety codes would substantially reduce the risk of fire associated with siting AD facilities near schools. Operation of organic waste recovery facilities under the proposed regulation would result in reductions in emissions of TACs as compared to existing conditions at landfills. Further, TACs generated by the reasonably foreseeable organic waste recovery facilities 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.			
Impact 3.9-5: Safety Hazard from Siting an Organic Waste–Handling Facility within 5 Miles of an Airport Organic waste–handling facilities would process food materials that could attract increased numbers of scavenging birds to	PS	**Mitigation Measure 3.9-5: Reduce Safety Hazards from Siting an Organic Waste–Handling Facility within 5 Miles of an Airport** As described in Section 1.2, “Purpose of this EIR,” the authority of CalRecycle and	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
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 and AD facilities 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.		LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant impacts related to conflicts with aircraft. Mitigation measures to reduce potential impacts can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval. The following mitigation measure can and should be required by agencies with project approval authority to avoid or minimize impacts related to conflicts with aircraft: • For any compost or AD facility proposed within 5 statute miles of an airport's air operations area, the project proponent shall notify the FAA Regional Airports Division office and the airport operator of the proposal for a new compost or AD facility as early in the process as	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		possible. Such compost or AD facilities with any open air (outdoor) activities must receive an FAA Determination of No Hazard before project approval.	
Impact 3.9-6: Impaired Implementation of or Physical Interference with an Adopted Emergency Response Plan or Emergency Evacuation Plan New or modified organic waste–handling facilities and operations of collection routes would be spread throughout the state. Operation of new or modified organic waste–handling 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 organic waste–handling facilities would be short term and temporary; however, heavy equipment accessing project sites from public roads during construction and installation of biogas pipelines in public rights-of-way has the potential to impair implementation of emergency response and	PS	**Mitigation Measure 3.9-6: Implement Measures during Construction Activities to Avoid Impairment of an Emergency Response Plan or Emergency Evacuation Plan** As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant impacts related to the impaired implementation of emergency response and evacuation plans. Mitigation measures to reduce potential impacts can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
evacuation plans. This impact would be potentially significant.		potentially another permitting agency that can apply conditions of approval. The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts related to impaired implementation of emergency response and evacuation plans: • Proponents of new facilities constructed as a result of reasonably foreseeable compliance responses would coordinate with local or State land use agencies to seek entitlements for development. This process would involve the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must comply with all applicable regulations as part of approval of a development project. • Project proponents would implement all feasible mitigation identified during the environmental review to reduce or substantially lessen the potentially	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		significant impacts from constructing the project related to impairment of an emergency response plan or emergency evacuation plan. • The contractor(s) would obtain any necessary road encroachment permits before pipelines are installed within the existing roadway right-of-way. As part of the road encroachment permit process, the contractor(s) would submit a traffic safety/traffic management plan (for work in the public right-of-way) to the agencies having jurisdiction over the affected roads. The plan would likely include, but would not necessarily be limited to, the following elements. ▪ Develop circulation and detour plans to minimize impacts on local street circulation. Use haul routes that minimize truck traffic on local roadways to the extent possible. Use flaggers and/or signage to guide vehicles through and/or around the construction zone.	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		■ To the extent feasible, and as needed to avoid adverse impacts on traffic flow, schedule truck trips outside of peak morning and evening commute hours. ■ Limit lane closures during peak traffic hours to the extent possible. Restore roads and streets to normal operation by covering trenches with steel plates outside of allowed working hours or when work is not in progress. ■ Limit, where possible, pipeline construction work zones to a width that, at a minimum, maintains alternating one-way traffic flow past the construction zone. ■ Coordinate with facility owners or administrators of sensitive land uses, such as police and fire stations, hospitals, and schools. Provide advance notification to the facility owner or operator of the timing, location, and duration of construction activities.	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		■ To the maximum extent feasible, maintain access to private driveways located within construction zones. ■ Coordinate with the local public transit providers so that bus routes or bus stops in work zones can be temporarily relocated as the service provider deems necessary.	
3.10 Hydrology and Water Quality			
Impact 3.10-1: Violation of Any Water Quality Standards or Waste Discharge Requirements or Conflict with the Implementation of a Water Management Plan through Construction of New Organic Waste Recovery Facilities The proposed regulation would stimulate the development of new organic waste recovery facilities. Site grading and construction of these facilities would create ground disturbance and potentially accelerate soil erosion. Soils exposed during rain events could generate sediment that could be carried in runoff into storm drains and surface waters, adversely	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
affecting water quality. However, the existing regulatory environment includes robust protections for water quality during construction activities. 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.			
Impact 3.10-2: Violation of Any Water Quality Standards or Waste Discharge Requirements or Conflict with the Implementation of a Water Management Plan through Operation of New Organic Waste Recovery Facilities The composting process releases water that may contain nutrients, metals, salts, pathogens, and oxygen-reducing compounds. 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	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
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. Because these regulatory protections are in place, this impact would be less than significant.			
Impact 3.10-3: Violation of Any Water Quality Standards or Waste Discharge Requirements or Conflict with the Implementation of a Water Management Plan through Land Application of Uncomposted Organic Materials The proposed regulation limits the volume of organic waste that can be sent to landfills, which could result in increased land application of materials that are difficult to compost. When properly managed, land application can be accomplished without adversely affecting water quality. However, illegal land application has been documented as a threat to water quality and could increase with implementation of the proposed regulation. Because the proposed	PS	**Mitigation Measure 3.10-3: Develop Land Application Enforcement Strategy** Cal Recycle shall require Local Enforcement Agencies (LEAs) to develop an enforcement strategy for identification of illegal land application sites. This strategy includes regulatory requirements that specify that operators that send material for land application keep records of sites where compostable material is land applied, and requirements for LEAs to review the records, inspect a statistically significant number of sites, and inform the appropriate LEA of land application occurring within their jurisdiction. LEAs enforcement strategies may additionally include encouragement of secondary processing to	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
regulation could indirectly result in an increase in illegal land application of organic wastes, this impact would be potentially significant.		reduce the volume of compost overs, community outreach regarding the potential adverse effects of illegal land application, identification of sites (such as remote canyons) that may be more at risk for illegal dumping of organic wastes, development of avenues of anonymous public communication, and coordination with adjacent LEAs and RWQCB enforcement staff.	
Impact 3.10-4: 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 recovery 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,	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
must be accounted for in groundwater sustainability plans prepared in compliance with SGMA. Therefore, due to compliance with SGMA, the proposed regulation would not be expected to substantially affect recharge or cause overdraft conditions and this impact would be less than significant.			
Impact 3.10-5: Substantial Alteration of the Existing Drainage Pattern of the Site or Area Organic waste recovery 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 organic waste recovery 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 and site-specific environmental review. Because these	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
existing regulatory protections are in place, this impact would be less than significant.			
Impact 3.10-6: Release of Pollutants as a Result of Project Inundation Stockpiles of organic wastes and detention ponds placed in floodplains or other areas are subject to inundation. Organic wastes and water from the detention ponds could be carried with floodwaters, resulting in the release of nutrients and pollutants into state waters. The Composting WDRs contain inundation prevention requirements for composting facilities, and any operations located within a 100-year floodplain may be subject to additional local land use restrictions and permits. Additionally, all projects implemented in response to the proposed regulation would be subject to project-level environmental review. Therefore, this impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
3.11 Land Use and Planning			
Impact 3.11-1: Significant Environmental Impact from a Conflict with a Land Use	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
Plan, Policy, or Regulation Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect The proposed regulation would result in development of facilities on lands owned and managed by various entities, including private landowners, cities, counties, and state agencies. In general, facilities 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 implement facilities 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.			

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
3.12 Noise			
Impact 3.12-1: Short-Term Construction-Related Noise Effects Implementation of the proposed regulation would result in the construction of new or expanded waste recovery facilities and related infrastructure that would generate temporary construction-related noise. Based on noise emissions levels from typical types of equipment used during construction and accounting for typical usage factors of individual pieces of equipment activities and attenuation, on-site construction could result in construction noise that exceeds noise standards established in local general plans and noise ordinances or that are substantially greater than the ambient noise environment. Thus, implementation of reasonably foreseeable compliance responses could result in the generation of short-term construction noise in excess of applicable standards or result in a substantial increase in ambient noise levels at nearby sensitive receptors, and exposure	PS	**Mitigation Measure 3.12-1: Implement Noise-Reduction Measures during Project Construction** As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant construction-related noise. Mitigation measures to reduce construction-related noise impacts can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval. The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts related to construction noise:	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
to excessive vibration levels. This impact would be potentially significant.		• Proponents of new facilities constructed under the reasonably foreseeable compliance responses would coordinate with local or State land use agencies to seek entitlements for development including the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must comply with applicable regulations and would approve the project for development. • Based on the results of project level environmental review, project proponents would implement all feasible mitigation identified in the environmental document to reduce or substantially lessen the environmental impacts of the project The definition of actions required to mitigate potentially significant noise impacts may include the following; however, any mitigation specifically required for a new or modified facility would be determined by the local lead agency.	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		• Ensure noise-generating construction activities (including truck deliveries, pile driving, and blasting) are limited to the least noise-sensitive times of day (e.g., weekdays during the daytime hours) for projects near sensitive receptors. • Consider use of noise barriers, such as berms, to limit ambient noise at property lines, especially where sensitive receptors may be present. • Ensure all project equipment has sound-control devices no less effective than those provided on the original equipment. • All construction equipment used would be adequately muffled and maintained. • Consider use of battery-powered forklifts and other facility vehicles. • Ensure all stationary construction equipment (i.e., compressors and generators) is located as far as practicable from nearby sensitive receptors or shielded.	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		• Properly maintain mufflers, brakes and all loose items on construction and operation related vehicles to minimize noise and address operational safety issues. Keep truck operations to the quietest operating speeds. Advise about downshifting and vehicle operations in sensitive communities to keep truck noise to a minimum. • Use noise controls on standard construction equipment; shield impact tools. • Consider use of flashing lights instead of audible back-up alarms on mobile equipment. • Install mufflers on air coolers and exhaust stacks of all diesel and gas-driven engines. • Equip all emergency pressure relief valves and steam blow-down lines with silencers to limit noise levels. • Contain facilities within buildings or other types of effective noise enclosures.	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		• Employ engineering controls, including sound-insulated equipment and control rooms, to reduce the average noise level in normal work areas.	
Impact 3.12-2: Long-Term Operation Effects on Noise Implementation of the proposed regulation would result in the operation of new or expanded waste recovery facilities and related infrastructure that would generate on-going 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, implementation of reasonably foreseeable compliance responses could result in the generation of long-term operational noise in excess of	PS	**Mitigation Measure 3.12-2: Implement Noise-Reduction Measures during Project Operation** CalRecycle shall require LEAs to incorporate the following conditions into permits, as appropriate, based on the facts at the proposed facility site, before approving a solid waste facility permit or registration permit for organic waste recovery projects developed to comply with the proposed regulation. For individual projects not under the jurisdiction of LEAs, site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
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.		Recognized practices that can and should be required to avoid and/or minimize noise include: • All powered equipment shall be used and maintained according to manufacturer's specifications. • Public notice of activities shall be provided to nearby noise-sensitive receptors of potential noise-generating activities. • All motorized equipment shall be shut down when not in use. • Idling of equipment or trucks shall be limited to 5 minutes. • All heavy equipment and equipment operation areas shall be located as far as possible from nearby noise-sensitive land uses (e.g., residential land uses, schools, hospitals, places of worship, recreation resources). • To achieve an interior noise level less than applicable noise standards, the installation of double pane windows and	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		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.	
Impact 3.12-3: Expose People Residing or Working Within Two 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 the equivalent) to discourage incompatible land uses within the vicinity of the airport. It is possible that with implementation of the proposed regulation that new or expanded organic waste recovery facilities could be located within the vicinity (e.g., within 2 miles) of a public or private airport. Implementation of the proposed regulation would not result in the development of new residential land uses that could be exposed to excessive noise. The operation of new or	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
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. However, 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.			
3.13 Transportation			
Impact 3.13-1: Construction-Related Traffic Impacts Reasonably foreseeable compliance responses associated with the proposed regulation include development of new and expanded facilities to process organic waste, including compost, anaerobic digestion, and chip and grind facilities, among others. 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	PS	**Mitigation Measure 3.13-1: Prepare a Transportation Construction Plan** As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant construction-related transportation impacts. Mitigation measures to reduce construction-related transportation impacts can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
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.		review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval. The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize construction traffic impacts: Prepare a transportation construction plan for all phases of construction. • 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.	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		• 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. • 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,	

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
		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.	
Impact 3.13-2: Substantial Increase in Hazards from a Geometric Design Feature (e.g., Sharp Curves or Dangerous Intersection) or Incompatible Uses Development of new or expanded organic waste recovery facilities 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 process, 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	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
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.			
Impact 3.13-3: Inadequate Emergency Access Development of new or expanded facilities associated with the proposed regulation could impede on-site emergency access or interrupt the flow of emergency vehicles on nearby roadways if not regulated properly. All future development would be regulated through the local jurisdictions' discretionary review process, which would require consistency 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.	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
Impact 3.13-4: Reasonably Anticipated Increase in VMT Under the proposed regulation, the amount of organic waste delivered to landfills would be reduced through changes to the way food waste and other organic materials are collected and handled. Organic waste would be transported to a qualifying recovery facility, such as a food recovery center, compostable material handling facility, AD facility, a recycling center, or a biomass conversion facility. In some cases, material produced at recovery facilities would be delivered to customers for use as a soil amendment or for direct land application after chipping and grinding. A greater quantity of edible food would also be collected and distributed to people rather than being disposed in a landfill. While collection modifications would not substantially change the amount of travel needed, the post-recovery activities would be reasonably expected to increase vehicle trips within the state and, therefore, vehicle miles traveled (VMT). There is uncertainty in	PS	No feasible mitigation is available.	PSU

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
predicting the location of new and expanded organic waste recovery facilities and the locations where rescued food and finished compost would be distributed. Thus, recognizing the expectation of increased travel and uncertainty in future predictions, to meet CEQA's mandate of good-faith disclosure and to not risk understating potential future VMT impacts in light of the uncertainties, this impact is classified as potentially significant.			
3.14 Utilities and Service Systems			
Impact 3.14-1: Increased Demand for Water Supplies The reasonably foreseeable compliance responses associated with SB 1383 include construction of new and expanded organic waste recovery facilities, including composting, anaerobic digestion, and chip and grind facilities, among others. New water supplies may be necessary for the processing of materials, such as during the anaerobic digestion process or to retain moisture in compost piles, for domestic use,	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
and fire suppression. New water supplies would be obtained through local water service providers, during project planning, to ensure that adequate supply is available to meet the required demand under all water year conditions. Thus, because sufficiency of water supply and adequacy would need to be demonstrated prior to ground-breaking activities, this impact would be less than significant.			
Impact 3.14-2: Increased Demand for Wastewater Treatment The reasonably foreseeable compliance responses associated with SB 1383 include construction of new facilities, including composting, anaerobic digestion, and chip and grind facilities, among others. Wastewater demands would be associated with employee use and production of digestate at anaerobic digestion facilities. As part of the project approval process, the project proponent would need to receive assurance that wastewater treatment capacity is available to meet project demands or obtain necessary permits for	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
alternate disposal methods from the appropriate federal or State agency. Thus, because sufficient availability of wastewater resources would be determined before the start of construction activities, impacts would be less than significant.			
Impact 3.14-3: Expansion of Existing or Construction of New Water, Wastewater Treatment, Stormwater Drainage, Electric Power, Natural Gas, or Telecommunications Facilities The development of new or expansion of existing facilities related to implementation of SB 1383 could result in the need for expanded infrastructure related to water, wastewater treatment, stormwater drainage, electric power, natural gas, and/or telecommunications facilities. It is reasonable to assume that new facilities would be placed in areas where utility infrastructure is available, such as adjacent to other developed uses and industrial areas. Thus, because utility connections would be expected to be readily available and substantial construction activities would	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
be minimal and entail making minor connections to existing infrastructure, this impact would be less than significant.			
3.15 Wildfire			
Impact 3.15-1: Impaired Wildfire Emergency Response Plan or Evacuation Plan The proposed regulation would result in the development of organic waste recovery facilities either at or near existing waste management facilities or wastewater treatment plants, or in areas zoned for industrial or other appropriate use. In the event of a wildfire, such facilities would be addressed by the appropriate response agency and by 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; therefore, they would not negatively affect emergency response or evacuation route capacity. Therefore, this impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
Impact 3.15-2: Substantially Worsened Wildfire Risk Related to Infrastructure Development The proposed regulation would involve development of organic waste recovery facilities and associated infrastructure. Such infrastructure developments, including the facilities themselves, could increase the risk of wildfire ignitions. For example, electrical malfunctions could ignite proximal vegetation, thereby starting a wildland fire. However, development standards, safety inspections, and regulatory oversight have become increasingly stringent in recent years. These factors substantially reduce the risk of wildfire ignitions caused by infrastructure, especially electrical infrastructure. Compost and mulch operations can pose a unique fire risk related to the spontaneous combustion of material. 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	LTS	No mitigation is required for this impact.	LTS

Impacts	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LTS = less than significant, PS = potentially significant, S = significant, PSU = potentially significant and unavoidable			
reduce these risks. Additionally, developments associated with the proposed regulation would occur only in areas already zoned for development and where development already exists and therefore would not introduce ignition sources in new areas. Consequently, this impact would be less than significant.			
Impact 3.15-3: Substantial Risks Related to Postfire Flooding or Landslides Wildfire creates conditions that increase the risk of postfire flooding and mass wasting events. However, the proposed regulation would result in a limited number of new structures and personnel to staff them, which would limit possible exposure during such events. Additionally, new infrastructure, including facilities, 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.	LTS	No mitigation is required for this impact.	LTS

1. Introduction

1.1. Background

Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006 (AB 32, Chapter 488, Statutes of 2006), declares that global warming poses a serious threat to the economic well-being, public health, natural resources, and environment of California and charges the California Air Resources Board (CARB) with "monitoring and regulating sources of emissions of greenhouse gases that cause global warming in order to reduce emissions of greenhouse gases (GHGs)." AB 32 provided initial direction on creating a comprehensive multi-year program to limit California's GHG emissions to 1990 levels by 2020 and initiated the transformations required to achieve the state's long-range climate objectives. Since then, Senate Bill (SB) 32 (Pavley, Chapter 249, Statutes of 2016) was enacted, which set a statewide GHG emission target of 40 percent below the 1990 level by 2030.

One specific requirement of AB 32 is to prepare a "scoping plan" for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020. CARB has prepared and adopted the Scoping Plan with multiple updates. Developing a Short-Lived Climate Pollutant (SLCP) Reduction Strategy is identified in the First Update to the Climate Change Scoping Plan as one of the recommended actions to achieve required GHG emission reductions. The SLCP Reduction Strategy addresses black carbon, methane, and hydrofluorocarbons, which are powerful climate forcers and harmful air pollutants with an abbreviated atmospheric lifespan compared to other known climate pollutants (e.g., carbon dioxide). GHG reductions are important to achieving the GHG targets called for by AB 32 and SB 32.

Senate Bill 605 (Lara, Chapter 523, Statutes of 2014) directed CARB to develop a comprehensive SLCP Reduction Strategy, in coordination with other state agencies and local air quality management and air pollution control districts to reduce emissions of GHGs. SB 1383 (Lara, Chapter 395, Statutes of 2016) directed CARB to approve and begin implementing the plan by January 1, 2018, and set statewide 2030 emission reduction targets for methane, hydrofluorocarbons (HFCs), and anthropogenic black carbon. The SLCP Reduction Strategy, approved in March 2017, includes directives for addressing landfill methane emissions via reductions in organic material disposal. The SLCP: Organic Waste Reductions Regulation (proposed regulation) implements these directives.

As required by SB 1383, the California Department of Resources Recycling and Recovery (CalRecycle), in consultation with CARB, is charged with developing regulations to reduce disposal of organic waste by 50 percent of 2014 levels by 2020 and 75 percent by 2025. In addition, at least 20 percent of the edible food in the organic waste stream must be recovered to feed people by 2025. Materials that cannot be effectively recovered for human consumption would be directed to organic waste recovery facilities to make useful products, including compost, fertilizer, fuel, or energy. These facilities may be developed at existing landfills, other waste management sites,

or at new stand-alone sites. These regulations must take effect on or after January 1, 2022.

1.2. Purpose of This EIR

This document is a program environmental impact report (EIR), prepared in accordance with State California Environmental Quality Act (CEQA) Guidelines Section 15168. A program EIR may be prepared on a series of actions that can be characterized as one large project and that are related to, among other things, the issuance of general criteria to govern the conduct of a continuing program or to individual activities carried out under the same authorizing statutory or regulatory authority, and having generally similar environmental effects that can be mitigated in similar ways.

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 noted in Section 15168(c) of the State CEQA Guidelines, later proposed activities that are consistent with the proposed regulation would be examined in light of the information in this EIR to determine whether an additional environmental document must be prepared. 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 and no new or substantially more severe significant impacts would occur and no new mitigation measures would be required, no additional CEQA documentation would be needed. Under this circumstance, a notice of determination would be filed that indicates that this EIR adequately covers the environmental effects of the proposed project. Under this CEQA compliance approach, the lead agency must adopt all feasible mitigation measures from this EIR to address significant or potentially significant effects on the environment. If the lead agency on a future and related project finds that it is not entirely within the scope of the proposed regulation, additional CEQA analysis, including preparation of a project-specific mitigated negative declaration or EIR may be required.

It is important within the context of this EIR to understand the extent of the relevant authority of CalRecycle. It provides technical assistance to Local Enforcement Agencies (LEA) that enforce state solid waste law in local jurisdictions pursuant to CalRecycle certification. CalRecycle also promulgates the state regulations governing the issuance of solid waste facility permits by LEAs, with the concurrence of 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 the enforcement of state minimum standards for solid waste handling, transfer, composting, transformation and disposal in accordance with Division 30 of the Public Resources Code (PRC) and associated regulations. The conditions that may be enforced through such permits are restricted in scope. For example, PRC Sections 43020 and 43021 prohibit the enforcement of permit conditions related to air quality or water quality. In addition, PRC Section 43101 expands such restrictions to prohibit CalRecycle authority from overlapping with the authority of any other state agency, which further curtails the types of permit conditions that may be enforced. Under PRC Section 44012, CalRecycle and LEAs are limited to

imposing operational conditions on solid waste facilities rather than pre-operational conditions, such as those that might govern facility construction. Furthermore, operational conditions must be limited to those that protect public health, safety, and the environment within the authority of CalRecycle and LEAs to enforce state minimum standards. As such, solid waste facility permit operating conditions may not extend to regulating issues such as tribal cultural resources.

CalRecycle does not have general land use authority to approve facilities or other structures that are developed in response to adoption of the proposed regulation. Such authority is vested, instead, with local jurisdictions under their land use powers (such as police power) and exercised through the issuance of local entitlements such as conditional use permits. The conditions that are curtailed by law from being included in state solid waste facility permits may be more appropriately included in local entitlements. Like any proposed development project, organic waste and food waste recovery facilities would be reviewed individually by local jurisdictions, in response to applications submitted by project proponents The goal of this Draft EIR is to consider the types of potential environmental effects of the reasonably foreseeable compliance responses that would be anticipated to meet the requirements included in the proposed SB 1383 regulation.

1.3. Scope of This Draft EIR

The degree of specificity required in a CEQA document corresponds to the degree of specificity inherent in the underlying activity it evaluates. An environmental analysis for broad programs cannot be as detailed as for specific projects (State CEQA Guidelines Section 15146). For example, consideration of a site-specific development with detailed site design would allow for greater detail than a community-wide general plan, because construction-related effects can be predicted with a greater degree of accuracy (State CEQA Guidelines Section 15146[a]). Because this analysis addresses a broad regulatory program, a general level of detail is appropriate. However, this Draft EIR comprehensively evaluates significant adverse impacts and beneficial impacts of the reasonably foreseeable compliance responses that could result from implementation of the proposed regulation and contains as much information about those impacts as is currently available, without being speculative.

The scope of analysis in this Draft EIR is intended to help focus public review and comments on the proposed regulation, and ultimately to inform CalRecycle of its environmental benefits and significant adverse impacts. This analysis specifically focuses on potentially significant adverse and beneficial impacts on the physical environment resulting from reasonably foreseeable compliance responses intended to implement the requirements of the proposed regulation.

The general location of existing landfills, organic waste recovery facilities, and edible food recovery facilities are known within California; however, decisions by project proponents regarding the choice of compliance options and the precise location of new or modified facilities related to implementation of the proposed regulation cannot be known at this time. Furthermore, due to local planning, political (i.e., the willingness of jurisdictions to address local opposition to the siting of new or expanded facilities), and

economic influences, attempting to predict project approvals about the specific location and design of facilities and operations undertaken in response to the proposed regulation would be speculative and infeasible at this stage. As a result, there is some inherent uncertainty in the degree of mitigation that would ultimately need to be implemented to reduce any potentially significant impacts identified in this Draft EIR. Consequently, a conservative approach is taken when considering post-mitigation significance conclusions because there is a risk that feasible mitigation may not be implemented by the agency with authority to do so or the mitigation may not be sufficient. Specific actions proposed to implement the regulation would undergo project-level environmental review as required by the land use agency with jurisdiction and the LEA when a solid waste facility permit is needed. It is expected that many individual development projects would be able to feasibly avoid or mitigate potentially significant impacts to a less-than-significant level.

1.4. Environmental Review Process

1.4.1. Scoping

"Scoping" refers to the process used to determine the focus and content of an EIR. Scoping solicits input from members of the public and regulatory agencies on the potential topics to be addressed in an EIR, range of alternatives to be considered, and possible mitigation measures. Scoping is also helpful in establishing methods of assessment and in selecting the environmental impacts to be considered in detail.

The Notice of Preparation (NOP) of the Draft EIR initiates scoping. It was circulated on December 11, 2018. A scoping meeting was held on Tuesday, January 22, 2019; however, because of technical difficulties the webcast was not available for a portion of the meeting and online participation was not fully available. To provide full access to this process, a second scoping meeting was held on January 31, 2019. CalRecycle staff accepted comments online and in person during the more than 45-day public scoping period. The NOP and comments submitted on the scope of the Draft EIR may be accessed at CalRecycle's offices or by contacting Marcus Santillano at (916) 341-6328 or the email address below.

1.4.2. Public Review of This Draft EIR

A notice of the availability of this Draft EIR is being circulated to local, State, and federal agencies and to interested organizations and individuals who may wish to review and comment on the document. Its publication marks the beginning of a 45-day public review period. Written comments or questions concerning this Draft EIR should be directed to the name and address listed below:

Mail: CalRecycle
Attn: Marcus Santillano
P.O. Box 4025
1001 I Street
Sacramento, CA 95812-4025

Email: slcp.organics@CalRecycle.ca.gov

This Draft EIR is available for review online at:
https://www.calrecycle.ca.gov/Laws/Rulemaking/SLCP/

It can also be reviewed in person, along with all documents cited in the Draft EIR, on any business day between 8:00 a.m. and 4:00 p.m. at CalRecycle's offices at 1001 I Street in Sacramento. Please contact Marcus Santillano by email at the address above if you would like to schedule review of the document in person.

1.4.3. Final EIR, Findings, Mitigation Monitoring and Reporting Program, and Approval of the Proposed Regulation

Written and oral comments received in response to this Draft EIR will be addressed in a responses to comments document as part of the Final EIR. The responses to comments document will include written responses to substantive issues raised during the Draft EIR review period.

A mitigation monitoring and reporting program (MMRP) will also be prepared and included with the Final EIR. CEQA requires lead agencies to "adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted to mitigate or avoid significant effects on the environment" (CEQA Statutes Section 21002).

If significant impacts identified in the EIR cannot be mitigated, a statement of overriding considerations must also be prepared (State CEQA Guidelines Section 15093[c]).

Upon completion and review of the Final EIR, CalRecycle staff will make recommendations to the Director regarding the completeness of the EIR and the merits of the proposed regulation. The Director will then consider staff's recommendations and public and other agency comments and decide whether to certify the EIR as being prepared in accordance with CEQA, adopt the MMRP and CEQA findings, and approve the proposed regulation for processing through the Office of Administrative Law's rulemaking procedure.

1.5. Terminology Used in This Draft EIR

This Draft EIR uses the following terminology to describe environmental impacts of the proposed regulation:

- **Thresholds of significance.** Thresholds of significance are used by the lead agency to determine at what level an impact would be considered significant. Thresholds of Significance used in this Draft EIR are based on criteria set forth in the State CEQA Guidelines (or can be discerned from the State CEQA Guidelines); factual or scientific information; and regulatory standards of local, State, and federal agencies.
- **No impact.** No impact is declared if, based on the current environmental setting, the stated impact would not occur (no mitigation required).
- **Less-than-significant impact.** An impact of the proposed regulation is considered less than significant when it does not reach the standard of significance and would

therefore cause no substantial adverse change in the environmental setting (no mitigation required). An impact may also be considered less than significant if the adoption of mitigation measures would avoid the impact or reduce it below a level of significance (mitigation required).

- **Potentially significant or significant impact.** An impact of the proposed regulation is considered significant if it would be a substantial adverse change in the physical conditions of the environment. A potentially significant impact is one where there is a degree of uncertainty but an impact would likely cause a substantial change in the physical conditions of the environment. For the purposes of CEQA, potentially significant and significant impacts are treated the same in the environmental review process. Potentially significant and significant impacts are identified by the evaluation of effects in the context of specified significance criteria. Mitigation measures or alternatives are identified to reduce these impacts on the environment.
- **Potentially significant and unavoidable impact.** An impact of the proposed regulation is considered significant and unavoidable if a substantial adverse change in the environment cannot be avoided or mitigated to a less-than-significant level if the proposed regulation is implemented.
- **Significant cumulative impact.** A cumulative impact results from the collective impacts of related past, present, and reasonably foreseeable future projects. Significant cumulative impacts may result even where individual impacts are minor. This Draft EIR analyzes whether proposed regulation would make a considerable contribution to any significant cumulative impacts.

This Draft EIR also identifies mitigation measures that are intended to lessen the impacts of the proposed regulation. As described in State CEQA Guidelines Section 15370, mitigation includes:

- avoiding the impact altogether by not taking a certain action or parts of an action;
- minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- rectifying the impact by repairing, rehabilitating, or restoring the impacted environment;
- reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
- compensating for the impact by replacing or providing substitute resources or environments.

1.6. Organization of This EIR

As described below, this Draft EIR consists of an executive summary and eight chapters:

- **"Executive Summary."** The executive summary includes a brief description of the proposed regulation, a description of issues of concern and alternatives, and a summary of environmental impacts.
- **Chapter 1, "Introduction."** This chapter describes background information about the proposed regulation, the purpose of the Draft EIR, the environmental review process, terminology used in the Draft EIR, and the organization of the Draft EIR.
- **Chapter 2, "Project Description."** This chapter summarizes the proposed regulation, implementation assumptions, identifies project objectives, and a range of reasonably foreseeable compliance responses expected in response to implementation of the proposed regulation.
- **Chapter 3, "Environmental Impacts and Mitigation Measures."** This chapter presents the analysis of environmental impacts and describes environmental issues dismissed from further detailed analysis in this Draft EIR. Each section of this chapter addresses a particular topic and describes the existing environmental and regulatory setting as it relates to that topic, discusses environmental impacts associated with implementation of the proposed regulation that relate to that topic, and identifies mitigation measures for each significant (or potentially significant) impact.
- **Chapter 4, "Cumulative."** This chapter describes the cumulative setting and discusses the cumulative effects for each of the environmental resource topics in Chapter 3.
- **Chapter 5, "Alternatives."** This chapter includes a discussion of feasible alternatives to the proposed regulation, as well as alternatives evaluated but rejected from further consideration.
- **Chapter 6, "Other CEQA Considerations."** This chapter discusses significant irreversible changes, significant unavoidable impacts, and the potential for the proposed regulation to induce growth and development.
- **Chapter 7, "Report Preparers."** This chapter provides the names of the Draft EIR authors and consultants.
- **Chapter 8, "References."** This chapter provides a list of printed references and persons consulted during the preparation of this Draft EIR.

This page intentionally left blank.

2. Project Description

Implementation of SB 1383 (Lara, Chapter 395, Statutes of 2016) and the Short-Lived Climate Pollutant (SLCP) Reduction Strategy adopted by CARB is an integral part of the State's 2017 Climate Change Scoping Plan. The SLCP Reduction Strategy requires immediate reductions of the most potent GHGs, and is expected to provide 35 percent of the GHG emission reductions needed to meet the State's 2030 targets (as established in SB 32, Pavley, Chapter 249, Statutes of 2016).

As it pertains to CalRecycle, SB 1383 establishes targets to achieve a 50 percent reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020 and a 75 percent reduction by 2025. The law requires CalRecycle to adopt regulations designed to achieve the organic waste disposal reduction targets. The law also directs CalRecycle to include provisions in the regulations designed to achieve a target that not less than 20 percent of the amount of edible food currently disposed of is recovered for human consumption by 2025.

The success of the SLCP Reduction Strategy relies on a portfolio of policies and measures across various sectors of the economy, and includes reducing organic waste disposal and increasing edible food recovery accomplished through implementation of SB 1383. Reducing the amount of organic waste disposed of in landfills prevents increases in the atmospheric release of fugitive methane emissions associated with the anaerobic breakdown of organic waste. Achieving the statutory mandates is a challenge that demands a collective response by many entities (including the State, jurisdictions, haulers, recyclers, businesses, consumers, and residents) along with substantial capital investments to expand the State's edible food recovery and organic waste recovery infrastructure.

2.1. Overview of the Proposed Regulation

The proposed regulation directs actions to achieve the statewide organic waste disposal reduction and edible food recovery targets. CalRecycle, in consultation with CARB, has developed a regulatory approach that requires jurisdictions and other regulated entities to implement a suite of programs to achieve the statute's statewide mandates. The proposed regulation includes provisions related to the following types of activities:

- collection, with a focus on mandatory source-separated collection of organic waste;
- edible food recovery, with a focus on commercial edible food generators, such as wholesale food vendors, supermarkets, grocery stores, and restaurants with 250 or more seats or a total facility size equal to or greater than 5,000 square feet;
- recovery standards at facilities processing organic waste and methods for reducing contamination and the presence of organic waste in disposal streams;
- infrastructure planning, with a focus on regional coordination to plan for future organic waste recovery capacity and edible food recovery operations;

- procurement at the local level of compost; renewable gas used for fuel for transportation, electricity, heating applications, or pipeline injection; electricity from biomass conversion; and recyclable paper products;
- reporting requirements, which are built on existing systems for reporting to CalRecycle; and
- enforcement, with the primary requirements for mandatory enforcement being placed at the local level but with CalRecycle also having an expanded enforcement role.

The proposed regulation applies to approximately 540 jurisdictions in California; millions of households; thousands of businesses; hundreds of haulers and food recovery organizations; hundreds of material recovery facilities (MRFs), processors, recyclers, and landfills; dozens of local government environmental enforcement agencies; and all schools, federal agencies, and State agencies. The proposed regulation broadly defines organic waste as follows (Section 18982[a][46]):

> Organic waste includes solid waste containing material originating from living organisms and their metabolic waste products, including but not limited to food, green material (i.e., yard trimmings and yard waste), landscape and pruning waste, organic textiles and carpets, lumber, wood, paper products, printing and white paper, manure, biosolids and sludges (solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works), and digestate (solid, semi-solid, or liquid residue produced in digesters).

Organic wastes make up approximately 67 percent of the total waste stream (CalRecycle 2015, 2019a). This total includes organic waste currently sent to landfills for uses considered “diversion” or “beneficial reuse” under previous statutes. These activities include alternative daily cover (ADC), alternative intermediate cover (AIC), and other beneficial reuse (material used for buttressing, fill, or other uses). ADC is material other than earthen material (e.g., processed green material, processed construction and demolition waste, or sludge) placed on the surface of an active face of a municipal solid waste (MSW) landfill at the end of each operating day to control vectors, fires, odors, blowing litter, and scavenging. Federal regulations require landfill operators to use 6 inches of earth material as daily cover unless other materials are allowed as alternatives. AIC is material, other than 12 inches of earthen material, placed on the surface of a landfill where no additional MSW will be placed within 180 days.

Table 2-1 shows that an estimated 86 percent of the organic waste that is projected to be disposed of in 2025 can be redirected from landfills using existing/known organic waste recovery technologies. Table 2-1 also shows the broad material categories and quantities of organic waste that can be redirected from landfills; it also shows that food, paper, and green materials compose an estimated 65 percent of the recoverable organic waste stream.

Table 2-1 Primary Components of Organic Waste Stream

Material Disposition	Material Type	Projected 2025 Tons	Percentage of Waste Stream
Potentially Recoverable Material (86.1%)	Food	7,519,160	24.7%
	Paper	6,814,507	22.3%
	Green Material/Other Organic	5,546,754	18.2%
	Wood	2,890,556	9.5%
	Biosolids/Sludge	830,106	2.7%
	Carpet and Textiles	2,427,306	8.0%
	Manure	235,086	0.8%
Non-Recoverable Material (13.9%)	Organic Waste to be Landfilled	4,237,963	13.9%
	Total Statewide Organic Waste in Waste Stream	**30,501,438**	**100.0%**

Sources: CalRecycle 2015, 2019a, adapted by Ascent Environmental in 2019

2.2. Project Objectives

The major implementation objectives of the proposed regulation are as follows:

1. Reduce the level of statewide disposal of organic waste to 50 percent of the 2014 levels by 2020 and 75 percent by 2025.
2. By 2025, recover 20 percent of the amount of edible food currently disposed of so it can be used for human consumption.

Achieving these targets is essential to achieving the GHG emission reductions identified in the SLCP Reduction Strategy, as well as the State's larger 2030 climate change goals.

2.3. Summary of the Proposed Regulation Changes

The proposal would add new and amended regulations in Titles 14 and 27 of the California Code of Regulations (CCR). The notable changes that would occur with implementation of the proposed regulation are summarized below.

New Chapter 12 – Short-lived Climate Pollutants (14 CCR Sections 18981 et seq.)

The proposed regulation would add a new Chapter 12 to Title 14, Division 7; it would consist of 17 articles. The key regulatory requirements of each article are as follows:

- General Provisions

  The introductory provisions of the proposed regulation include a requirement for jurisdictions to adopt ordinances or similarly enforceable mechanisms to

implement the proposed regulation at the local level. In addition, jurisdictions are permitted to designate a public or private entity to fulfill certain responsibilities under the proposed regulation subject to conditions.

- Article 1. Definitions

  Article 1 contains several new definitions, including references to existing definitions. Important new definitions include those for “edible food,” “food recovery organization,” “high diversion facility,” “organic waste,” “prohibited container contaminants,” and “source-separated organic waste.” The proposed definitions contained in Article 1 are necessary to govern the provisions of Chapter 12.

- Article 2. Landfill Disposal and Reductions in Landfill Disposal

  Article 2 of the proposed regulation distinguishes what constitutes landfill disposal or recovery for the purposes of organic waste handling. Organic waste disposal includes final disposition at a landfill and organic waste used at a landfill as ADC or AIC.

  Organic waste recovery includes organic waste not sent for landfill disposal, but instead, sent to recovery activities, such as recycling centers, compostable material handling facilities or operations, anaerobic digestion (AD) facilities (also known as in-vessel digesters) or operations, or other operations or facilities with processes that reduce GHGs, in accordance with the proposed regulation.

- Article 3. Organic Waste Collection Services

  Article 3 specifies minimum standards for organic waste collection services provided by jurisdictions, including specific container color and labeling requirements, and record keeping, to reduce container contamination. The proposed regulation requires generators to subscribe to services and requires jurisdictions to provide services and verify compliance. The article allows jurisdictions to provide a variety of organic waste collection services including a three-container (green/blue/gray) collection service (a fourth container can be used for food waste if a jurisdiction wishes to source separate green material and food waste), two-container (green/gray or blue/gray) collection service, and an unsegregated single-container (gray) collection service. Each service is subject to State minimum standards. Container colors and labels dictate what waste is intended for collection.

- Article 4. Education and Outreach

  Article 4 requires jurisdictions to provide organic waste generators with organic waste recovery education and outreach, including information on organic waste prevention/recycling, methane reduction benefits from reducing organic waste disposal, health and safety impacts associated with organic waste disposal, and information regarding programs for donating edible food. In addition, each jurisdiction is required to maintain a list of food recovery organizations and food recovery services operating in the jurisdiction.

- Article 5. Generators of Organic Waste

  Article 5 requires non-local entities and local education agencies to prevent and reduce the generation of organic waste by subscribing to and complying with an organic waste collection service that meets the requirements of Article 3; provide containers for the collection of organic waste and non-organic recyclables in all areas where disposal containers, except restrooms, are located; monitor and minimize contamination; and provide education to employees.

- Article 6. Biosolids Generated at a Publicly Owned Treatment Work

  This article clarifies that Publicly Owned Treatment Works (POTWs) generating biosolids are not subject to the generator requirements set forth in Article 3; the organic waste diversion and measurement requirements described in 14 CCR, Sections 17409.5.1 through 17409.5.8; and the record keeping and reporting requirements described in 14 CCR, Section 17414.2.

- Article 7. Regulation of Haulers

  Article 7 specifies requirements for haulers and self-haulers and states that these entities must comply with applicable local standards implemented by cities and counties as a result of the proposed regulation.

- Article 8. California Green Building Standards Code and Model Water Efficient Landscape Ordinance

  Article 8 requires jurisdictions to adopt an ordinance or other enforceable requirement that requires compliance with provisions specified in the California Green Building Standards Code—specifically, requirements to recycle nonhazardous construction and demolition waste and ensure that appropriate space for recycling containers is incorporated into the design of new residential and commercial construction. Additionally, this article requires jurisdictions to adopt an ordinance or other enforceable requirement that requires compliance with the applicable provisions of the Model Water Efficient Landscape Ordinance.

- Article 9. Locally Adopted Standards and Policies

  Article 9 provides clarification on the limitations of the reach of the proposed regulation and limitations on locally adopted standards and ordinances.

- Article 10. Jurisdiction Edible Food Recovery Programs, Food Generators, and Food Recovery

  Article 10 requires jurisdictions to implement and oversee an edible food recovery program. In addition, commercial edible food generators must establish documented arrangements with food recovery organizations or services, arrange to recover the maximum amount of edible food that would otherwise be disposed of, and meet record-keeping requirements to demonstrate compliance with this article.

- Article 11. Capacity Planning

  Article 11 contains requirements for local organic waste recovery capacity planning, edible food recovery capacity planning, and associated requirements for local jurisdictions to report to CalRecycle.

- Article 12. Procurement of Recovered Organic Waste Products

  Article 12 requires jurisdictions to procure minimum levels of compost, renewable natural gas (RNG), or electricity derived from biomass conversion facilities that receive feedstock from solid waste facilities. Procured RNG must be used for one of the following end uses: transportation fuel, pipeline injection, heating, and/or electricity. Additionally, jurisdictions must meet minimum recycled content and recyclability standards for paper products. Jurisdictions are also required to meet record keeping requirements to demonstrate compliance with this article.

  For RNG produced at POTWs and electricity produced at biomass conversion facilities, the facility must demonstrate that it receives feedstock from solid waste facilities to be eligible. Additionally, RNG produced at a POTW that transfers more than 25 percent of its biosolids to an activity not defined as recovery in Article 2 is ineligible to count toward meeting a jurisdiction's recovered organic waste product procurement requirements.

- Article 13. Reporting

  Article 13 contains requirements relating to reporting by local jurisdictions to allow CalRecycle to determine compliance with the proposed regulation.

- Article 14. Enforcement

  Article 14 requires jurisdictions to adopt and oversee an enforcement program that enforces compliance with the proposed regulation. Jurisdictions would primarily oversee entities subject to their authority, including generators, haulers, and other entities.

- Article 15. Enforcement Oversight by the Department

  Article 15 requires CalRecycle to conduct compliance evaluations of jurisdictions to verify compliance with the proposed regulation, and authorizes CalRecycle to take appropriate enforcement actions if it is determined that a jurisdiction is in violation of the regulation.

- Article 16. Penalties

  Article 16 establishes the levels of administrative civil penalties that may be levied by local jurisdictions or CalRecycle for violations of the proposed regulation.

- Article 17. Performance-Based Source-Separated Organic Collection Service

  Article 17 allows jurisdictions implementing a three-container (green/blue/gray) collection service that meets minimum performance standards to be exempt from specific requirements related to education and outreach, contamination monitoring, reporting, and enforcement.

Chapter 3 – Minimum Standards for Solid Waste Handling and Disposal, Article 6 Transfer/Processing Operations and Facilities Regulatory Requirements (14 CCR Section 17402 et seq.)

The proposed regulation would amend Chapter 3, Article 6 of Title 14, Division 7. The notable regulatory changes include:

- Definitions

  The proposed regulation would add several new definitions to Article 6. Important new definitions include: "consolidation sites," "contamination," "gray container collection stream," "incompatible material," "organic waste," "source-separated organic waste collection stream," and "mixed waste organic collection stream."

- Transfer/Processing Operations and Facilities – Organic Waste Recovery Efficiency

  The proposed regulation would amend existing regulations pertaining to transfer/processing facilities and would require that these facilities demonstrate their organic waste recovery efficiency, meet an incompatible material (ICM) limit (cleanliness standard) for materials separated for recovery, and sample gray container collection streams to determine the amount of organic waste present in the gray containers of the jurisdictions they serve. The proposed regulation outlines the methods for measuring these standards for source-separated organic and mixed waste organic collection streams. Sampling methods include separating ICM from outgoing waste streams sent for recycling or recovery.

- Transfer/Processing Operations and Facilities – Record Keeping and Reporting Requirements

  New record keeping and reporting requirements have been added, requiring operators of transfer/processing facilities to keep additional records, including sampling information, daily outgoing weights of recovered and disposed material, and daily incoming weights of material for the mixed waste organic and source-separated organic collection streams.

Chapter 3.1 – Composting Operations Regulatory Requirements, Article 5 Composting Operation and Facility Siting and Design Standards Section 17867 et seq.)

The proposed regulation would amend Chapter 3.1, Article 5 of Title 14, Division 7. The notable regulatory changes include the following:

- General Operating Standards

  The proposed regulation would require that operators of composting operations or facilities determine the percentage of organic waste contained in materials removed after processing sent for disposal.

Chapter 3.2 – In-Vessel Digestion Operations and Facilities Regulatory Requirements, Article 2 Siting and Design (Section 17896.25 et seq.)

The proposed regulation would amend Chapter 3.2, Article 2 of Title 14, Division 7. The notable regulatory changes include the following:

- Measuring Organic Waste in Materials Sent to Disposal (In-Vessel Digestion Operations and Facilities

  The proposed regulation would require that operators of AD (or in-vessel digestion) operations or facilities determine the quarterly percentage of organic waste contained in materials sent to disposal after processing and only send digestate to facilities that meet prescribed ICM levels for further processing.

Chapter 5 – Enforcement of Solid Waste Standards and Administration of Solid Waste Facilities Permits; Loan Guarantees, Article 2.2. LEA Performance Standards, Evaluation Criteria, and Duties and Responsibilities (Section 18083)

The proposed regulation requires local enforcement agencies (LEAs) to monitor solid waste facilities to determine recovery efficiency and compliance with ICM limits through record reviews and observation of samples and application sites.

Chapter 9 – Planning Guidelines and Procedures for Preparing, Revising, and Amending Countywide or Regional Integrated Waste Management Plans, Article 9.25 Recycling and Disposal Reporting System (Section 18815.4-18815.7)

The proposed regulation requires facilities to report the results of sampling for recovery efficiency, ICMs, and presence of organic waste in material sent to disposal to CalRecycle on a quarterly basis through the existing Recycling and Disposal Reporting System. The regulation specifies how CalRecycle determines quarterly averages for these samples.

Revisions to Title 27, Division 2.

The proposed regulation would amend Chapters 2, 3, and 4 of Title 27. Notable regulatory changes include the following:

- Article 3. CalRecycle – Handling, Equipment, and Maintenance

  The proposed regulation requires landfill operators that expand their facility to establish an on-site organic waste recovery activity or transport organic waste to another facility that recovers organic waste. The section exempts material received at a landfill from this requirement if it has already been processed at another facility that recovers 75 percent of the organic waste it receives.

- Article 4. CalRecycle – Controls

  The proposed regulation requires landfill operators to sample gray container collection streams to determine the amount of organic waste present in the gray containers of the jurisdictions they serve.

Chapter 4. Documentation and Reporting for Regulatory Tiers, Permits, Waste Discharge Requirements (WDRs), and Plans, Subchapter 3: Development of WDRs and Solid Waste Facility Permits

- Article 2. CalRecycle – Applicant Requirements

  The proposed regulation requires operators of proposed new or expanded solid waste facilities to submit evidence that they held a public meeting with disadvantaged communities 180 days prior to submittal of a permit application package.

- Article 3.2. CalRecycle – Other Requirements

  The proposed regulation requires landfill operators to submit an organic disposal reduction status impact report. The report must notably include information from a study that evaluates the effectiveness of the existing and/or planned intermediate cover, which would be applied for a period of more than 12 months, relative to the effectiveness of the proposed final cover to comply with landfill gas monitoring and control requirements.

2.4. Description of Actions to Reduce Methane Emissions from Landfills

Methane is emitted from a wide range of fugitive sources and biological processes, and is the second largest component of global GHG emissions (16 percent), next to carbon dioxide (65 percent). Methane emissions are growing globally, in part as a result of human activities related to waste handling and treatment. Agriculture collectively represents the largest methane source in California, accounting for nearly 60 percent of methane emissions. Landfills are the next largest source of methane, accounting for one-fifth of statewide methane emissions (CARB 2017a:56).

To reduce methane emissions, the SLCP Reduction Strategy contains methane reduction measures and identifies research needs and information gaps to be addressed. Landfills are one of the primary areas addressed by the SLCP Reduction Strategy.

Landfilling of organic waste leads to the anaerobic breakdown of these materials into methane, some of which works its way into the atmosphere, becoming a fugitive emission. Organic waste, as defined in the proposed regulation, constitutes more than 67 percent of California's waste stream, and a holistic approach is needed to effectively redirect and manage it to reduce the production of methane. This means not only keeping organic waste out of landfills, either through source reduction and recycling, but also improving the infrastructure for recovering and/or recycling organic waste, including recovering edible food for human consumption and fostering composting, AD, and processes for energy recovery.

To achieve goals for organic waste recovery and GHG-reduction benefits, California must have enough capacity for in-state composting, AD, or other organic waste processing and recovery operations. Markets for recovered organic material also need to be robust and resilient, whether related to food recovery, compost, soil amendments, transportation fuels, energy, or other uses.

To meet statutory goals through implementation of the proposed regulation, the State would take the following actions to reduce methane emissions from landfills in California. Coupled with these actions the proposed regulation includes enhanced tracking of materials, establishing collection consistency and higher processing efficiencies, local planning, and additional public involvement.

2.4.1. Require Reductions in Landfill Disposal of Organic Waste

The proposed regulation requires a reduction in the level of statewide disposal of organic waste to 50 percent of 2014 levels by 2020 and 75 percent by 2025.

Organic waste that can be effectively recovered would be redirected to organic waste recovery facilities to make useful products, including compost, fuel, or energy. These facilities may be developed at or near existing landfills, other waste management sites, or stand-alone sites. Some organic wastes could also be recovered at regional wastewater treatment plants (WWTPs) that have excess capacity for co-digestion.

2.4.2. Require Edible Food Recovery

Of the edible food in the organic waste stream, not less than 20 percent, is to be recovered to feed people by 2025. This goal could be met through food waste reduction by redirecting edible food to local food recovery services and organizations.

2.4.3. Foster Recovery Programs and Markets

With implementation of the proposed regulation, CalRecycle would continue to work collaboratively with other agencies to help establish edible food recovery programs and to identify, develop, and expand markets for the use of compost, mulch, and renewable fuels and energy. For example, CalRecycle and the California Department of Food and

Agriculture (CDFA) would continue their efforts to incentivize (such as providing funding through the 2018 Healthy Soils Program Incentives Program) the use of compost on agricultural lands in support of the State's Healthy Soils Initiative, including developing best management practices for agricultural use. The proposed regulation also imposes procurement requirements for recovered organic waste products at the local level that would support the markets for these materials.

2.5. Reasonably Foreseeable Compliance Responses

SB 1383 requires redirection of a substantial amount of organic waste from landfill disposal. The targeted maximum amount of organic waste disposed of is approximately 5.7 million tons in 2025 and thereafter. An estimated 26.8 million tons of organic waste would need to be redirected from landfill disposal in 2025, with the amount of material to be redirected to increase in years thereafter consistent with projected increases in statewide population growth. Material from many of the targeted organic waste categories (such as paper and green material) has been redirected from landfills for many years, although not in the quantities contemplated by SB 1383. The proposed regulation establishes minimum standards for the collection and management of organic waste; however, there are several ways regulated entities can comply (such as different types of collection services). It is reasonably foreseeable that the technologies and approaches described below, used in concert, would play a major role in meeting the mandates, because they are already in place in California to some extent.
The reasonably foreseeable compliance responses that would occur in response to the proposed regulation are the actions evaluated in this EIR, which evaluates the potential to change the physical environment as a result of these actions.

Redirection of organic waste from landfills would be reasonably expected to also result in the development of new or expanded organic waste recovery and edible food recovery facilities in the state. The following actions would be reasonably foreseeable compliance responses with the potential to result in either a direct or indirect physical change in the environment. These include construction activities, infrastructure and equipment installations, and substantial operational changes to facilities. The rates of disposal of organic waste and edible food recovery varies greatly across the state. Achieving the goals of the proposed regulation would require expansion of organic waste collection services and recovery facilities to varying degrees across California communities. The types of facilities and programs that are reasonably expected to be developed in response to SB 1383 are listed in Table 2-2 and described below. Table 2-2 also shows the fraction of the total organic waste stream that is projected to be handled by each type of organic waste recovery program, facility, or operation.

Table 2-2 Reasonably Foreseeable Types of Compliance Responses

Types of Compliance Responses	% of Organic Waste by Facility Type[1]	2025 Tons (Projected)	2030 Tons (Projected)
Compost	29.6%	9,582,927	9,968,337
Anaerobic Digestion	15.7%	5,090,088	5,294,803
Chipping and Grinding	10.3%	3,344,281	3,478,783
Recycling	14.7%	4,761,082	4,952,565
Source Reduction	5.5%	1,781,235	1,852,873
Food Recovery	2.1%	676,724	703,941
Land Application	2.0%	661,200	687,793
Biomass Conversion	0.9%	306,387	318,710
Emerging Technologies	2.0%	646,487	672,488
Disposal	16.9%	5,473,945	5,694,099
Total[2]	**100.0%**	**32,324,358**	**33,624,392**

[1] The percentage of organic waste by compliance response type shown in column two of this table reflects the fraction of the projected generated waste in 2025 and 2030. The amount disposed in 2025 and 2030 (+/-) 5.7 million tons represents 25 percent of 2014 organic waste disposal levels.

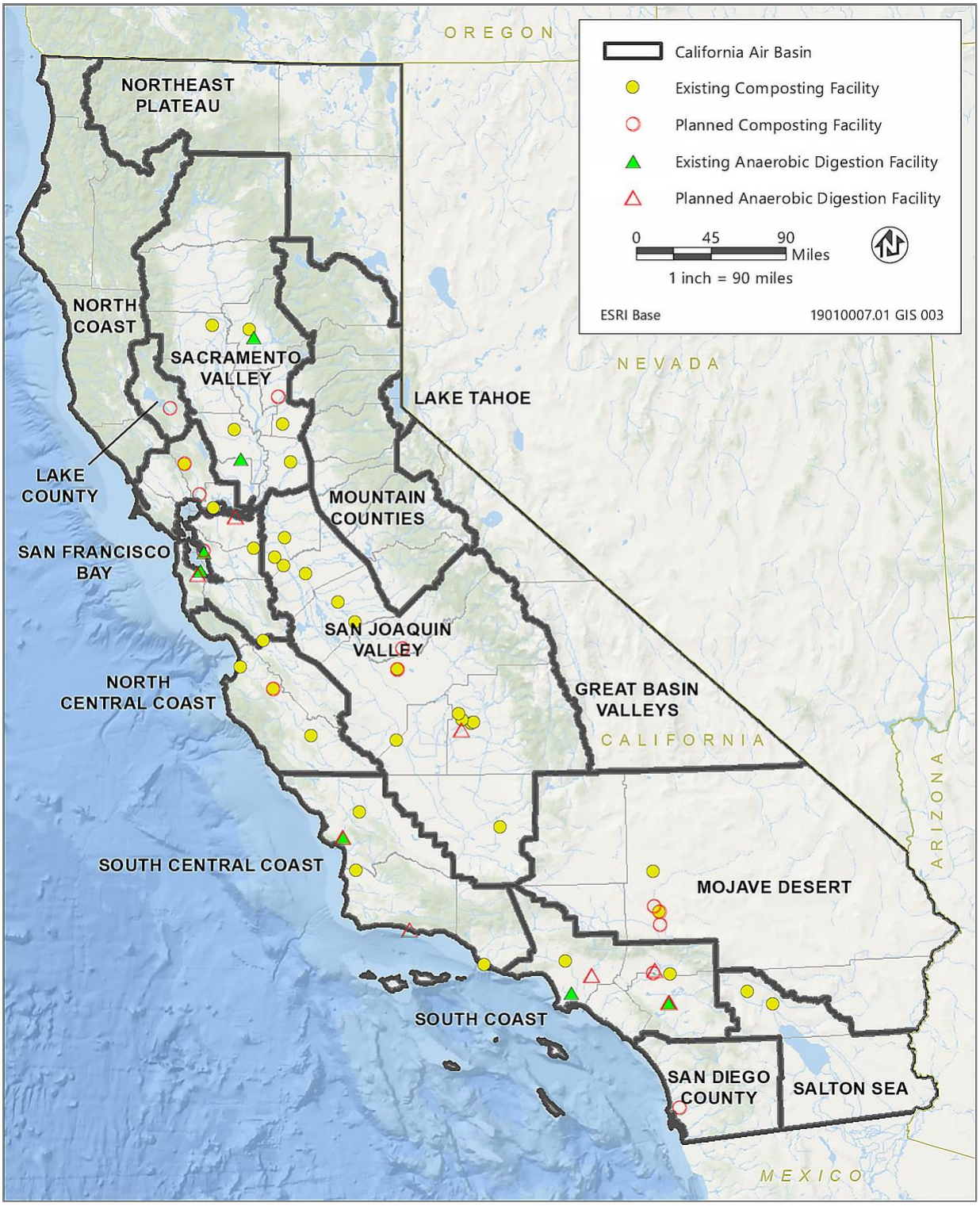
[2] This table includes approximately 1.9 million tons of digestate, which will be produced as a result of anaerobic digestion in 2025 and 2030. This material is projected to be managed primarily through composting and land application. Source: CalRecycle 2019a

2.5.1. Compost Facilities

Background

Many of California's largest composting facilities are currently located in the San Joaquin Valley, outside of major urban areas where materials are generated but closer to large agricultural areas where compost is used. While there are over 150 permitted composting facilities in California, not all of these are designed to handle food waste and other organic waste included in the regulatory definition. Handling food waste, for example, often requires a higher level of permitting, compared to a green material-only facility, by most of the permitting agencies, including CalRecycle, the regional water quality control boards (RWQCBs), and some air districts. Thus, it is unlikely that smaller compost facilities (such as those located at wineries, feedlots, or mushroom farms) are likely to provide substantial capacity for food waste. Figure 2-1 shows the location of existing and planned grant-funded composting facilities (i.e., a facility with 25,000 cubic yards or more of organic waste processing capacity that accepts food waste, manure, and/or biosolids, among other organic waste) that could handle additional materials.

Currently, composting facilities are located between the point of generation (generally urban centers) and compost markets (generally agricultural lands), but typically closer to markets because of land use issues and because it is easier to spread the cost of



Sources: SWRCB 2019; CalRecycle 2019b

Figure 2-1 Location of Existing and Planned (Grant-Funded) Composting and Anaerobic Digestion Facilities That Handle SB 1383 Targeted Materials

transport among solid waste ratepayers than compost customers. Compost facility development is currently constrained in ozone nonattainment areas, particularly where volatile organic compound (VOC) offsets are not available. The South Coast Air Quality Management District and San Joaquin Valley Air Pollution Control District have established compost facility specific VOC rules, which provide a pathway for compost facility development, and offsets are generally available in these areas, which include the eight counties that compose California Central Valley and Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino Counties. Other air districts are in the process of developing similar regulations.

A recent report completed by CalRecycle revealed that there are approximately 4 million tons of existing permitted capacity currently available at existing compost facilities to process additional organic waste (CalRecycle 2019c:1).

The rural areas between Los Angeles and the southern end of the San Joaquin Valley, and between the Bay Area and the northern end of San Joaquin Valley have some of the largest composting facilities in California. Likewise, most of the currently available composting capacity exists in these same areas. The areas with the greatest deficit of composting capacity compared to the generation of compostable materials in California is the southernmost part of the state, which includes the Inland Empire and Los Angeles, Orange, and San Diego Counties.

There are two basic types of commercial-scale composting methods: windrows and aerated static piles (ASPs). Most facilities (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 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 VOCs and ammonia. Positive aeration systems may use fabric covers or a thick top layer of finished, unscreened compost that acts a biofilter. Negative aeration systems discharge air from the piles through a dedicated system that further reduces pollutants.

Composting occurs in two 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 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 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 general public, nurseries, and landscapers. CDFA regulates the application of compost as an input for any soil amendment used for crop nutrition, in both organic and conventional farming.

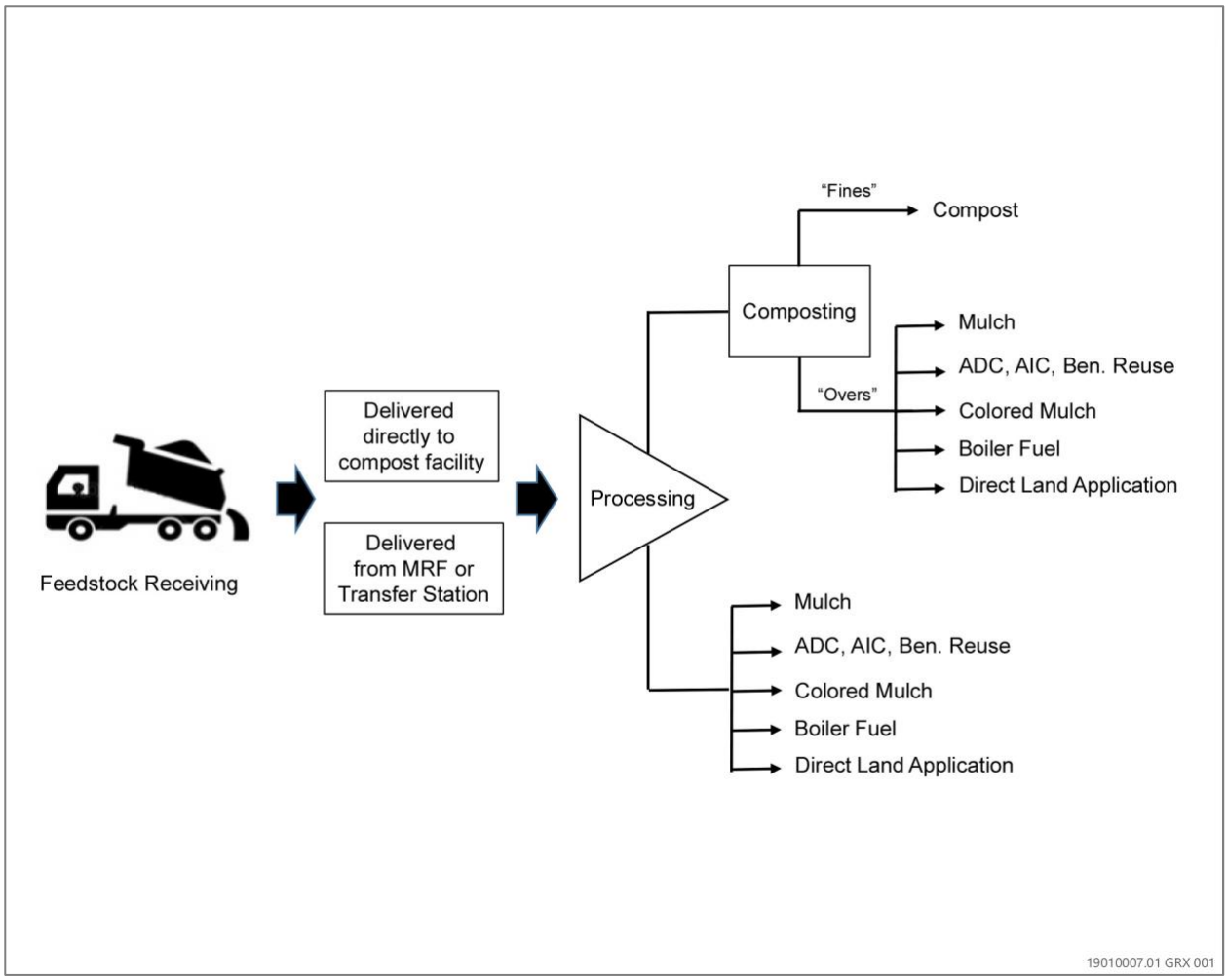
Figure 2-2 shows the general compost process steps from the receipt of feedstock materials at a compost facility to the creation of finished products. Figure 2-3 illustrates the types of potential environmental impacts associated with each step of the composting process. At the end of the compost process, most commercial producers sort material through mechanical screens. These screens produce two or three streams of products. The finer material passing through the screens is often called the “fines.” This is what most people recognize as compost. The larger fraction, which does not pass through the screens, is referred to as the “overs.” Ideally, a compost producer wants to maximize production of “fines” as that is from where most of the product revenue comes (CalRecycle 2019c:57). Composted material is transported from composting facilities as a soil amendment for agricultural, landscaping, and horticulture uses.

The largest fraction of “overs” includes material that is recycled back into the compost process. The next largest use of overs is for landfill ADC. Other uses include use as mulch, fuel for biomass conversion, and other uses at landfills.

Reasonably Foreseeable Compliance Response

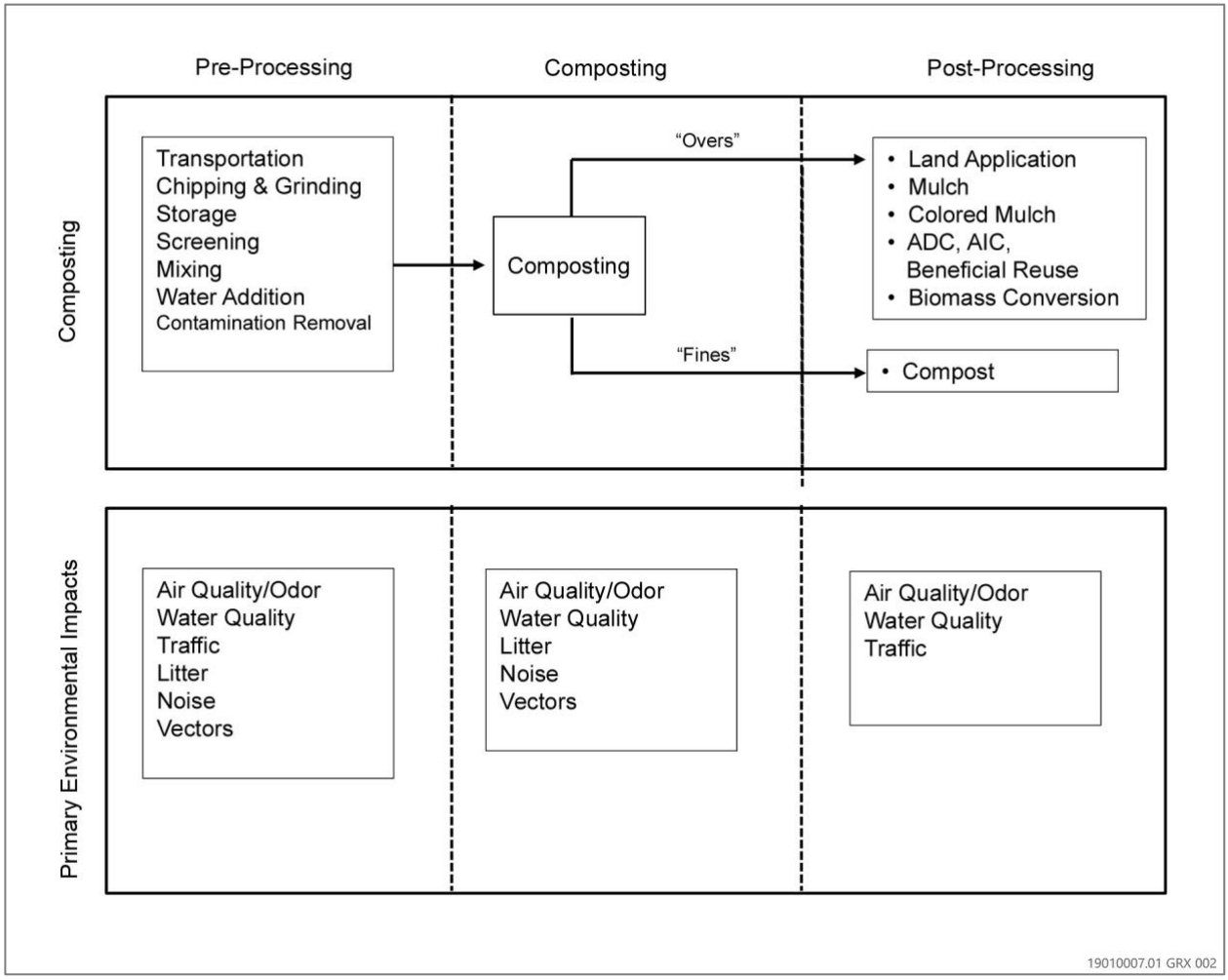
It is reasonable to expect that new or expanded compost facilities would be constructed in response to the proposed regulation. Most new or expanded facilities would likely be developed using ASP composting technology, either to comply with required VOC limits established by local air districts or to comply with the statewide general order for composting from the State Water Resources Control Board (General Order) to protect water quality. The General Order does not require forced air composting, but the ability of forced air systems to handle more material (than windrow systems) on a smaller footprint would improve the cost-effectiveness of water quality order compliance (i.e., smaller site footprint equals less capital cost for drainage controls). The infrastructure

report noted above demonstrated that the mean of tonnage processed by survey respondents is 112,000 tons per year. Further, a majority of composters reported throughput in excess of 300 tons per day. At a minimum of 260 operating days, this would translate to throughput of 78,000 tons. These numbers are in close alignment with the SLCP Reduction Strategy assumption that new facilities would process 100,000 tons per year (CARB 2017b:25–26, 36). CalRecycle finds that it is reasonable to assume that new compost facilities would each handle an estimated 100,000 tons per year of organic waste.



Source: IWMC 2019a

Figure 2-2 Composting Flow Chart



Source: IWMC 2019b

Figure 2-3 Potential Environmental Impacts Associated with Composting

As shown in Table 2-3, CalRecycle estimates that an additional 108 compost facilities could be constructed in the state by 2030. There are many factors that can determine the location of a composting facility, such as zoning provisions, cost of land, proximity to residential neighborhoods, local air quality attainment status and related regulations, availability of air quality offsets, water availability and ground water/surface water proximity, proximity to feedstock sources and markets for finished product, technology choices, and local construction costs. For the purposes of this EIR, it is reasonably expected that new and/or expanded composting facility development could occur in locations where existing site conditions and/or land use controls are conducive to facility development, such as at or near existing landfills, at other existing waste management sites, at new stand-alone sites in areas zoned for industrial or solid waste handling facilities, at inactive biomass facilities, or near dairies (for manure composting). The precise location of future facilities cannot be known at this time. Proposed projects would be subject to approval by jurisdictions with land use or permitting authority.

Table 2-3 Potential New and/or Expanded Composting and Anaerobic Digester Facilities by Air Basin

Material Disposition	Potential Compost Facility Development 2025 Tons	Potential Compost Facility Development # of Potential Facilities	Potential Compost Facility Development 2030 Tons	Potential Compost Facility Development # of Potential Facilities	Potential Anaerobic Digester Facility Development 2025 Tons	Potential Anaerobic Digester Facility Development # of Potential Facilities	Potential Anaerobic Digester Facility Development 2030 Tons	Potential Anaerobic Digester Facility Development # of Potential Facilities
South Coast	4,352,407	44	4,527,454	46	2,228,637	23	2,318,269	24
San Francisco Bay	1,378,797	14	1,434,250	15	753,472	8	783,775	8
San Joaquin Valley	1,013,546	11	1,054,309	11	593,313	6	617,175	7
San Diego County	998,549	10	1,038,709	11	507,764	6	528,186	6
Sacramento Valley	615,580	7	640,338	7	331,586	4	344,922	4
South Central Coast	525,388	6	546,518	6	287,104	3	298,651	3
Mojave Desert	328,093	4	341,288	4	175,986	2	183,064	2
North Central Coast	251,213	3	261,316	3	149,364	2	155,371	2
Salton Sea	70,546	1	73,383	1	35,949	1	37,395	1
Lake County	16,647	1	17,316	1	9,898	1	10,296	1
Mountain Counties	15,288	1	15,902	1	7,795	1	8,109	1
Great Basin Valleys	11,422	1	11,882	1	5,978	1	6,219	1
Northeast Plateau	5,454	1	5,673	1	3,243	1	3,373	1
North Coast	0	0	0	0	0	0	0	0
Lake Tahoe	0	0	0	0	0	0	0	0
Statewide Totals:	**9,582,927**	**104**	**9,968,337**	**108**	**5,090,088**	**59**	**5,294,803**	**61**

NA = Not Applicable
Source: CalRecycle 2019a

Facilities that would be located near urban centers are more likely to be co-located with an established landfill, transfer station, or MRF, due to permitting requirements and site development opportunities. It is also likely that community-scale composting solutions may grow in popularity in urban centers as local food and climate movements grow. Smaller scale indoor or in-vessel composting facilities or alternative technologies that lend themselves to enclosure (such as vermicomposting or black soldier fly composting) could also increase in urban communities.

2.5.2. Anaerobic Digestion Facilities

Background

As a technology, AD has been commercialized for many years, but it is only recently that it has been applied to municipal food waste. For example, some WWTPs have used AD as one method to manage biosolids. Currently, there are two main types of AD facilities in California handling municipal feedstocks: stand-alone AD facilities and WWTP-sited digestion facilities (also referred to as co-digestion facilities). Most AD facilities currently handling municipal wastes are stand-alone facilities.

Figure 2-1 shows the location of existing and planned grant-funded AD facilities throughout the state. The two largest AD facilities handle a mixture of green material and food waste.

A few of the larger WWTPs have conducted studies on co-digesting food waste with biosolids at WWTP-based co-digesters. These facilities accept food only. Some WWTP digesters receive food waste slurry from facilities with depackaging equipment.

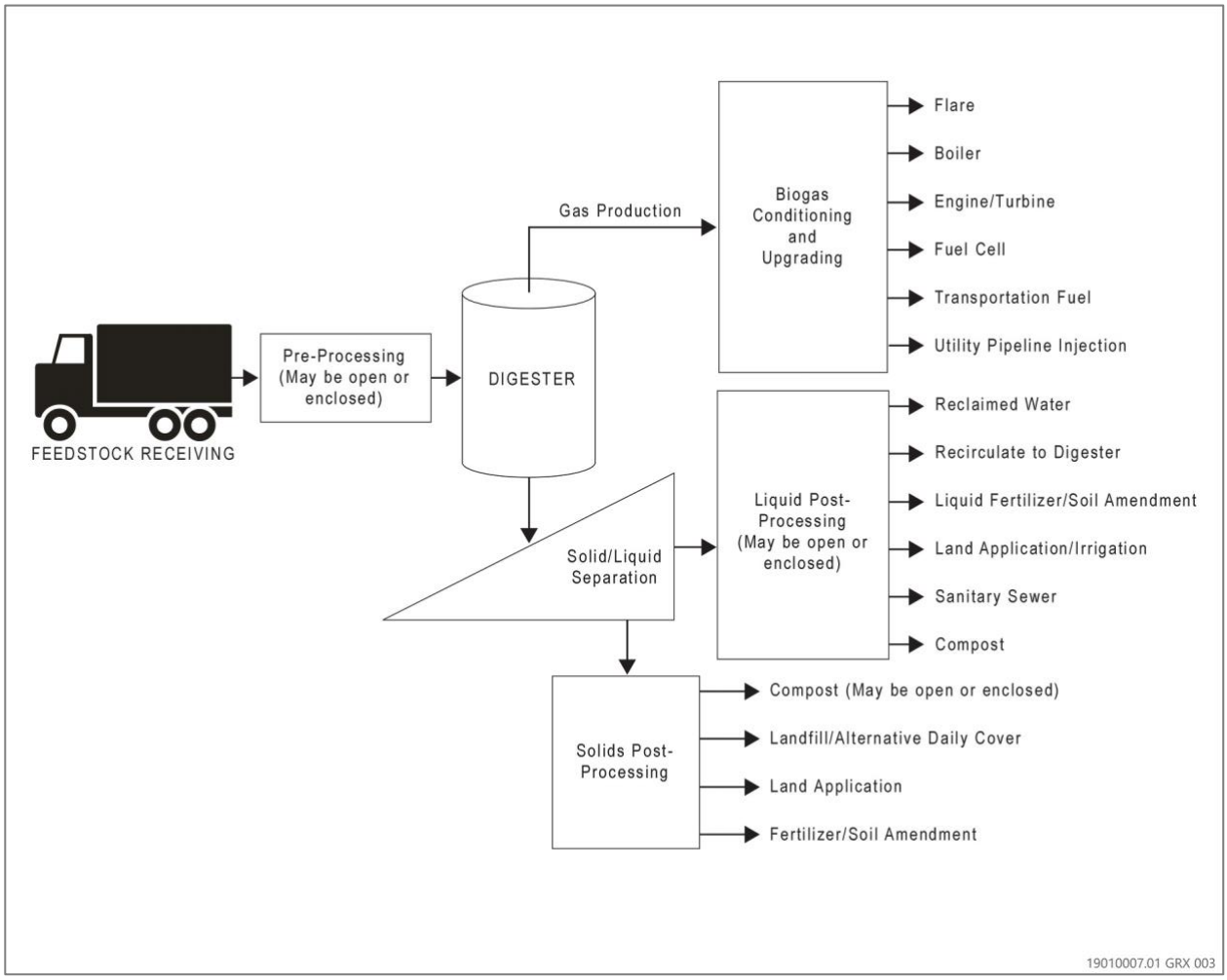
The food waste solids remaining after co-digestion at a WWTP in a mix of biosolids are currently composted; applied to land; or used for ADC, AIC, or another beneficial reuse purpose at certain landfills. Solids from stand-alone digesters are further processed via composting or, if they meet regulatory requirements, are used directly as a soil amendment.

Figure 2-4 shows the general AD process steps from the receipt of feedstock materials at an AD facility to the generation of finished products. Figure 2-5 illustrates the types of potential environmental impacts associated with each step of the AD process.

Reasonably Foreseeable Compliance Response

CalRecycle estimates that an additional 61 AD facilities, each capable of handling an estimated 100,000 tons per year of organic waste, could be developed in the state by 2030 in response to the proposed regulation (see Table 2-3).

WWTPs provide an opportunity to help redirect a portion of organic wastes from landfills and create useful byproducts such as electricity, biofuels, fertilizers, and soil amendments. WWTPs are designed to remove contaminants from wastewater, primarily from household sewage, but with infrastructure improvements could increase acceptance of food waste for co-digestion. AD is a typical part of the wastewater treatment process employed at many of the larger plants, with many plants capturing the methane they currently generate for on-site heating or electricity needs.

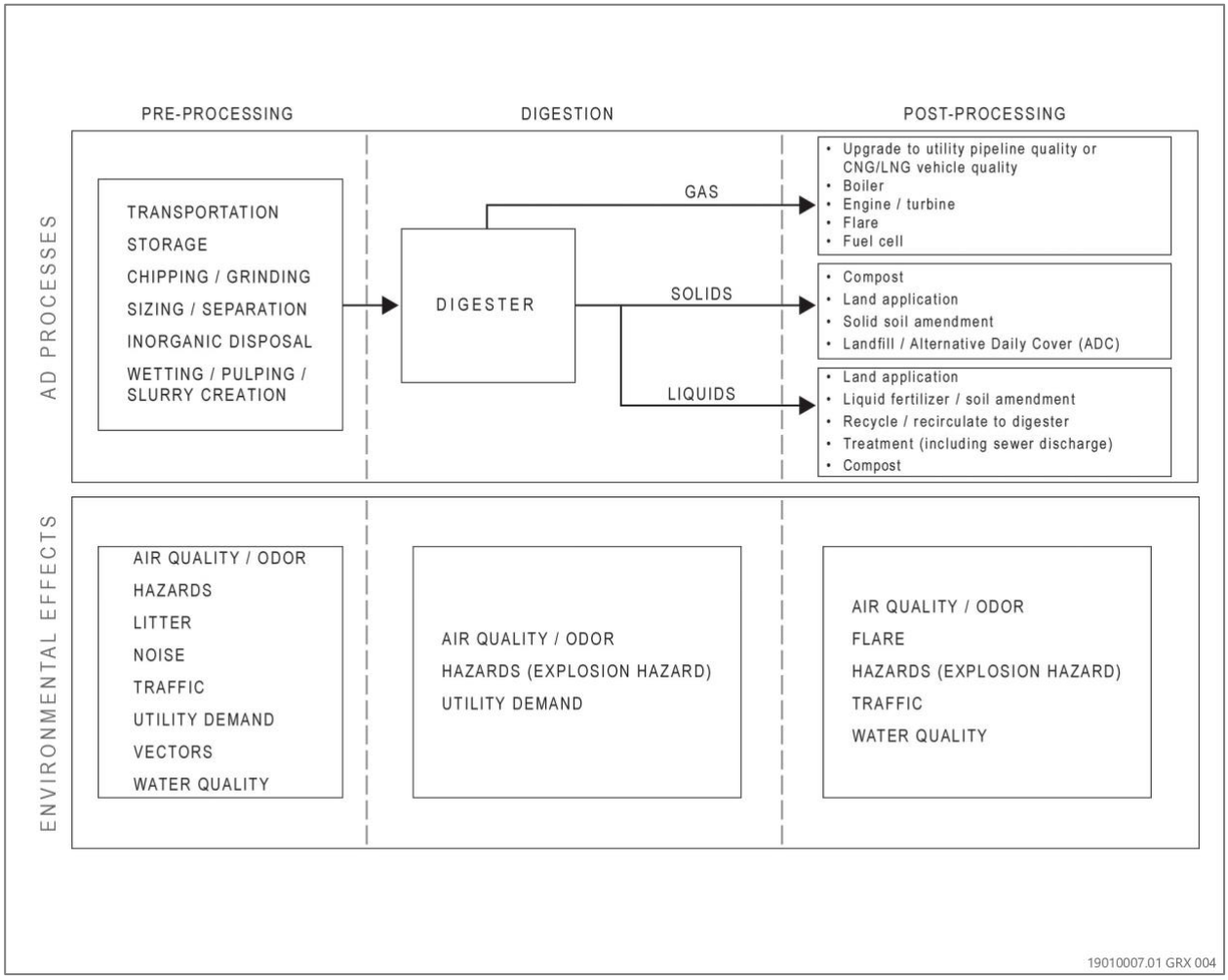


Source: CalRecycle 2011

Figure 2-4 Anaerobic Digestion Flow Chart

Some of these plants may have spare capacity and can potentially take in additional sources of organic waste for AD. Existing and new digesters at these facilities could be designed to co-digest materials such as food waste from residential, commercial, and industrial facilities. Many of the largest plants are located close to population centers and could potentially obtain and process substantial amounts of food and other suitable waste streams within the region.

For the purposes of this EIR, it is reasonably expected that new and/or expanded AD facility development could be located at existing WWTPs, co-located at composting or other existing waste management facilities, or located a stand-alone sites in areas zoned for industrial or solid waste handling facilities. Much of the material redirected to these facilities, typically by truck transport, would consist of source-separated food waste from both the residential and commercial sectors.



Source: CalRecycle 2011

Figure 2-5 Potential Environmental Impacts Associated with Anaerobic Digestion

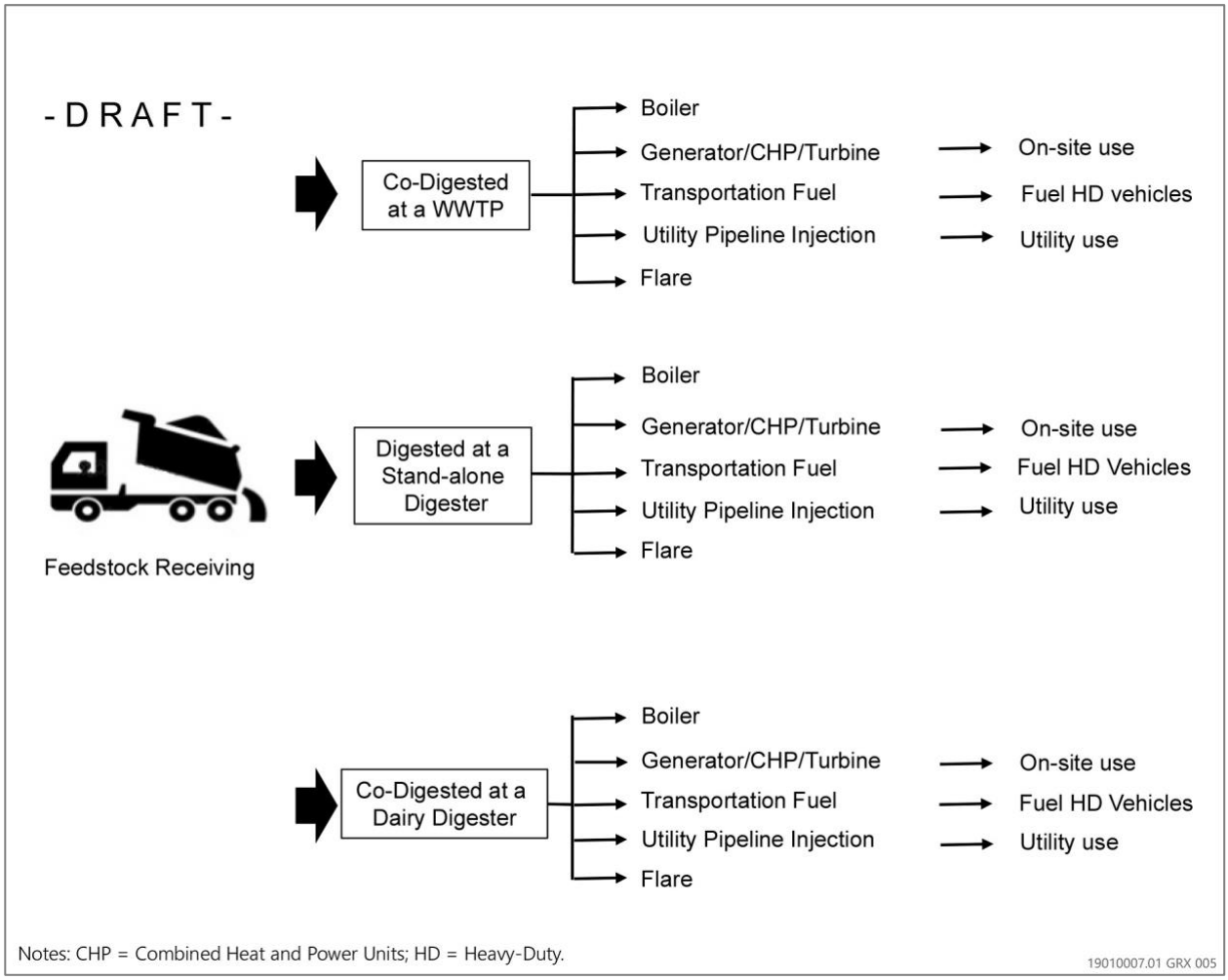
Organic waste processed at AD facilities is converted into biogas, comprised primarily of methane. This biogas could potentially be used for on- or off-site electricity generation, cleaned and compressed for use as a natural gas pipeline supplement, or as a vehicle fuel. These systems would use a variety of industrial-type equipment and infrastructure, which could include electricity generator sets, biogas storage tanks and compression and cleaning equipment, pipeline systems, transmission poles and wires, and vehicle-fueling stations. Figure 2-6 shows the general biogas process steps from the receipt of feedstock materials at an AD facility to the end uses of finished products.

Anaerobic digesters may install flares to dispose of collected methane. However, flares at digesters would operate only for emergency purposes and would generally not be expected to be routinely used; and, flares installed at gas facilities would be enclosed and meet low-NO_x emission standards. Installation and operation of flares would be subject to permitting by local air districts.

2.5.3. Chipping and Grinding Facilities

Background

California has processing infrastructure for woody materials including urban wood waste and green material. The majority of this is processed via “chipping and grinding” facilities. There are over 100 chipping and grinding facilities in California. These are co-located at landfills, MRFs, and transfer stations, and at stand-alone chip and grind facilities. There are also portable chip and grind operations that move from site to site.



Source: IWMC 2019c

Figure 2-6 Biogas Flow Chart

The main markets for materials produced through chip and grind operations are biomass fuel, landfill ADC and AIC, mulch, direct land application, and colored mulch. Food waste is not appropriate as a mulch feedstock, because it has not been pathogen reduced and attracts vectors. Using uncomposted food waste as mulch constitutes disposal. Organic waste commonly used for mulch includes wood chips, ground up landscape trimmings, shredded bark, coarse compost material, straw, and shredded paper.

Since 1997, it has been possible for landfill operators to use processed green material as ADC, AIC, or another beneficial use at landfills and did not have this counted as disposal in accordance with AB 939 (Sher, Chapter 1095, Statutes of 1985) mandates. AB 1594 (Williams, Chapter 719, Statutes of 2014) phases out the exception to counting toward disposal, as that term is used in the context of AB 939, for the use of green material as ADC. It is less known whether or not landfill operators will stop using processed green materials as cover or for another beneficial reuse given that change. Using processed green material as an ADC, AIC, or another beneficial reuse has been one of the cheapest means of using these materials for the purposes of AB 939 compliance.

Because the use of organic waste for these activities creates anaerobic conditions, resulting in the generation of methane, the activities clearly do not satisfy the methane reduction goals of SB 1383 Therefore, under SB 1383, use of organic waste for ADC, AIC, or other beneficial uses that results in the placement of material in a landfill and creation of GHG emissions is considered disposal.

CalRecycle estimates almost 2 million tons of organic waste (including biosolids) were used as ADC, AIC, or another beneficial reuse in 2017 (CalRecycle 2019c:6).

Reasonably Foreseeable Compliance Response

The infrastructure for chip and grind operations would be readily developed because of their flexible size and limited need for buildings and infrastructure; thus, CalRecycle expects the existing chip and grind infrastructure to expand as volumes of appropriate materials increase. The decline in the biomass markets and the change in the diversion credit for green waste ADC may affect the ability to expand this infrastructure, however, because there may not be sufficient demand for the byproducts of chip and grind operations.

CalRecycle anticipates that the proposed regulation would increase the amount of material handled through chipping and grinding facilities. Specifically, CalRecycle predicts that chipping and grinding operations could be used to redirect approximately 10 percent of the organic waste from landfills (see Table 2-2), beginning in 2025 and continuing thereafter.

2.5.4. Recycling Facilities

Background

California has a collection infrastructure in place for paper recycling. Paper recycling is the practice of collecting paper to produce recycled paper or some other product, such as building (i.e., cellulose) insulation. The most visible method of paper recycling is residential curbside recycling programs, which collect a variety of paper types generated by households throughout the state. Most jurisdictions in the state (400+) provide some form of residential paper and cardboard collection, and more than 200 jurisdictions also provide paper and cardboard collection for the commercial sector. Most recovered paper and cardboard originates from the business and industrial sectors (CalRecycle 2018a).

Several jurisdictions have shifted from single-stream to dual-stream collection systems, which collect paper and fiber separately from other recyclables. Haulers implementing these systems indicate that implementing these systems results in reductions in contamination and residual waste and improved marketability for paper (Paben 2019; Toto 2019; Pyzyk 2018).

Limited data are available specific to existing processing capacity for paper in California. Because most residential recycling systems collect paper in some form, it is reasonable to assume that most MRFs processing recyclables participate in paper and fiber recovery to some degree. The impact of National Sword (a 2017 policy established in China that banned the import of certain types of solid waste and set strict contamination limits on recyclable materials) has increased demand for processing and producing a cleaner stream of paper, particularly in cases where a jurisdiction has a contract that includes specific recovery rates; requirements for recovered materials to meet certain market standards (e.g., Institute of Scrap Recycling Industry bale grades); and/or recovery of certain material categories, such as paper.

National paper recovery rates climbed to 68.1 percent in 2018 and were the highest on record dating back to 1990 (Staub 2019). However, a review of waste composition data (5,067,206 tons of paper were disposed in 2014 and a projected 6,814,507 tons would be disposed in 2025; see Table 2-1) reveals that there is considerable room to increase statewide paper recovery.

Reasonably Foreseeable Compliance Responses

Jurisdictions and haulers can reasonably be expected to take any combination of the following actions related to paper recycling:

- Invest in new processing technology at MRFs and/or increase processing time to process higher-quality fiber bales to meet market standards.
- Invest in or partner with new or expanded secondary processing facilities to further recycle wastepaper into intermediary or finished products.
- Revise collection systems (either implement dual-stream collection or place restrictions on types of materials allowed to be collected with paper) (e.g., prohibit glass or certain plastics from recycling bins).

The resulting improvements to bale quality may result in access to new foreign and domestic markets. Many of the anticipated actions that are expected to be taken to improve paper recycling quality and quantity may be partially implemented in response to National Sword. Although the proposed regulation may result in similar actions, many of these changes would have occurred in the absence of SB 1383. To the extent paper and fiber quality and recovery increases occur as a result of actions already being taken today to meet quality standards imposed by market conditions, the level of actions induced by SB 1383's new quality standards could be minimized (i.e., SB 1383 may require fewer processing upgrades as a result of upgrades made due to 2018/2019 market conditions).

Collection

With respect to collection, because the proposed regulation imposes recovery efficiency standards for all organic waste types, it is reasonable to assume that none of the jurisdictions that currently have separate collection for commingled recyclables would consolidate their programs to single unsegregated container collection, particularly because paper is exceedingly difficult to recover when combined with refuse.

The proposed regulation additionally imposes ICM limits for materials that a MRF would send to another entity for further processing or recovery. The ICM limits require the processing facility to reduce the presence of ICM to an average of no more than 10 percent. If a facility cannot reduce ICM in certain streams (e.g., paper) to less than 10 percent, then that material can be sent only to a secondary facility that meets minimum organic residual levels (either a recycling center or a solid waste facility that demonstrates that less than 10 percent of its residual stream is organic content).

If a MRF cannot achieve the ICM levels, then its recovery options would be limited to sending material to secondary facilities that meet the organic residual limits. This would create market demand for secondary processors. It is reasonable to expect that MRF operators would seek to avoid the cost that would be created if their options for recovery are limited to sending material to recycling centers or secondary processing facilities that meet the residual standard. It is anticipated that this would drive MRFs to employ strategies to reduce the presence of ICM in the paper stream they send to recovery.

One strategy that may be employed to reduce ICM levels at MRFs is dual-stream collection. The pursuit of this collection option may be limited by the cost of collection changes (shifting to split containers or providing separate containers) and redesigning collection routes. Additionally, depending on the technology employed at MRFs, some existing MRF processing infrastructure is not necessarily adaptable to a dual-stream system (retooling a line that employs technology designed to remove bottles, paper, and cans so that it handles a stream that is only paper may not be feasible). Although the proposed regulation would create pressure for cleaner material, the number of jurisdictions that would employ dual-stream collection is difficult to predict and would depend on many factors. Regardless, some haulers implementing dual-stream systems indicate that dual-stream collection of paper produces lower residual and contamination levels (Paben 2019; Mill Valley Refuse Service 2019). If facilities are unable to attain ICM levels through technology and processing, they may consider employing or piloting dual-stream collection routes.

Processing

It is reasonable to assume that MRF operators would invest in additional and advanced processing technologies, such as artificial intelligence systems, to improve fiber bale quality. MRF operators may also slow down processing lines to improve quality, reduce the presence of ICMs, and increase recovery, which could result in MRFs operating more hours in a given week.

It is also reasonable to assume a potential increase in the number of new or expanded intermediary and secondary processing facilities for paper. These facilities could be

solid waste facilities but could also be recycling centers. These are likely to be located close to existing MRF infrastructure.

CalRecycle anticipates that the proposed regulation would cause changes in paper collection and processing that would increase the total volume of paper recovery. The increase in paper recycling is anticipated to account for approximately 15 percent of the organic waste to be redirected from landfills (see Table 2-2), beginning in 2025 and continuing thereafter.

2.5.5. Land Application

Background

Land application includes use of compostable material, including digestate that is spread on land (primarily agricultural lands) for the plant-growth benefits of its organic content. Compostable material includes any material that, when accumulated, could become active compost (14 CCR, Section 17582 et seq.). Compostable materials and digestate must meet certain standards (i.e., maximum metal concentrations, pathogen density limits, frequency and depth requirements, and physical contamination limits) at the time of land application. The RWQCB or the solid waste LEA is responsible for ensuring compliance with the requirements and/or regulations governing the application of solid waste to land.

Some processors, whether stand-alone or associated with a MRF or transfer station, can process green material and/or wood waste and arrange for it to be spread on land. Green material, especially in southern California, is spread on land. Typically, this material is applied to agricultural lands. In recent years, CalRecycle has clarified when this activity is considered disposal. Most recently, CalRecycle implemented an inert contamination threshold. The threshold is 0.5 percent inert contaminants greater than 4 millimeters in diameter. Of the 0.5 percent, only 20 percent is allowed to be film plastic.

The total amount of compostable material that is being directed to land application is unknown at this time. CalRecycle estimates that over 70 percent of the biosolids that were generated in 2018 were land applied (CalRecycle 2019d).

Reasonably Foreseeable Compliance Response

CalRecycle predicts that land application could account for approximately 2 percent of the organic waste to be redirected from landfills (see Table 2-2), beginning in 2025 and continuing thereafter. Some material from chipping and grinding facilities (see discussion under Section 2.5.3) is land applied.

2.5.6. Biomass Conversion Facilities

Background

“Biomass conversion” refers to the production of heat, fuels, or electricity by the controlled combustion of, or the use of other noncombustion thermal conversion technologies on, specific materials, when separated from other solid waste. Biomass conversion uses organic materials, such as wood, lawn and garden clippings, agricultural waste, leaves,

and tree prunings, to produce heat or electricity. Materials sent to qualifying biomass conversion facilities count as recovery. In accordance with SB 498 (Lara, Chapter 746, Statutes of 2014), the owner or operator of a biomass conversion facility is required to submit an annual report to CalRecycle detailing site operations for the prior year.

California has had a biomass-to-energy industry dating to the mid-1980s, when plants were constructed as an air pollution control strategy to reduce agricultural burning and recover energy from the state's forest industry. At one time, more than 60 biomass conversion facilities burned a mix of forestry wastes and agricultural wastes. Many composting facilities sent woody materials (whether excess feedstocks or overs) to biomass conversion facilities as a way to diversify markets and to generate revenue. In the 2010 organic waste recovery infrastructure survey, compost facilities sent almost 600,000 tons of material to biomass (about 10 percent of all products produced). In the 2019 survey, this number is down to 170,000 tons. From 2000 to 2017, the amount of urban woody wastes consumed by biomass facilities decreased by 1 million tons (CalRecycle 2019c).

This decline of the biomass industry is a result of a combination of factors. One is that the price utilities are willing to pay for mandated renewable power is below what it takes to operate a biomass conversion facility. Electricity from other renewable sources (e.g., solar, wind) is generally cheaper. These plants were initially financed using the avoided cost of natural gas as a standard by which utilities were charged for the electricity. As natural gas supplies increased, the prices plummeted, and other renewable electricity sources (solar, wind) became more financially attractive to the utilities, many of the biomass conversion facilities were closed as power purchase agreements were not renewed.

SB 859 (Chapter 368, Statutes of 2016) may facilitate biomass conversion facilities processing dead and dying trees in response to the tree mortality crisis in California. An estimated 345,000 tons of dead and dying trees are estimated to be processed in biomass conversion facilities under SB 859.

There are currently about 30 biomass conversion facilities (that combust solid fuels) in California, with a total generating capacity of about 640 megawatts (California Energy Commission 2019). The feedstocks for these plants include forestry wastes (13 percent), agricultural wastes (27 percent), mill residue (29 percent), and municipal wood waste from urban sources (31 percent) (CalRecycle 2019e).

Reasonably Foreseeable Compliance Response

CalRecycle anticipates that the proposed regulation would incrementally increase the amount of organic waste directed to biomass conversion facilities. CalRecycle predicts that biomass conversion would account for approximately 0.9 percent of the organic waste to be redirected from landfills (see Table 2-2), beginning in 2025 and continuing thereafter. It is not expected that the proposed regulation would result in the construction of any new biomass conversion facilities.

2.5.7. Food Waste Collection Programs and Processing Facilities

Background

Once collected, organic waste, like food and green material, is often sent to a MRF or transfer station prior to processing or may be sent directly to a processing facility. Some MRFs have installed depackaging machines (such as the one shown in Figure 2-7). Originally designed for industrial applications, depackaging equipment seeks to separate food from packaging material, such as steel, plastic, or cardboard.

The product from a depackager is typically a food slurry that can be sent either to AD (either stand-alone or at a WWTP) or to a composting facility. It does not produce a product that can be used without additional processing but rather separates food from packaging materials so that the organic component of the material can be used in subsequent processes.

Source: Scott Equipment 2016

Figure 2-7 Commercial Food Waste Depackaging Equipment

Reasonably Foreseeable Compliance Response

There are jurisdictions in California that collect green material weekly or biweekly. Collection of commercial green material is more generator-specific with businesses like landscapers or other large generators either having a weekly collection program or self-hauling the material. CalRecycle anticipates that the proposed regulation would drive most jurisdictions to implement residential curbside programs that collect food weekly with green waste.

Some jurisdictions have collected residential food waste since the late 1990s. Also, per AB 1826, jurisdictions have implemented mandatory commercial organics recycling programs since 2016 (except those that have a rural exemption). Separate collection

trucks often collect refuse, recyclables, or organic wastes. It is not known how many additional trucks or different types of routes would be required.

Jurisdictions would need to develop waste reduction programs to comply with the proposed regulation. Jurisdictions would need to determine which waste streams would be commingled—for example, whether food waste would be commingled with green material or collected separately. Clean, source-separated materials are more likely to have multiple options for processing.

If co-collection of food and green material becomes more common, then more feedstock would need contamination removal at a MRF or transfer station, and existing facilities would need upgrading. Few of the existing facilities include dedicated organic waste sort lines and equipment. Therefore, either new organic waste–dedicated transfer stations or upgrades to existing facilities would be a critical infrastructure need.

Managing contamination is a key component for establishing successful programs and facilities. Contamination reduction starts with robust outreach and education programs but always requires some sort of physical removal process, especially with food waste.

If a jurisdiction opts to send its food waste to a WWTP for co-digestion, the material would likely need to be first decontaminated at a transfer station or MRF or processed at a transfer/processing facility on site.

2.5.8. Food Recovery Programs

Background

Food waste comprises nearly 20 percent of California's disposal stream. The food recovery element of the proposed regulation targets the 2.8 million tons of food waste disposed of annually by the commercial sector. Pursuant to Article 10 of the proposed regulation, jurisdictions are required to implement an edible food recovery program that includes educating commercial edible food generators regarding food recovery, increasing access between commercial edible food generators and food recovery organizations and services, monitoring compliance, and increasing edible food recovery capacity if a jurisdiction does not have sufficient capacity to meet its edible food recovery needs.

The largest commercial edible food generators (Tier 1 generators, including supermarkets, grocery stores, food service providers, food distributers, and wholesale food vendors) are required to comply with the requirements of the proposed regulation by January 1, 2022, and the next largest group of generators (Tier 2 generators, including restaurants, hotels, hospitals, and large venues and events) are required to comply by January 1, 2024. The nearly 70,000 commercial edible food generators subject to SB 1383 would be required to maintain records indicating the types of food that are collected, the frequency of collection, and the pounds of food collected and transported per month. Food recovery services and organizations that receive edible food directly from commercial edible food generators are required to keep similar records.

The types of activities that commercial edible food generators are required to participate in include collecting and handling edible food that would be recovered by the food recovery organization or service, or potentially self-hauling their edible food to a food recovery organization that they have a documented arrangement with. Other activities that could potentially help commercial edible food generators with compliance include conducting staff trainings, developing food donation signage, establishing food recovery procedures for their operations, and purchasing equipment if needed (e.g., food donation bins, packing equipment, and cold storage).

State agencies and facilities that would have a compliance obligation for edible food recovery include public universities and colleges, hospitals, state correctional facilities, state parks districts, district agricultural associations (fairs), the California Department of General Services (because of its role in leasing and operating buildings), and the California Department of Rehabilitation (because of its role in overseeing cafeteria staffing and operation in public buildings). To obtain information about the costs associated with establishing a food recovery program at colleges and universities, CalRecycle surveyed college and university campuses with well-established food recovery programs. CalRecycle surveyed a University of California (UC) campus, a California State University, and a California community college. Based on stakeholder interviews and survey results, collecting edible food can be integrated into daily operations, and coordinating with a food recovery organization requires negligible additional time (e.g., the employee would collect the food either way, and it would be put in a container for a recovery organization).

CalRecycle's Food Waste Prevention and Rescue Grant Program, supported by California's cap-and-trade program, has helped and will potentially continue to help jurisdictions accomplish the food recovery goals of SB 1383. This program has funded projects that redistribute food to Californians in need.

Reasonably Foreseeable Compliance Response

CalRecycle anticipates that the proposed regulation would increase food recovery efforts statewide. Specifically, CalRecycle predicts that edible food recovery programs would account for approximately 2 percent of the organic waste to be redirected from landfills (see Table 2-2), beginning in 2025 and continuing thereafter.

2.5.9. Source Reduction

Background

Source reduction involves reducing the amount of waste that is generated. Source reduction efforts were initially mandated with the passage of AB 939, which required California jurisdictions to prepare and adopt a source reduction and recycling element (SRRE) that demonstrates how the jurisdiction would meet the AB 939 diversion mandates. AB 939 required that SRREs include a program for managing solid waste generated within the jurisdiction that is consistent with the following hierarchy: (1) source reduction, (2) recycling and composting, and (3) environmentally safe transformation and land disposal. Included in this hierarchy is the requirement to

emphasize and maximize the use of all feasible source reduction (Public Resources Code [PRC] Section 40051).

Source reduction efforts are expected to primarily be focused on paper waste prevention, green waste source reduction (e.g., xeriscaping is being expanded to address water conservation), food, and wood waste prevention. Paper waste prevention is the practice of reducing or eliminating paper use so that the potential for paper to be used inefficiently or disposed of is prevented in the first place. Printing paper on both sides of the sheet—rather than on one side—is a classic example of source reduction of paper waste because it can reduce the need for paper by up to 50 percent. Tracking food purchase history against food consumption to help ensure alignment of food supply and demand can lead to source reduction of food waste. In addition, businesses can identify foods and meals that are commonly wasted and scale back or eliminate these foods from their menus. This type of tracking is a natural extension of the record keeping and documentation requirements that apply to commercial generators subject to edible food recovery requirements. Further, the proposed regulation requires education related to waste prevention. This could lead to expansion of source reduction activities.

Prevention is the most environmentally preferable means to reduce waste. Waste prevention reduces the environmental effects associated with both manufacture and recycling.

Reasonably Foreseeable Compliance Response

CalRecycle anticipates that the proposed regulation would reinvigorate statewide source reduction efforts that reduce the amount of organic waste that is generated (e.g., a result of increased education). Specifically, CalRecycle predicts that source reduction programs could account for approximately 5 percent of the organic waste to be redirected from landfills (see Table 2-2), beginning in 2025 and continuing thereafter.

2.5.10. Emerging Technologies

Article 2 of the proposed regulation recognizes the potential role of yet-to-be defined new and emerging technologies that would recover organic waste and thereby reduce the generation of GHGs. CalRecycle estimates that an estimated 2 percent of the statewide organic waste stream would be directed to facilities with emerging technologies. It is speculative to anticipate the types of technologies that could be implemented or the related environmental effects associated with those technologies.

2.5.11. Animal Feed

Some industrial food processing residuals have been sent to commercial animal feed producers for decades, predominantly in California's Central Valley. Most of this food was the type of material not typically counted as part of the municipal waste stream. With the advent of aggressive recycling legislation, interest has increased in using food waste and green waste, such as grass clippings, and palm fronds for animal feed. Producing animal feed may involve using depackaging equipment and is regulated by CDFA.

2.5.12. Reporting and Monitoring

The proposed regulation would require solid waste facilities to conduct several reporting and monitoring activities. Transfer stations and landfills would be required to conduct waste evaluations, and transfer stations and composting/AD facilities would be required to monitor outgoing material contamination. These monitoring and reporting activities would help identify sources of contamination and inform education programs focused on reducing contamination levels.

2.5.13. Local Government Oversight

Local governments would be charged with overseeing many of the processes described above, including conducting capacity planning; procuring compost, electricity, RNG, and recyclable paper and paper products; coordinating new and expanded edible food recovery programs; and reporting to CalRecycle.

2.6. Potential Required Permits and Approvals

As facilities are proposed, site-specific permits and approvals may be needed. Table 2-4 lists the agencies that may need to be coordinated with and the potential permits or approvals that could be required for the development of certain organic waste recovery facilities.

Table 2-4 Potential Permits and Approvals for SB 1383 Organic Waste Recovery Facilities

Permitting/ Approval Agency	Permit/Approval	Relevance of Permit/Approval
Federal		
U.S. Army Corps of Engineers	Clean Water Act Section 404/Rivers and Harbors Act Section 10 Dredge and Fill Permit	Required for projects involving the discharge of dredge for fill material into waters of the United States, 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	Federal Endangered Species Act compliance	Required for projects affecting designated special-status anadromous fish species and critical habitat
National Marine Fisheries Service	Magnuson-Stevens Fishery Conservation and Management Act compliance	Required for projects affecting essential fish habitat

Permitting/ Approval Agency	Permit/Approval	Relevance of Permit/Approval
State		
Local enforcement agency (in conjunction with CalRecycle)[1]	Solid waste facility permit	Required to limit impacts on public health, safety, and the environment from the operation of solid waste facilities
California Department of Fish and Wildlife	California Fish and Game Code Section 1602 Streambed Alteration Agreement	Required for projects that would include activities affecting bed, bank, or channel of surface waters and adjacent riparian habitat
California Department of Fish and Wildlife	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 (Caltrans)	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
Regional		
Air districts	Authority to Construct	Required for projects involving construction, modifications, or operation of a facility or

[1] The processing of solid waste facility permits is administered by CalRecycle in conjunction with local enforcement agencies (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.

Permitting/ Approval Agency	Permit/Approval	Relevance of Permit/Approval
		equipment that may emit pollutants from a stationary source into the atmosphere; demonstrates compliance with local air district rules and regulations
Air districts	Permit to Operate	With few exceptions, required for projects that operate a facility that emits air pollutants
Regional water quality control boards	Clean Water Act Section 401 Water Quality Certification	Required for projects that affect wetlands or waters of the United States
Regional water quality control boards	National Pollutant Discharge Elimination System Construction Stormwater Permit	Required for projects involving more than 1 acre of ground disturbance; includes completion of a storm water pollution prevention plan for construction site stormwater management
Regional water quality control boards	General Order for Dewatering and Other Low-Threat Discharge to Surface Waters	Required for projects where construction may require local groundwater dewatering, resulting in discharges to surface water
Regional water quality control boards	General Waste Discharge Requirements for Composting Operations	General discharge requirements and water quality protection measures for aerobic composting operations that meet the sizing and feedstock limitations of the program
Regional water quality control boards	Waste discharge requirements	Project-specific discharge requirements for projects that do not meet the conditions of the composting general waste discharge requirements
Regional water quality control boards	General Permit for Stormwater Discharges Associated with Industrial Activities	General permit for stormwater discharges from industrial sites; this permit would likely be required for all new organic waste recovery facilities

Permitting/ Approval Agency	Permit/Approval	Relevance of Permit/Approval
Local		
Counties and cities	General plan/zoning amendment, conditional use permit, site plan review and approval, or similar land use approval	Required for projects that modify land uses under county or city land use codes
Counties and cities	Grading permit	Required for projects involving site grading
Counties and cities	Building permit	Required for projects involving permanent buildings
Counties and cities	Encroachment permit	Required for projects that involve temporary or permanent improvements within rights-of-way or easements managed by counties and cities
Local fire districts	Fire clearance	Required for most projects involving site improvements that have the potential to increase fire risk

Source: CalRecycle 2011; adapted by Ascent Environmental in 2019

2.7. Anticipated Benefits of Proposed Regulation

Organic wastes make up about 67 percent of the waste stream (CalRecycle 2015, 2019a). Redirecting organic waste from landfills and into beneficial uses in accordance with the proposed regulation is expected to result in environmental, public health, and economic benefits. CalRecycle has identified the following potential beneficial outcomes of the proposed regulation:

- Feeding the Hungry. Some of the currently landfilled organic waste is recoverable edible food that can provide food to millions of food-insecure people in California. The U.S. Department of Agriculture defines food insecurity as a household-level economic and social condition of limited or uncertain access to adequate food (USDA 2018). The overall food insecurity rate in California is nearly 13 percent, meaning that approximately one out of every eight Californians does not know where their next meal will come from. The rate for children is much higher; approximately one in five children in California may go to bed hungry each night (California Association of Food Banks 2017). This places California with the 19th highest child food insecurity rate in the nation. Edible food recovery programs resulting from the proposed regulation would increase the recovery of edible food for human consumption, resulting in decreased food insecurity and healthier communities.

- Creating Valuable Materials:
  - Soil Amendments. Soil amendments would result in sequestering carbon from the atmosphere, improving the health of agricultural soils including increased soil water holding capacity, preventing soil erosion, and reducing the need for synthetic fertilizers.
  - Biogas and Transportation Fuels. Anaerobic digestion of organic materials can support the State's efforts to obtain at least 50 percent of its electricity from renewable resources, aid in reducing the carbon intensity of transportation fuels, and displace fossil natural gas consumption. Biogas can be made into RNG that can be used in medium- and heavy-duty trucks in lieu of diesel fuel.
- Employment. Implementation of the proposed regulation would result in the development of new and/or expanded organic waste recovery facilities. The development of these facilities would generate new jobs in California.
- Health Benefits. According to the World Health Organization (WHO), SLCPs are GHGs that contribute to ambient levels of ozone and particulate matter less than or equal to 2.5 micrometers in diameter and are directly associated with heart and pulmonary disease, respiratory infections, and lung cancer (WHO 2019). WHO has noted that reducing GHG emissions might also provide health benefits, such as improved diets and more opportunities for safe travel and physical activity. The proposed regulation could also result in the reduced exposure of farmworkers to pesticides and fertilizers, the use of which can be reduced when compost is used in agricultural activities.
- Benefits to California Businesses. CalRecycle expects businesses to benefit in numerous ways, including but not limited to:
  - New job creation associated with organic materials collection and recycling.
  - Increased revenues from sales of products, including recycled-content paper, cardboard, compost, and renewable gas. For example, application of compost can help farmers improve soil health, reduce water use, and reduce use of pesticides and fertilizers, resulting in lower costs to produce higher yields of produce. Production of renewable gas can reduce reliance on foreign oil; one study estimates that existing organic waste could supply more than 15 percent of our current natural gas demand if converted to biogas (Southern California Gas Company 2016).
  - Increased revenues from sales of equipment.
  - Reduced landfill disposal collection costs.
  - Fewer lost workdays and increased productivity due to health benefits (e.g., reduced incidence of asthma, reduced exposure of farmworkers to pesticides and fertilizers), which may also help businesses improve recruitment and retention of workers.

- Increasing Soil Health. Adding compost to the California's soils is seen as a critical piece of increasing soil health, as well as sequestering carbon. Healthy soil is usually defined by an increase in soil organic matter, which is lost during cultivation. One of the main benefits of adding compost (or digestate) to soils is an increase in organic matter. In addition, emerging work at UC Berkeley and UC Davis seeks to quantity the carbon sequestration benefits of adding compost (or digestate) to working lands.

- Reducing GHG Emissions. Removing organic waste from landfills prevents the creation of methane from the anaerobic breakdown of the material. This methane can work its way out of the landfill as fugitive emissions, and these emissions currently represent 21 percent of the state's methane emissions annually. Achieving these waste reductions targets would reduce an increasing amount of GHG emissions, ultimately achieving annual reductions of at least 4 million metric tons of CO_2 equivalents ($MMTCO_2e$) annually by 2030. In addition, 1 year of waste reduction avoids 14 $MMTCO_2e$ of emissions over the lifetime of waste decomposition.

2.8. Relevant Background Material Information

The following specific documents have been prepared in support of the rulemaking process and provide the basis for the analysis in this EIR:

- *Initial Statement of Reasons (ISOR)*. The ISOR is a required element of the initial rulemaking documents that must be submitted to the Office of Administrative Law. It defines the problem addressed by and benefits of the regulation, as well as the specific purpose and necessity of the individual provisions of the regulation. The ISOR is available for review at CalRecycle's website: https://www.calrecycle.ca.gov/laws/rulemaking/slcp.

- Standard Regulatory Impact Assessment (SRIA), Proposed Regulation for Short-Lived Climate Pollutants: Organics Waste Methane Emissions. The SRIA is another required element of the initial rulemaking documents and is a component of the ISOR. The SRIA provides a statewide analysis of the potential costs and benefits of the regulatory requirements. It relies on projections of potential infrastructure scenarios that are consistent with the projections made in the SLCP Reduction Strategy adopted by CARB. The SRIA is available for review at CalRecycle's website: https://www.calrecycle.ca.gov/laws/rulemaking/slcp.

- *Proposed Regulation Text, SLCP: Organic Waste Reductions*. This document includes the text of the proposed organic waste reduction regulations to implement the organic waste landfill reduction requirements of SB 1383. The initial draft of the proposed regulation was published on January 18, 2019. A second draft of the proposed regulation was published on June 18, 2019. This document is available for review at CalRecycle's website: https://www.calrecycle.ca.gov/laws/rulemaking/slcp.

- *SB 1383 Infrastructure and Market Analysis*. This report presents the result of a comprehensive survey statewide survey of California's compost and AD

infrastructure, including the status of these facilities, types of feedstocks processed, existing and future processing capacity, the condition of markets for recovered organic products, and barriers to facility expansion. SB 1383 requires CalRecycle to analyze the progress that the waste sector, state government, and local governments have made in achieving the SB 1383 organic waste reduction goals no later than July 1, 2020, and the information in this report will be used in that 2020 Market Analysis Report. The report does not address edible food recovery capacity. It is available for review at CalRecycle's website: https://www2.calrecycle.ca.gov/Publications/Details/1652.

- *Composting in California, Addressing Air Quality Permitting and Regulatory Issues for Expanding Infrastructure.* The discussion paper reflects a collaborative effect between CARB, the California Air Pollution Control Officers Association (CAPCOA), the 35 air districts that CAPCOA represents, and CalRecycle to define the current state of composting in California, discuss the air quality and regulatory issues associated with siting new and expanded large-scale composting facilities in California, and find ways to overcome the challenges of building the necessary composting infrastructure to meet the requirements of SB 1383. The focus of the paper is on air permitting of composting facilities. This paper is available for review at CalRecycle's website: https://www2.calrecycle.ca.gov/PublicNotices/Details/2464.

- *Statewide Anaerobic Digester Facilities EIR*. CalRecycle prepared the 2011 Program EIR to assess the environmental effects that may result from adoption of an AD initiative, a comprehensive program to foster the development of AD facilities to process the organic fraction of MSW and other organic wastes throughout California. AD facilities addressed in the EIR include AD facilities that are located at existing or new permitted solid waste facilities or stand-alone AD facilities in areas zoned for industrial or solid waste–handling facilities. Dairy manure digesters, dairy manure co-digesters, and WWTP digesters were not addressed in the EIR. This EIR is available for review at CalRecycle's website: https://www.calrecycle.ca.gov/swfacilities/compostables/anaerobicdig.

- *2014 Disposal-Facility-Based Characterization of Waste Composition in California.* This report provides the basis for establishing the landfill disposal cap at about 5.7 million tons annually beginning in 2025 and continuing thereafter. It also provides information on the composition and recoverability of the state's waste stream. This report is available for review at CalRecycle's website: https://www2.calrecycle.ca.gov/WasteCharacterization/Study.

2.9. Relationship of SB 1383 to Other Recycling Mandates and Statewide Initiatives

This section describes the relationship of other statewide legislation to SB 1383:

- *SB 32 (Pavley, Chapter 249, Statutes of 2015).* SB 1383 builds upon California's leading commitments to reduce GHG emissions and air pollution statewide. Former Governor Brown identified reductions of SLCP emissions, including

methane emissions, as one of five key climate change strategy pillars necessary to meet California's target to reduce GHG emissions to 40 percent below 1990 levels by 2030 as established in SB 32.

- *SB 859 (Committee on Budget and Fiscal Review, Chapter 368, Statutes of 2016).* Legislators designed SB 859 to facilitate biomass conversion facilities processing dead and dying trees in response to the tree mortality crisis in California. However, although SB 859 did extend the lives of a few biomass conversion facilities by 5 years, it did not increase capacity for urban woody wastes.

  SB 859 expands the types of projects eligible for funding under CalRecycle's Greenhouse Gas Reduction Grant and Loan Programs. In addition, SB 859 requires (1) the Natural Resources Agency to establish a working group on expanding markets for woody biomass, (2) public utilities to procure energy from biomass facilities, and (3) CDFA to establish and oversee a Healthy Soils Program.

  SB 859 also requires publicly owned electric utilities to procure 125 megawatts of bioenergy per year from existing bioenergy plants beginning in December 2016, with a financial commitment of at least 5 years. At least 80 percent of the feedstock of an eligible facility is to be from forest feedstock, including dead and dying trees removed from specified hazard zones.

- *SB 1016 (Wiggins, Chapter 343, Status of 2008), Per Capita Disposal Rate.* In 2007, SB 1016 changed the State's AB 939 goal measurement system from a calculated diversion rate to a per capita disposal calculation. The new disposal-based targets uses only two factors—a jurisdiction's population (or, in some cases, employment) and its disposal as reported by disposal facilities—to in part determine compliance with AB 939's diversion mandates. The other part of the compliance determination includes a review of a jurisdiction's diversion program implementation efforts and consideration of extenuating circumstances that may hinder goal achievement.

- *AB 341 (Chesbro, Chapter 476, Statutes of 2011).* AB 341 requires jurisdictions to offer commercial and organic waste recovery services to businesses but does not require local jurisdictions to undertake enforcement to verify that generators use the service. SB 1383 also supports California's efforts to achieve the statewide 75-percent recycling goal by 2020 established by AB 341.

- *AB 876 (McCarty, Chapter 593, Statutes of 2015).* Article 11 of the proposed regulation specifies the requirements of jurisdictions related to organic waste recovery capacity planning, edible food recovery capacity, and the schedule for reporting by jurisdictions for the two. Article 11 expands on information that counties and regional agencies are required to report regarding long-term planning for organic waste recovery infrastructure, pursuant to AB 876. CalRecycle analyzed the data submitted in local jurisdiction annual reports (required to demonstrate program implementation and compliance with AB 939

diversion goals) submitted in August 2017 pursuant to AB 876 and concluded that the existing process does not include many key stakeholders and cannot provide a full and accurate picture of future organic waste processing and recovery capacity needed to meet the requirements of SB 1383.

- *AB 939 (Sher, Chapter 1095, Statutes of 1985).* SB 1383 is notably different from AB 939 in several ways. First, SB 1383 expressly prohibits CalRecycle from imposing the 50-percent and 75-percent organic waste reduction targets on individual jurisdictions, whereas AB 939 mandated each jurisdiction in the state to redirect 50 percent of its solid waste from landfills and allowed each jurisdiction to select and design its own program to meet their diversion targets.

  The SB 1383 reduction mandate is tied to a 2014 baseline that effectively caps organic waste disposal at no more than 25 percent of the amount of organic waste disposed of in 2014 (about 5.7 million tons) on and after 2025. This creates a target that would become increasingly more difficult to achieve as population increases through the years. The AB 939 mandate, by comparison, requires diversion of only 50 percent of waste generated annually, which allows flexibility for the diversion target to contract or expand with generation and allows for increasing amounts of disposal (CalRecycle 2018b:6).

  AB 939's 50-percent mandate necessitated redirecting about 24 million tons of solid waste, but in most instances, much of the targeted material was paper, glass, and plastic material that was easier to recycle—both in terms of collecting and processing and in terms of finding ready overseas markets. In contrast, organic materials (particularly putrescible organic waste, such as food waste) are much harder to collect, process, and clean to market expectations, and markets for them must be primarily domestic (exceptions are fibers) due to the weight and bulk of the materials (CalRecycle 2018b:6).

  The SB 1383 mandate is not singularly tied to tonnage. The organic waste reduction targets must comply with the methane reduction mandate of the SLCP Reduction Strategy. This additional environmental metric requires CalRecycle to monitor the end uses of organic waste. This departs from the mechanics of AB 939's landfill diversion mandate, which is essentially agnostic to non-landfill end uses. Accordingly, CalRecycle (in consultation with CARB, pursuant to the statute) has developed a regulatory approach that requires jurisdictions and other regulated entities to implement a broader and more prescriptive suite of programs to achieve the statute's statewide mandates (CalRecycle 2018b:6).

  Finally, there is a substantial contrast regarding timeframes. The timeframe for achieving AB 939's goal was a decade, but it actually took about 15 years to achieve the 50-percent diversion mandate on a statewide basis. SB 1383 has a shorter timeframe of 9 years to achieve the more difficult 75-percent organic waste target and 20-percent edible food recovery target.

  AB 939 includes a mandated jurisdiction annual reporting cycle. These jurisdictions currently are composed of 419 reporting entities consisting of

California's incorporated cities, unincorporated counties, and CalRecycle-approved regional agencies designed to meet AB 939 Integrated Waste Management Act requirements. The jurisdiction is a mechanism by which CalRecycle can monitor jurisdiction compliance with legislation (such as AB 876 and AB 1826) adopted since the passage of AB 939.

- *AB 1045 (Irwin, Chapter 596, Statuses of 2015).* Permitting a solid waste or organic MRF in California is a challenging undertaking, with multiple entities making many decisions at the local and state levels. In accordance with AB 1045, State agencies are collaborating to provide relief and evaluate and resolve constraints in the planning, siting, and permitting process for organic waste facilities and to promote composting and facility development.

- *AB 1594 (Williams, Chapter 719, Statutes of 2014).* AB 1594 phases out counting green material used as landfill ADC as diversion from disposal. Instead, green material used as ADC is instead considered disposal in terms of measuring a jurisdiction's annual 50-percent per capita disposal rate in accordance with AB 939.

  Many composters are wary of contaminants in collected food waste and are concerned about the marketability of compost products produced from food waste feedstock. Compost facilities usually strain out contaminants (like plastic) from finished compost, and those contaminants end up in overs that are used as ADC.

  With SB 1383's stricter contamination standards, and a decrease in demand of materials used as ADC at landfills due to the passage of AB 1594, composting facilities are faced with the challenge of managing contamination in feedstock material.

- *AB 1826 (Chesbro, Chapter 727, Statutes of 2014).* AB 1826 established mandatory commercial organic waste recycling for businesses that generate eight or more cubic yards of organic waste per week by April 1, 2016; four or more cubic yards of organic waste per week by January 1, 2017; four or more cubic yards of solid waste per week by January 1, 2019; and two or more cubic yards of solid waste per week by January 1, 2020, if statewide disposal of organic waste is not decreased by one half. CalRecycle will determine in early 2020 whether the threshold of 2 cubic yards or more of solid waste per week threshold is required.

  As with AB 341, AB 1826 requires jurisdictions to offer commercial and organic waste recovery services to businesses but does not require local jurisdictions to undertake enforcement to confirm that generators use the service. SB 1383 would strengthen the implementation of mandatory commercial organic waste recycling established in AB 1826.

- *California's Healthy Soils Initiative.* The Health Soils Initiative is a collaboration of State agencies and departments, led by CDFA, to promote the development of healthy soils on California's farmlands and ranchlands. Healthy soils reduce

GHG emissions (a primary objective of SB 1383) but also improve crop yields, drought and flood tolerance, and air and water quality and reduce water demand. The grant-funding Healthy Soils Program offers agricultural producers financial incentives to adopt GHG-reducing soil health practices, such as compost and mulch application.

3. Environmental Impacts and Mitigation Measures

Approach to the Environmental Analysis

This draft environmental impact report (Draft EIR) evaluates and discloses the environmental impacts associated with the proposed regulation, in accordance with CEQA (PRC Section 21000, et seq.) and the State CEQA Guidelines (14 CCR Section 15000, et seq.). Sections 3.1 through 3.15 of this Draft EIR present a discussion of the regulatory background, existing conditions, environmental impacts associated with construction and operation of reasonably foreseeable compliance responses to the proposed regulation, mitigation measures to reduce the level of impact, and residual level of significance (i.e., after application of mitigation, including impacts that would remain significant and unavoidable after application of all feasible mitigation measures). Issues evaluated in these sections consist of the environmental topics identified for review in the notice of preparation prepared for the project. Chapter 4 of this Draft EIR, "Cumulative Impacts," presents an analysis of the project's impacts considered together with other past, present, and probable future projects producing related impacts, as required by Section 15130 of the State CEQA Guidelines. Chapter 5, "Alternatives," presents a reasonable range of alternatives and evaluates the environmental effects of those alternatives relative to the proposed project, as required by Section 15126.6 of the State CEQA Guidelines. Chapter 6, "Other CEQA Considerations," includes an analysis of the project's growth inducing impacts, as required by Section 21100(b)(5) of CEQA.

Sections 3.1 through 3.15 of this Draft EIR each include the following components.

Regulatory Background: 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.

Existing Conditions: This subsection presents the existing environmental conditions of the project site and in the surrounding area 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 covers the State of California, where the reasonably foreseeable compliance responses associated with the proposed regulation would include physical changes to the environment.

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 the propose regulation.

Where an existing law, regulation, or permit specifies mandatory and prescriptive actions about how to fulfill the regulatory requirement as part of the project definition, leaving 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, performance standards without prescriptive actions to accomplish them, or other requirements that allow substantial discretion in how the they are accomplished, or have a 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 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 regulation (e.g., construction of new facilities), it is expected that during project-level environmental review, many impacts identified in this EIR can be avoided or reduced to a less-than-significant level by local land use and/or permitting authorities or through permit conditions enforced by the LEAs. However, some mitigation measures are not within the jurisdiction of CalRecycle or LEAs, and it is unknown if local entities would adopt necessary mitigation measures. If mitigation measures are the responsibility of local entities, other than an LEA, a potentially significant or significant impact is designated for CEQA purposes to be significant and unavoidable, even though a local entity may adopt mitigation measures. This approach fulfills disclosure requirements under CEQA.

Scope of EIR 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 3.15 provide resource-specific discussions of environmental impacts and mitigation measures that can reduce significant environmental effects.

Impacts 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 (PRC 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

OAL requires preparation of a SRIA for major proposed State regulations (1 CCR Section 2002). The purpose of a SRIA is to evaluate the economic effects on the proposed regulation. Based on the analysis included in the SRIA, between 2019 and 2030, employment in the waste sector, including with implementation of the proposed regulation, is projected to increase initially at over 8,000 jobs, growing by nearly 17,000 jobs at peak construction phase in 2024, and settle at a permanent increase of over 11,000 new jobs. If these changes are viewed as percent changes over business as usual, the changes are 0.04 to 0.07 percent and therefore are minor in the overall economy (CalRecycle 2018). 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, to determine appropriate locations for new facilities. 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.

Public Services

Public services, for the purposes of CEQA, pertains to fire protection, police protection, schools, parks, or other similar types of facilities. Implementing the proposed regulation is not expected to result in substantial population growth, as discussed above under "Population and Housing." Because the proposed regulation would not generate substantial increases in population, there would not be substantial demand placed on existing public services such that new facilities would need to be developed. Because there would be no substantial effects on the ability to affect performance objectives related to fire protection, police protection, schools, parks, or other facilities, there would be no impacts on public services.

Recreation

Implementing the proposed regulation is not expected to result in substantial population growth, as discussed above under “Population and Housing.” Because the proposed regulation 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 proposed regulation does not include recreational facilities or require the construction or expansion of recreational facilities. Thus, there would be no impacts on recreation.

Resource Areas Analyzed in Greater Detail

The following resource areas are analyzed in greater detail in this chapter:

- 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;
- transportation;
- utilities and service systems; and
- wildfire.

3.1. Aesthetics

This section provides a description of existing visual conditions—that is, the physical features that make up the visible landscape—near potential locations of future facilities built in response to the proposed regulation, as well as an assessment of changes to those conditions that would occur from project implementation. The effects of the project on the visual environment are generally defined in terms of the project's physical characteristics and potential visibility, the extent to which the project's presence would change the perceived visual character and quality of the environment from publicly accessible viewpoints, and the expected level of sensitivity that the viewing public may have where the project would alter existing views. The "Methodology" section below provides further detail on the approach used in this evaluation.

No comments received on the notice of preparation were related to aesthetics.

3.1.1. Regulatory Setting

Federal

No federal plans, policies, regulations, or laws related to aesthetics are applicable to the proposed regulation.

State

California State Scenic Highway Program

Created by the California Legislature in 1963, the California Scenic Highway Program preserves and protects areas of natural scenic beauty of State highways and adjacent corridors. A highway may be designated as scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the travelers' enjoyment of the view (Caltrans 2017).

For a highway to be officially designated as a scenic resource, the local city or county must adopt a scenic corridor protection program and apply to the California Department of Transportation (Caltrans) for official designation (Caltrans 2017). Without official designation and the attendant scenic corridor protection program, development and other activities can degrade scenic value despite the highway's "eligible" designation. Thus, the fact that a highway was at one time deemed eligible for the scenic highway designation does not mean that it retains its original scenic value. Implementation of future facilities under the proposed regulation would require compliance with this program if a new or expanded facility would occur adjacent to a State scenic highway.

California Coastal Act

The California Coastal Act (PRC Section 30000 et seq.) includes specific policies that address issues such as shoreline public access and recreation, terrestrial and marine habitat protection, visual resources, landform alteration, agricultural lands, water quality, transportation, development design, and public works. The California Coastal Commission partners with local municipalities, such as cities and counties, to plan and

regulate the use of land and water in the coastal zone (as defined in PRC Section 30103). “Coastal zone” is defined by the act (PRC Section 30103) as follows:

> “Coastal zone” means that land and water area of the State of California from the Oregon border to the border of the Republic of Mexico, specified on the maps identified and set forth in Section 17 of that chapter of the Statutes of the 1975-76 Regular Session enacting this division, extending 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. In significant coastal estuarine, habitat, and recreational areas it extends inland to the first major ridgeline paralleling the sea or five 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.

Development within the coastal zone would require a coastal permit from the California Coastal Commission or from the local jurisdiction if the activity is within a local coastal program (as defined in PRC Section 30106). “Development” is defined by the act (PRC Section 30106) as follows:

> “Development” means, on land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land, including, but not limited to, subdivision pursuant to the Subdivision Map Act (commencing with Section 66410 of the Government Code), and any other division of land, including lot splits, except where the land division is brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility; and the removal or harvesting of major vegetation other than for agricultural purposes, kelp harvesting, and timber operations which are in accordance with a timber harvesting plan submitted pursuant to the provisions of the Z’berg-Nejedly Forest Practice Act of 1973 (commencing with Section 4511).

As used in this section, “structure” includes, but is not limited to, any building, road, pipe, flume, conduit, siphon, aqueduct, telephone line, and electrical power transmission and distribution line.

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 aesthetic resources may include general plan policies and ordinances protective of these resources. This EIR assumes that the reasonably foreseeable compliance responses

associated with implementation of SB 1383 would be consistent with local plans, policies, and ordinances to the extent that anticipated organic waste handling facilities are subject to them, because local land use and permit approvals are typically conditioned upon such consistency.

3.1.2. Environmental Setting

The proposed regulation would result in new or expanded organic waste handling facilities located in multiple counties throughout the state, within rural or urban locations, and in a variety of landscapes that present a wide assortment of visual conditions. Such conditions range from areas having few landforms or structures and little vegetation that would limit viewing distances (such as those found in large expanses of farmland or open spaces); to forested areas where trees and other vegetation limit viewing distances; to areas with a heterogeneous mix of development, open space, vegetation, and topography that may or may not limit viewing distances (such as in suburban communities, foothills, and Coast Ranges valleys). Implementation of the proposed regulation could also result in new or expanded organic waste processing facilities in urban areas, such as the development of community-scale compost and edible food recovery facility operational expansion and development.

Visual Landscape

The visual character of California varies greatly depending on topography and climate with a number of distinct types of landscapes with varying levels of development. The foothills form a transitional landform from the valley floor to the higher Sierra Nevada, Cascade Range, and Coast Ranges. The valley floor is cut by two rivers that flow west out of the Sierra Nevada and east out of the Coast Ranges. Irrigated agricultural land is the primary landscape in the Sacramento and San Joaquin Valleys, and the foothill landscape has been altered by grazing, mining, reservoir development, and residential and commercial development. The visual character of the state also varies dramatically from the north, which is dominated by forestlands, and the south, which is primarily residential and commercial development.

Agricultural areas are typified by broad, open agricultural fields, including dairies, cropland, vineyards, orchards, and grazing land. Typical elements include farm structures and equipment and scattered rural residences.

Undeveloped natural areas include expanses of valleys, foothills, mountains, deserts, forests, wetlands, and coastal resources, among others, that are not used for agriculture. Some natural open space areas are designated as federal, State, or local parklands or recreation areas.

Urban/developed areas are typical for incorporated areas within California. These areas include existing commercial, industrial, public, and residential uses.

Urban transition or urban fringe areas, located on the edge of urban development, provide a buffer between urban and agricultural or open space uses. Transitional land

uses on the edge of urban fringe areas may include commercial, industrial, or public uses compatible with agricultural or open space uses.

Potentially sensitive receptors near project sites could include residents and travelers on adjacent roadways. Only publicly accessible viewpoints are relevant under the State CEQA Guidelines.

Scenic Views and Vistas

A scenic view is a high-quality visual environment experienced beyond an observer's immediate surroundings. Scenic views are often available along trails and roads. For a hiker or roadway traveler, a scenic view would include not only the trail or road, but also the terrain immediately surrounding the trail or road.

Scenic vistas are broad, long-range scenic views that can be described as panoramic and having exceptional landscape-scale scenic quality. Sometimes, scenic vistas are recognized by public agencies through designation with protective policies in land management plans or placement of special destinations for viewers, such as an elevated vista point.

State Scenic Highways

A highway may be designated scenic under California's Scenic Highway Program depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the travelers' enjoyment of the view. This corridor protection program does not preclude development but seeks to encourage development that does not degrade the scenic value of the corridor. Scenic highways are identified as either eligible for listing or officially designated. Caltrans's Scenic Highway Program identifies more than 60 officially designated scenic routes throughout California (Figure 3.1-1).

Light and Glare Conditions

For the purposes of this analysis, "light" refers to unnatural nighttime lighting, which may intrude into sky darkness when added to an area that currently contains little or no artificial lighting (also known as light pollution). "Glare" refers to unnatural light or reflected natural light that can be annoying or distracting. Lighting and glare levels tend to be much lower in undeveloped areas of the state, particularly because these areas are located further from developed areas. Throughout the state, lighting and glare are generally lower near large expanses of agricultural land, open spaces in the foothills and mountains, and forested areas. Urban areas contain varied light sources, such as streetlights and car headlights, and in more urbanized areas, sky glow—an areawide illumination of the night sky from human-made light sources—may be present.

Source: Compiled by Ascent Environmental based on data obtained from Caltrans in 2019

Figure 3.1-1 State Scenic Highways

3.1.3. Environmental Impacts and Mitigation Measures

Methodology

When evaluating the impacts of developing new or expanded organic waste handling facilities on the visual environment, the focus is on three overarching parameters: existing visual conditions; how these would be altered by implementing a project under the proposed regulation; 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. 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 State scenic highway or 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.

Thresholds of Significance

An aesthetics impact would be significant if implementation of the proposed regulation 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;
- substantially degrade the existing visual character or quality of public views of the site and its surroundings in nonurbanized areas;
- conflict with applicable zoning and other regulations governing scenic quality in urbanized areas; or
- create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Issues Not Discussed Further

No issues related to aesthetics are dismissed from the analysis.

Environmental Impacts and Mitigation Measures

Impact 3.1-1: Short-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 Construction of Facilities in Response to the Proposed Regulation

Varying degrees of temporary degradation of public views would result during construction of facilities in response to the proposed regulation. Although there is uncertainty regarding the location of these facilities, construction activities and equipment associated with new facilities or modifications to existing facilities could introduce or increase the presence of visible artificial elements in areas of scenic importance, such as areas visible from State scenic highways. This impact would be **potentially significant**.

Reasonably foreseeable compliance responses that could result from implementation of the proposed regulation could involve the development of new or expanded organic waste handling facilities, including compost facilities that would convert organic wastes into a soil amendment (which could involve site grading and construction of compost pads, aerated static piles (ASPs), and small outbuildings for material storage and on-site staff); AD facilities that would convert organic wastes into biogas (which may include electricity generator sets, biogas storage tanks and compression and cleaning equipment, aboveground pipeline systems, transmission poles and wires, and vehicle fueling stations); recycling facilities (which could include new industrial/MRF-type buildings or processing equipment that would handle recoverable paper); mobile, standalone, or co-located chip and grind facilities for processing material (which could involve site grading and small outbuildings or trailers); biomass conversion facilities (which could involve types of equipment and construction similar to those associated with an AD facility); and edible food recovery facility operational expansion and development (which could include new or reuse of existing buildings or warehouses to support the collection, storage, preparation, and distribution of edible food). It is anticipated that most organic waste handling facilities implemented in response to the proposed regulation 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 are more likely to be located in urban areas.

Construction activities could require the presence of heavy-duty equipment, vegetation removal, and grading. Although there is uncertainty regarding the location of these facilities, construction of organic waste handling facilities could introduce or increase the presence of visible artificial elements in areas of scenic importance, such as areas visible from State scenic highways. These activities could result in varying degrees of temporary degradation of public views.

The new and expanded facilities would be constructed in different locations throughout the state in areas governed by various local jurisdictions that are not subject to the

regulatory authority of CalRecycle related to aesthetics. Thus, the lead agency, CalRecycle, does not have the authority to require future projects built in response to the proposed regulation to reduce potential construction-related impacts on aesthetics. Therefore, 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 in response to the proposed regulation would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.1-1: Implement Aesthetic Resource Protection Measures during Construction of New or Modified Facilities in Response to the Proposed Regulation

As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant construction-related aesthetics impacts. Mitigation measures to reduce construction-related aesthetics impacts can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.

The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on aesthetic resources:

- Proponents of new facilities constructed as a result of reasonably foreseeable compliance responses would coordinate with State or local land use agencies to seek entitlements for development. This process would involve the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must follow all applicable environmental regulations as part of approval of a development project.
- Project proponents would implement all feasible mitigation identified during the environmental review to reduce or substantially lessen the potentially significant aesthetic impacts of the project. Actions may include equipment storage siting during construction within a property, daily clean-up of the construction site, and temporary fencing to prevent views of construction areas.
- To the extent feasible, the sites selected for use as construction staging and laydown areas would be areas that are already disturbed or are in locations of low visual sensitivity. Where feasible, construction staging and laydown areas for equipment, personal vehicles, and material storage would be sited to take advantage of natural screening opportunities provided by existing structures, topography, and vegetation. Temporary visual screens would be used where helpful if existing landscape features would not screen views of the areas.
- All construction and maintenance areas would be kept clean and tidy, areas where construction materials and equipment are stored would be screened from

view or be located in areas generally not visible to the public, and disturbed soil would be revegetated, where feasible.

- To the greatest extent feasible, alteration of the visual setting of important scenic landscape features, areas in a setting for observation from State scenic highways, national or state historic sites, public trails, and cultural resources will be avoided when siting projects and their associated elements.

Significance after Mitigation

Mitigation Measure 3.1-2 would reduce aesthetic impacts because project design features, such as storage siting and selection of construction laydown areas, would be incorporated to reduce impacts on scenic vistas, visual character, or quality of public views of scenic resources associated with a State scenic highway. However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, this EIR discloses, for CEQA-compliance purposes, that short-term, construction-related aesthetic impacts resulting from the development of new facilities associated with the proposed regulation could be **potentially 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 Facilities in Response to the Proposed Regulation

Implementation of the proposed regulation would result in operation of new or modified organic waste handling and processing facilities at or near existing facilities or in urban areas zoned for industrial or solid waste handling facilities. The new or modified facilities would be similar in visual character to other nearby industrial or solid waste facilities. Thus, operations at these facilities would not substantially degrade the character or quality of public views.

Long-term effects on aesthetics could occur from operation of new or modified facilities in response to the proposed regulation. New organic waste recovery and processing facilities that are located in agricultural or other areas not previously developed for solid waste, agricultural, or wastewater treatment facilities could degrade public views from a scenic vista, degrade the visual character or quality of public views of the site, or disrupt views from a State scenic highway. The long-term operational impacts on scenic vistas, visual character, or quality of public views or on scenic resources in a State scenic highway associated with operation of facilities in response to the proposed regulation would be **potentially significant**.

Reasonably foreseeable compliance responses that could result from implementation of the proposed regulation could involve the operation of new or expanded organic waste handling facilities, including operation of compost facilities that convert organic wastes into a soil amendment; AD facilities that would convert organic wastes into biogas (which may include electricity generator sets, biogas storage tanks and compression and cleaning equipment, aboveground pipeline systems, transmission poles and wires, and vehicle fueling stations); changes to or operation of new recycling facilities (which could include operations at new industrial/MRF-type buildings or use of processing equipment that would handle recoverable paper); mobile, standalone, or co-located chip and grind facilities for processing material (which could involve the periodic relocation of mobile chip and grind operations); biomass conversion facilities (which could involve use of types of equipment and construction similar to those associated with an AD facility); and operation of edible food recovery programs (which could include additional food collection vehicles and operation at new or reuse of existing buildings or warehouses to support the collection, storage, preparation, and distribution of edible food). It is anticipated that most organic waste recovery facilities 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 are more likely to be located in urban areas.

Modifications and improvements at existing buildings would not result in operational changes that would substantially change the overall character of those facilities and the surrounding area. Furthermore, new or modified facilities in urban areas would be located in areas zoned for industrial or solid waste handling facilities and would be similar in visual character to other nearby industrial or solid waste facilities. Implementation of the proposed regulation would increase the amount of green material and/or wood waste that is processed and used for direct land application on agricultural lands. However, an increase in the application of processed green material on agricultural lands would not substantially change the overall character of those existing facilities or the surrounding area because the material is similar in appearance to the existing land surface.

Most of the new organic waste handling facilities would be located near the market for the products generated by organic material processing operations (such as materials for land application on farmland). The presence of new or expanded compost, AD, or other organic waste handling facilities in agricultural areas that are generally flat and contain row crops would introduce a vertical element that would be uncharacteristic of the surrounding area. For example, anaerobic digesters and related equipment include large, metal-sided buildings and other structures, such as generator sets, fueling stations, and compression equipment. These types of equipment and structures can be characterized as having an industrial appearance. The structure of anaerobic digesters could conceivably introduce or increase the presence of visible artificial elements in areas of scenic importance, such as areas visible from State scenic highways. The tanks that enclose wet digester processes can be large to hold substantial processed

feedstock. These tanks have the potential to degrade the visual character or quality of areas without existing facilities of this scale.

Compost windrows and ASP composting operations appear as piles of earthen material. Windrows are generally arranged in multiple, long rows that can range from 8 to 20 feet wide and up to 10 feet tall. ASPs associated with a composting facility are generally smaller than windrows and may have perforated pipes extending into them along the ground. The visual impact of such development would depend on several variables, including the type and size of facilities, presence of ancillary facilities, distance and angle of view, visual prominence, and placement in the landscape. New compost windrows or ASPs and associated facilities located in agricultural or undeveloped areas not previously developed for other solid waste, agricultural, or wastewater treatment facilities could degrade public views from a scenic vista or the visual character or quality of public views of the site or disrupt views from a State scenic highway.

The new or expanded organic waste handling facilities would operate in different locations throughout the state in areas governed by various local jurisdictions that are not subject to the regulatory authority of CalRecycle related to aesthetics. Thus, the lead agency, CalRecycle, does not have the authority to require future projects built in response to the proposed regulation to reduce potential operational impacts on aesthetics. Therefore, 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 Aesthetic Resource Protection Measures during Operation of New or Modified Facilities in Response to the Proposed Regulation

Consideration of a project's long-term aesthetic effects is typically subject to the purview of a local jurisdiction, based on its planning policies, ordinances, and/or design guidelines. Conditions of approval in a solid waste facility permit would not extend to regulating aesthetic impacts on a scenic vista, visual character, or quality of public view on scenic resources in a State scenic highway system. Site-specific, project impacts and mitigation measures would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.

The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on aesthetic resources:

- Proponents of new facilities constructed as a result of reasonably foreseeable compliance responses would coordinate with State or local land use agencies to seek entitlements for development. This process would involve the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must follow all applicable environmental regulations as part of approval of a development project.

- All feasible mitigation identified during the environmental review to reduce or substantially lessen the potentially significant scenic or aesthetic impacts of the project would be implemented. Actions may include facility or equipment siting within a property, visual screening by vegetation, fencing or walls to prevent views of operating areas, exterior paint colors that blend with landscapes, and lowest feasible height of visible equipment and structures.
- The color and finish of the surfaces of all project structures and buildings visible to the public would be carried out to (1) minimize visual intrusion and contrast by blending with the landscape and (2) comply with local design policies and ordinances. The project proponent would submit a surface treatment plan to the lead agency for review and approval.
- All operation and maintenance areas would be kept clean and tidy, areas where construction materials and equipment are stored would be screened from view or located in areas generally not visible to the public, and disturbed soil would be revegetated, where feasible.

Significance after Mitigation

Mitigation Measure 3.1-2 would reduce aesthetic impacts because project design features, such as visual screening, building surface types, and landscape designs would be selected and implemented to reduce impacts on scenic vistas, visual character, or quality of public views or on scenic resources. However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs. The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, this EIR discloses, for CEQA compliance purposes, that long-term operational scenic impacts resulting from the development of new or modified facilities associated with the proposed regulation could be **potentially significant and unavoidable**.

Impact 3.1-3: Conflicts with Applicable Zoning and Other Regulations Governing Scenic Quality

New or expanded organic waste handling facilities developed in response to the proposed regulation would either be co-located at or near existing solid waste facilities or at new standalone site in areas zoned for industrial or solid waste–handling facilities; it is more likely that new facilities would be co-located at existing solid waste–handling facilities in urbanized areas. Edible food recovery and community-scale composting facilities are likely to be located in urban areas. Existing solid waste–handling facilities are largely located in areas zoned for such uses, such as an industrial or solid waste zoning category that takes into account the scenic character of such uses. Facilities associated with future compliance responses would result in a **less-than-significant** impact related to conflicts with applicable zoning and other regulations governing scenic quality.

CalRecycle estimates that new or modified organic waste facilities sited in urban areas would potentially be co-located at or located near existing landfills, transfer stations, MRFs, wastewater treatment plants, and composting facilities or would be standalone facilities. It is more likely that new facilities would be co-located at existing solid waste–handling facilities in urbanized areas. Edible food recovery and community-scale composting facilities are likely to be located in urban areas. The existing solid waste–handling facilities are located in areas that are zoned for such uses, such as an industrial zone. Zoning for industrial or solid waste uses accounts for the scenic qualities and characteristics of such uses, which generally are not valued as scenic resources or for having high scenic quality. Implementation of the proposed regulation in urban areas would undergo individual project-level review and approval with local jurisdictions having land use authority. For these reasons, future projects would not conflict with applicable zoning or other regulations governing scenic quality in urbanized areas. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.1-4: Temporary or Permanent New Sources of Substantial Light or Glare That Would Adversely Affect Day or Nighttime 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 new or expanded organic waste handling facilities developed in response to the proposed regulation. 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 or modified facilities in rural areas could include infrastructure containing reflective surfaces and could require safety lighting that would be noticeable in those areas. Implementation of the proposed project would result in **potentially significant** impacts related to permanent new sources of substantial light or glare that would adversely affect day or nighttime views in areas near specific organic waste handling facilities.

New sources of light are created by adding light to existing nighttime lighting conditions. The addition of light sources is particularly noticeable in rural areas where ambient light levels are low. New sources of nighttime lighting could be more noticeable to residents outside of communities in rural areas because there is less existing light pollution in those areas and therefore lower levels of nighttime ambient light.

Glare could potentially occur during construction of new or expanded organic waste handling facilities, such as AD facilities and any associated biogas infrastructure, chip and grind facilities, and new buildings or warehouses to support the collection, storage, preparation, and distribution of edible food if reflective construction materials were positioned in highly visible locations where the reflection of sunlight could occur. However, any glare would be temporary and short term, given the movement of construction equipment and materials within the construction area, and the effect on surrounding areas would be anticipated to be negligible. In addition, surfaces that are

large enough and flat enough to generate substantial glare are typically not an element of construction activities. Construction of these facilities would likely not require 24-hour construction and, thus, would not result in new sources of nighttime lighting.

Project operations at new or expanded organic waste handling facilities, including compost facilities, AD facilities that would convert organic wastes into biogas, recycling facilities, chip and grind facilities, and food recovery facilities, may require the use of permanent outdoor lighting during low-light conditions or security lighting at night. Additionally, depending on the types of materials used, facility operation may introduce substantial sources of glare from metal-sided buildings, such as those that may be used for some anaerobic digesters. This may be a source of concern in light-sensitive areas (such as areas near observatories, residences, or roads or in rural locations). Additionally, flares from biogas processing may be visible, particularly at night.

The new facilities would be constructed and would operate in different locations throughout the state in areas governed by various local jurisdictions that are not subject to the regulatory authority of CalRecycle related to aesthetics. Thus, the lead agency, CalRecycle, does not have the authority to require future projects built in response to the proposed regulation to reduce potential operational impacts related to light and glare. Therefore, facilities constructed in response to the proposed regulation would have a **potentially significant** impact related to new sources of substantial light or glare associated with facility operations that would adversely affect day or nighttime views in areas near project sites.

Mitigation Measure 3.1-4: Implement Light and Glare Reduction Measures during Operation of New or Modified Facilities in Response to the Proposed Regulation

Consideration of a project's long-term aesthetic effects is typically subject to the purview of a local jurisdiction, based on its planning policies, ordinances, and/or design guidelines. Conditions of approval in a solid waste facility permit would not extend to regulating issues such as the potential for new sources of light and glare to affect day or nighttime views. Site-specific, project impacts and mitigation measures would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.

The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize light and glare impacts:

- Proponents of new facilities constructed as a result of reasonably foreseeable compliance responses would coordinate with State or local land use agencies to seek entitlements for development. This process would involve the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must follow all applicable environmental regulations as part of approval of a development project.
- All feasible mitigation identified during the environmental review to reduce or substantially lessen the potentially significant light and glare impacts of the

project would be implemented. Actions may include low-height lighting design, window glazing design, or minimized reflective surfaces.

- The color and finish of the surfaces of all project structures and buildings visible to the public would be carried out to (1) minimize glare and (2) comply with local design policies and ordinances. The project proponent would submit a surface treatment plan to the lead agency for review and approval.
- The project proponent would contact the lead agency to discuss the documentation required in a lighting mitigation plan, submit to the lead agency a plan describing the measures that demonstrate compliance with lighting requirements, and notify the lead agency that the lighting has been completed and is ready for inspection.

Significance after Mitigation

Mitigation Measure 3.1-4 would reduce aesthetic impacts because project design features, such as lighting and building surface types, would be selected to reduce light and glare effects. However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, this EIR discloses, for CEQA compliance purposes, that long-term operational glare and nighttime lighting impacts resulting from the development of new or modified facilities associated with the proposed regulation could be **potentially significant and unavoidable**.

This page intentionally left blank.

3.2. Agricultural and Forestry Resources

This section evaluates the potential agricultural and forest resource impacts of the proposed regulation. The existing agricultural and forest resource characteristics are described, and the relationship between the proposed regulation and existing plans and policies are addressed. The potential loss of agricultural and forest resources is also addressed.

Comments were received on the notice of preparation related to the impact on agricultural land and the use of chip and grind materials, mulch, and compost.

3.2.1. Regulatory Setting

Federal

No federal laws or regulations related to agricultural and forest resources are applicable to the proposed regulation.

State

California Public Resources Code

"Forestland" is defined in PRC Section 12220(g) as:

> land that can support 10 percent 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.

"Timberland" is defined in PRC Section 4526 as:

> land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of any 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 after consultation with the district committees and others.

"Timberland Production Zone" (TPZ) is defined in California Government Code Section 51104(g) as:

> an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h). With respect to the general plans of cities and counties, "timberland preserve zone" means "timberland production zone."

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's) Farmland Mapping and Monitoring Program (FMMP). Authority for the FMMP comes from California Government Code Section 65570(b) and PRC Section 612. California Government Code Section 65570(b) requires 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.

California Land Conservation Act of 1965

The California Land Conservation Act of 1965, or the 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.

Z'berg-Nejedly Forest Practice Act

The Z'berg-Nejedly Forest Practice Act 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 act 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.

Timberland Productivity Act

The Timberland Productivity Act represents the California Legislature's declared intent "to fully realize the productive potential of the forest resources and timberlands of the state." The act imposes mandatory restrictions on parcels zoned for timberland production. Such parcels "shall be zoned so as to restrict their use to growing and harvesting timber and to compatible uses" (California Government Code Section 51115). In exchange, property owners are required to pay property taxes on the land based solely on its value for timber harvest and not for its development potential, as is the case with qualifying agricultural and open space lands under the Williamson Act (discussed above). California Government Code Section 51104(g) defines "timberland production zone" as an area that has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber or for growing and harvesting timber and compatible uses. Compatible uses are defined under Section 51104(h) and include management for watershed; management for habitat or hunting and fishing; access roads and staging areas for timber harvesting; gas, electric, water, or communication transmission facilities; grazing; or a residence or other structure necessary for timber management.

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 agricultural and forest resources may include general plan policies and ordinances protective of these resources. This EIR assumes that the reasonably foreseeable compliance responses associated with implementation of SB 1383 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.

3.2.2. Environmental Setting

Farmland Classifications

Farmland Mapping and Monitoring Program Agricultural Classifications

The FMMP prepares maps and statistical data for analyzing land use impacts on California's agricultural resources. It categorizes agricultural production potential 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 FMMP updates the agricultural data and maps for each county every 2 years. The most recent update occurred in 2016. Table 3.2-1 identifies the acreages of each farmland type located throughout the state and is organized by county. The farmland classifications under the FMMP are as follows:

- **Prime Farmland:** land that has the best combination of features for the production of agricultural crops. There are more than 3.8 million acres of Prime Farmland throughout the state.
- **Unique Farmland:** land of lesser quality soils used for the production of the state's leading agricultural cash crops. There are more than 1.3 million acres of Unique Farmland throughout the state.
- **Farmland of Statewide Importance:** land other than Prime Farmland that has a good combination of physical and chemical features for the production of agricultural crops but that has more limitations than Prime Farmland, such as greater slopes or less ability to store soil moisture. There are more than 2.5 million acres of Farmland of Statewide Importance throughout the state.
- **Farmland of Local Importance:** land of importance to the local agricultural economy. There are more than 2.7 million acres of Farmland of Local Importance throughout the state.
- **Grazing Land:** existing vegetation that is suitable for grazing. There are more than 18.6 acres of Grazing Land throughout the state.

Table 3.2-1 Farmland Throughout the State by County (acres)

County[1]	Prime Farmland	Unique Farmland	Farmland of Statewide Importance	Farmland of Local Importance	Grazing Land
Alameda	3,392	2,154	1,128	0	240,986
Amador	2,824	3,396	1,419	2,299	188,116
Butte	192,562	23,278	21,598	0	400,164
Colusa	199,520	118,180	2,859	226,526	15,834
Contra Costa	26,332	3,393	7,733	60,415	157,701
El Dorado	608	3,142	804	59,282	195,201
Fresno	675,720	94,901	397,133	180,896	822,697
Glenn	158,116	18,029	88,669	28,475	227,081
Imperial	190,205	2,070	297,272	38,924	0
Kern	158,116	91,323	209,483	0	1,849,266
Kings	110,915	18,920	339,022	0	338,242
Lake	10,085	11,662	917	23,261	240,207
Los Angeles	22,613	962	770	3,044	239,038
Madera	1	180,292	85,206	8,750	386,729
Marin	5	279	138	62,861	89,454
Mariposa	5	109	15	0	401,955
Mendocino	18,130	7,626	1,288	0	1,928,565
Merced	269,243	115,234	154,209	61,670	552,632
Modoc	75,576	16,538	42,082	253,857	711,317
Monterey	165,516	26,356	44,508	0	1,063,919
Napa	30,618	16,802	9,593	18,326	179,202
Nevada	290	463	1,282	6,042	133,507
Orange	2,391	2,915	410	0	37,114
Placer	7,431	18,784	4,097	94,733	30,267
Riverside	117,485	32,566	43,757	226,030	110,202
Sacramento	90,691	15,541	43,340	57,910	153,174
San Benito	26,835	2,412	7,108	17,158	618,327
San Bernardino	11,323	2,738	5,770	561	898,633
San Diego	5,669	43,618	8,075	155,566	127,138
San Joaquin	381,631	81,921	82,618	63,817	129,760

County[1]	Prime Farmland	Unique Farmland	Farmland of Statewide Importance	Farmland of Local Importance	Grazing Land
San Luis Obispo	41,189	45,175	22,698	57,969	1,189,168
San Mateo	1,946	2,149	140	716	49,123
Santa Barbara	66,979	37,325	13,195	8,951	579,054
Santa Clara	14,910	2,227	3,274	5,582	394,060
Santa Cruz	13,437	3,521	2,335	251	19,302
Shasta	10,490	492	2,662	5,365	414,181
Sierra County	5,334	2,423	5,291	95,328	79,982
Siskiyou	71,456	36,487	25,800	622,840	391,546
Solano	130,843	10,347	6,674	0	208,189
Sonoma	29,859	34,042	17,482	79,914	415,429
Stanislaus	249,964	116,212	33,172	26,028	404,404
Sutter	161,105	16,093	103,981	0	54,460
Tehama	63,443	22,063	19,716	127,402	1,545,804
Tulare	366,137	11,692	322,353	134,109	439,934
Ventura	40,975	28,950	32,992	15,590	197,859
Yolo	250,558	46,095	19,527	22,386	166,413
Yuba	39,324	33,355	10,882	0	140,186
Total	**3,836,688**	**1,312,492**	**2,544,476**	**2,731,222**	**18,675,717**

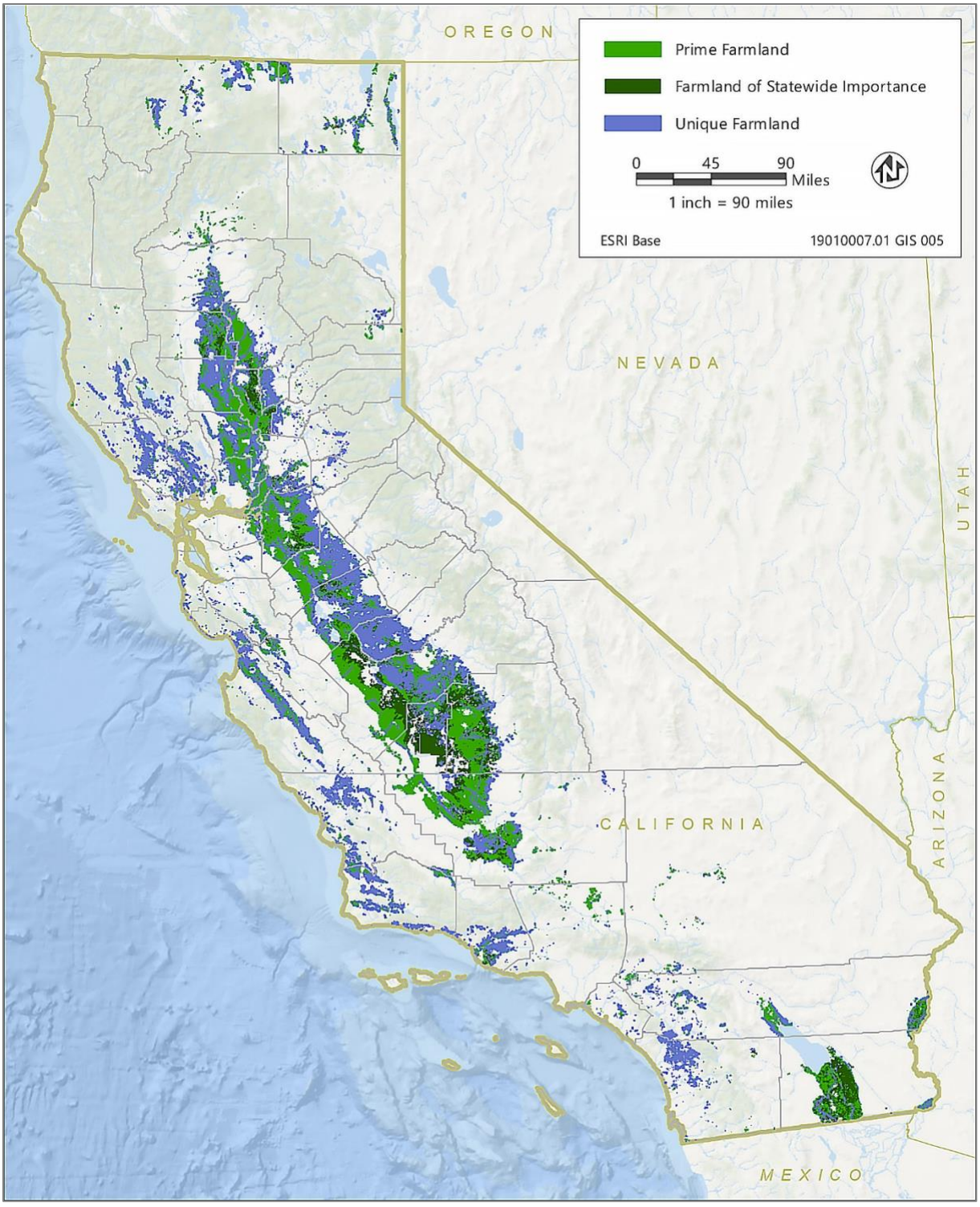
1. The latest FMMP data for Alpine, Calaveras, Del Norte, Humboldt, Inyo, Lassen, Mono, Plumas, San Francisco, Trinity, and Tuolumne Counties were not available.

Source: Compiled by Ascent Environmental from data provided by DOC in 2019

Figure 3.2-1 shows the distribution and extent of mapped Prime Farmland, Unique Farmland, and Farmland of Statewide Importance (those farmland classifications addressed in the State CEQA Guidelines Appendix G environmental checklist) throughout the state.

Williamson Act Farmland Classifications

The California Land Conservation Act (Williamson Act) recognizes the importance of agricultural land and includes provisions to protect and ensure the orderly conversion of agricultural land. The Williamson Act allows a property owner to commit, via contract with the county, to not developing a subject property in exchange for a guarantee that the property will be taxed at agricultural values under minimum 10-year rolling term contracts. The contracts may be cancelled to allow a limited number of public uses, such as open space and natural resource conservation, and a cancellation fee may



Source: Compiled by Ascent Environmental based on data obtained from Department of Conservation in 2019

Figure 3.2-1 Prime Farmland, Unique Farmland, and Farmland of Statewide Importance in California

apply. The process for exiting the contracts involves nonrenewal, which takes place over a 9-year period. According to DOC's 2016 Status Report, more than 14 million acres of land were enrolled under Williamson Act Contract throughout the state in 2015 (DOC 2016). 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 three 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 uses, such as grazing or nonirrigated 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 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.

Forest and Timberland in California

California has approximately 33 million acres of forestland. Federal agencies, including the U.S. Forest Service, U.S. Bureau of Land Management, and National Park Service, own and manage 19 million acres (57 percent). State and local agencies and entities, including the California Department of Forestry and Fire Protection, park and water districts, and land trusts, own and manage approximately 990,000 acres (3 percent). The remaining 13 million acres (40 percent) is owned and managed by private landowners, Native American tribes, and private companies (University of California, Division of Agriculture and Natural Resources 2019).

Timberland (forest available for and capable of growing a crop of trees for commercial purposes) within California occupies approximately 9 million acres (55.5 percent) under federal ownership, 141,057 acres (0.8 percent) under State and local ownership, and 7 million acres (43.7 percent) under private ownership (CDFW 2019). About 5.3 million acres of timberland in the state are located in designated TPZs (CAL FIRE 2018).

3.2.3. Environmental Impacts and Mitigation Measures

Methodology

The analysis of environmental impacts on agricultural and forest resources focuses on the potential for conversion of farmland to nonagricultural uses; conversion of forestland or timberland to nonforest uses; and conflicts with forestland, timberland, and TPZ zoning.

Thresholds of Significance

An impact on agricultural and forest resources would be significant if implementation of the proposed regulation would:

- convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (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, forestland (as defined in PRC Section 12220[g]), timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production (as defined by California Government Code Section 51104[g]);
- result in the loss of forestland or conversion of forestland to nonforest use; or
- involve other changes in the existing environment that, because of their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forestland to nonforest use.

Issues Not Discussed Further

No issues related to agricultural and forest resources are dismissed from analysis.

Environmental Impacts and Mitigation Measures

Impact 3.2-1: Conversion of Farmland to Nonagricultural Use or Conflict with a Williamson Act Contract or Zoning for Agricultural Use

Construction and operation of new or modified organic waste recovery facilities 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 are not known. 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**.

As shown above in Section 3.2.2, more than 7.6 million acres of land in the state are categorized as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland (Farmland) (see Table 3.2-1 and Figure 3.2-1). Most of this Farmland is located in the Sacramento and San Joaquin Valleys. The size of the state is greater than 101 million acres (including lakes, reservoirs, and waterways). Farmland makes up approximately 8 percent of the state.

Because edible food recovery facilities and community-scale composting facilities are more likely to be located in urban areas, they would not be located in areas containing Farmland, lands under Williamson Act contract, or lands zoned for agricultural use.

It is anticipated that most organic waste recovery facilities 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. Many landfills and other solid waste–handling facilities are located outside of urban areas and could be located in industrial areas or areas that contain agricultural uses and Farmland.

The reasonably foreseeable compliance responses that could result from implementation of the proposed regulation could involve the development of new or expanded organic waste recovery facilities, including compost facilities that would convert organic wastes into a soil amendment (which could involve site grading and construction of compost pads, aerated static piles, and small outbuildings for material storage and on-site staff); anaerobic digesters that would convert organic wastes into biogas (which may include electricity generator sets, biogas storage tanks and compression and cleaning equipment, aboveground pipeline systems, transmission poles and wires, and vehicle fueling stations); recycling facilities (which could include new industrial/MRF-type buildings and/or processing equipment that would handle recoverable paper); mobile, standalone, or co-located chip and grind facilities for

processing material (which could involve site grading and small outbuildings or trailers); and biomass conversion facilities (which could involve similar types of equipment and construction as an anaerobic digester facility).

Construction activities associated with new or modified organic waste facilities built in response to the proposed regulation could include developing temporary facilities, such as staging areas, access roads, or work areas that could be located on Farmland or lands zoned for agricultural use, or lands under a Williamson Act contract. Construction activities could also include installation of temporary site fencing and signage; soil and vegetation removal; excavation and grading activities; and dust abatement in staging areas, on access roads, and on construction sites. Some of these areas may be returned to agricultural uses after completion of construction; however, temporary conversion of Farmland or conflicts with agricultural zoning or Williamson Act contracts could be substantial depending on the amount of land used for construction and the duration of construction activities. Additionally, unless topsoil is restored to preconstruction conditions and the affected area is replanted to the extent feasible, these construction activities could also result in a substantial long-term or permanent conversion of Farmland or conflicts with agricultural zoning or Williamson Act lands.

The presence of new or modified organic waste recovery facilities throughout agricultural areas of the state could permanently convert Farmland to nonagricultural use, conflict with agricultural zoning, and conflict with Williamson Act contracts. The location of new or expanded organic waste recovery facilities could preclude the future use of the site of those facilities for agricultural uses. These facilities would vary in size and, thus, would have varying degrees of impact on the conversion of Farmland to nonagricultural use. For example, as described in Chapter 2, “Project Description,” a compost facility with aerated static piles can have a smaller footprint than a compost facility with windrows.

Locations of these new or modified facilities could be on or next to land that is zoned for agricultural use or is under a Williamson Act contract. The location of a new or expansion of an existing organic waste recovery facility could preclude farming on a parcel that is under a Williamson Act contract, conflicting with the contract. Furthermore, future facilities developed in response to the proposed regulation could result in conflicts with Williamson Act contracts if organic waste recovery facilities are not a permitted use under the contracts. Similarly, these facilities could result in conflicts with agricultural zoning if organic waste recovery facilities are not an allowable use in the agricultural zone of a local jurisdiction.

The zoning code of some individual cities and counties throughout the state may consider organic waste recovery and processing systems compatible uses in areas zoned for agricultural uses. For example, agriculturally oriented services are allowed with approval of a conditional use permit in agricultural zones in Madera County (Section 18.53.020 of the Madera County Code of Ordinances). Section 18.04.025 of the Madera County Code defines “agriculturally oriented services” as including “agricultural by-product processing,” which is processing by facilities “engaged in the manufacturing, processing, or conversion of agricultural by-products to other products where a minimum of sixty percent of all source material needed for the process is

comprised of agricultural by-products, as determined by the planning director." Because it is possible that not all organic waste recovery facilities built in response to the proposed regulation would be considered permitted uses in all agricultural zoned areas or in areas under Williamson Act contract throughout the state, it is reasonable to assume that implementation of the proposed regulation could conflict with existing zoning for agricultural use or a Williamson Act contract.

Construction and operation of new or modified organic waste recovery facilities could result in significant temporary, long-term, or permanent conversion of Farmland and conflicts with Williamson Act contracts and agricultural zoning. However, the specific locations and scale of possible future facilities are not known. Therefore, the precise scale of conversion of agricultural land and conflicts with agricultural zoning or Williamson Act contracts cannot be determined at this time. Factors necessary to identify specific impacts include project location, design features, and size, as well as presence of Farmland, Williamson Act contract status, and agricultural zoning. Because there could be substantial conversion of Farmland and conflicts with agricultural zoning and Williamson Act contracts, this impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.2-1: Implement Agricultural Resource Protection Measures during Construction and Operation of New or Modified Facilities Built in Response to the Proposed Regulation

As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant impacts related to the location of specific facilities, including those on agricultural lands. Mitigation measures to reduce impacts on agricultural lands can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.

The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on agricultural resources:

- Proponents of new facilities constructed as a result of reasonably foreseeable compliance responses would coordinate with local or State land use agencies to seek entitlements for development. This process would involve the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must comply with all applicable regulations as part of approval of a development project.
- Project proponents would implement all feasible mitigation identified during the environmental review to reduce or substantially lessen the potentially significant environmental impacts of the project. Examples of types of mitigation to protect Farmland include:

- Designing proposed projects to minimize, to the greatest extent feasible, the loss of the highest value Farmland; or
- For projects that will result in permanent conversion of Farmland, preserve in perpetuity other Farmland through acquisition of an agricultural conservation easement, or contributing funds to a land trust or other entity qualified to preserve Farmland in perpetuity (at a target ratio of 1:1, depending on the nature of the conversion and the characteristics of the Farmland to be converted, to compensate for permanent loss).

- Any mitigation specifically required for a new or modified facility would be determined by the local lead agency, and future environmental documents by local and State lead agencies should include analysis of:
  - avoidance of lands designated as Important Farmland as defined by the FMMP, and
  - the feasibility of using farmland that is not designated as Important Farmland before deciding on the conversion of Important Farmland.
- The feasibility, proximity, and value of the proposed project sites should be balanced before a decision is made to locate a facility on land designated as Important Farmland.
- Any action resulting in the conversion of Important Farmland should consider mitigation for the loss of such farmland. Any such mitigation should be completed before a grading or building permit is issued by providing the permitting agency with written evidence that the mitigation has been implemented. Mitigation may include but would not be limited to:
  - permanent preservation of off-site Important Farmland (State-defined Prime Farmland, Farmland of Statewide Importance, and Unique Farmland) of equal or better agricultural quality, at a ratio of at least 1:1 (preservation may include the purchase of agricultural conservation easement[s], purchase of credits from an established agricultural farmland mitigation bank, and contribution of agricultural land or equivalent funding to an organization that provides for the preservation of farmland toward the ultimate purchase of an agricultural conservation easement), and
  - participation in any agricultural land mitigation program, including programs maintained by local governments that provide equal or more effective mitigation than the measures listed.

Significance after Mitigation

Mitigation Measure 3.2-1 would reduce potentially significant impacts to agricultural resources because plans would be incorporated into project design to minimize conversion of Farmland to other uses and compensation would be sought for

permanent loss of Farmland. However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, this EIR discloses, for CEQA-compliance purposes, that agricultural and forest resources impacts associated with the proposed regulation could be **potentially significant and unavoidable**.

Impact 3.2-2: Conflict with Existing Zoning for Forestland, Timberland, or Timberland Zoned Timberland Production or Loss of Forestland from Conversion to Nonforest Use

Construction and operation of new or modified organic waste recovery facilities could result in significant temporary or permanent conversion of forestland or timberland and could conflict with zoning for forestland, timberland, or lands zoned as TPZ. The specific locations and scale of possible future facilities are not currently known; thus, the precise scale of conversion of forestland or timberland and conflicts with zoning cannot be determined at this time. Because there could be substantial conversion of forestland and timberland and conflicts with TPZ zoning, this impact would be **potentially significant**.

As discussed in Section 3.2.2, “Environmental Setting,” the state contains approximately 33 million acres of forestland, 9 million acres of timberland, and 5.3 million acres in TPZs. Most of the areas of the state containing the most forest and timberland resources and TPZs are generally located outside of urban areas in the foothills, Coast Ranges, Sierra Nevada, and northern portion of the state.

Because edible food recovery facilities and community-scale composting facilities are more likely to be located in urban areas, they would not be located in areas containing forestland, timberland, or lands zoned for timber production.

It is anticipated that most organic waste recovery facilities 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. Many landfills and wastewater treatment plants are located outside of urban areas or in industrial areas.

Implementation of the proposed regulation would most likely result in the development of new facilities or modification of existing facilities near markets that have demand for byproducts of new or modified organic waste recovery facilities. For example, new or modified compost facilities would likely be located near agricultural areas where compost may be used. However, it is possible that a small number of new or modified organic waste recovery facilities could be located in areas of the state containing forest and timberland resources.

The compliance responses to the proposed regulation that would most likely be located in areas containing forest resources include chip and grind facilities. Additionally, expansion or modification of existing transfer stations or MRFs in areas of the state containing forest resources to process additional organic waste is also a reasonably foreseeable response to the proposed regulation. Wastewater treatment plants in those areas could also expand their operations to include an anaerobic digester or expand an existing anaerobic digester facility.

The exact locations of future facilities developed in response to the proposed regulation are unknown; thus, it is possible that those facilities could be sited in areas containing forestland or timberland and zoned for forestland, timberland, or timberland production. Construction-related activities could include developing temporary facilities, such as staging areas, on forestland. Tree removal from forestland might occur as a result of these construction activities to facilitate construction staging areas or work areas. The construction and operation of new or modified organic waste recovery facilities in such areas would require the removal of trees and would convert the land to nonforest use.

Unless forestland, timberland, or TPZs temporarily disturbed during project construction are replanted or otherwise restored to preconstruction conditions to the extent feasible, a substantial impact on forestland, timberland, or TPZs or a conflict with existing zoning for forestland, timberland, or timberland zoned Timberland Production at or surrounding the construction sites might occur.

Construction and operation of new or modified organic waste recovery facilities could result in significant temporary or permanent conversion of forestland or timberland and could conflict with zoning for forestland, timberland, or lands zoned for timber production. However, the specific locations and scale of possible future facilities are not known. Therefore, the precise scale of conversion of forestland or timberland and conflicts with zoning cannot be determined at this time. Factors necessary to identify specific impacts include project location, design features, and size, as well as presence of forestland, timberland, and TPZs. Because there could be substantial conversion of forestland and timberland and conflicts with TPZ zoning, this impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.2-2: Implement Forest Resource Protection Measures during Construction and Operation of New or Modified Facilities Built in Response to the Proposed Regulation

As described in Section 1.2, “Purpose of this EIR,” the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant impacts related to the location of specific facilities, including those on forestland or timberland. Mitigation measures to reduce impacts on forestland and timberland can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project’s local review process. A proposed

project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.

The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on forestland and timberland:

- Proponents of new facilities constructed as a result of reasonably foreseeable compliance responses would coordinate with local or State land use agencies to seek entitlements for development. This process would involve the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must comply with all applicable regulations as part of approval of a development project.
- Project proponents would implement all feasible mitigation identified during the environmental review to reduce or substantially lessen the potentially significant environmental impacts of the project. Examples of types of mitigation to protect Farmland include:
    - Avoid land protected as forestland and timberland through site selection or project design. Where feasible, project proponents should take into account the value of the forest, not only in terms of direct products, such as wood, but also as part of the watershed ecosystem, when selecting a project site. Wherever possible, nonprotected sites should be preferred and selected instead of protected sites; and
    - For projects that would result in permanent conversion of forestland, other forestland would be preserved in perpetuity through a conservation easement or by acquiring lands or contributing funds to a land trust or other agency (at a target ratio of 1:1, depending on the nature of the conversion and the characteristics of the forestland to be converted, to compensate for permanent loss).

Significance after Mitigation

Mitigation Measure 3.2-2 would reduce potentially significant impacts to forest resources because plans would be incorporated into project design to minimize adverse effects on forest land and compensation for permanent conversion would be acquired. However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, this EIR discloses, for CEQA-compliance purposes, that forestland and timberland impacts associated with the proposed regulation could be **potentially significant and unavoidable**.

Impact 3.2-3: Changes in the Existing Environment That, Because of Their Location or Nature, Indirectly Result in Conversion of Farmland to Nonagricultural Use or Conversion of Forestland to Nonforest Use

Construction of new or modified organic waste facilities built in response to the proposed regulation 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 forestland to nonforest use. The specific locations and scale of possible future facilities are not known; thus, the precise extent and nature of indirect conversion of forestland and Farmland from construction activities cannot be identified at this time. Because there could be substantial indirect conversion of Farmland and forestland from implementation of the proposed regulation, this impact would be **potentially significant**.

Construction activities associated with new or modified organic waste recovery facilities built in response to the proposed regulation could result in activities that negatively affect the viability of surrounding agricultural or forest uses, that impede access to agricultural areas, or that disrupt agricultural infrastructure. These activities could therefore indirectly convert Farmland to nonagricultural use or forestland to nonforest use. Ground-disturbing activities, removal of existing vegetation, and the use of construction equipment on project sites near Farmland or forestland could result in dust generation (discussed in Section 3.3, “Air Quality”) or the spread of invasive species to new areas (discussed in Section 3.5, “Biological Resources”), which could affect the viability of surrounding agricultural or forest uses. It is reasonable to expect that some actions implemented in response to the proposed regulation might be large enough to indirectly convert large areas of Farmland to nonagricultural uses or convert forestland to nonforest uses.

Operations would be limited to the footprint created during construction of new or modified organic waste recovery facilities built in response to the proposed regulation and would be unlikely to result in indirect conversion of forestland to nonforest use or Farmland to nonagricultural use. For example, routine maintenance or repairs of electricity generator sets, biogas storage tanks and compression and cleaning equipment, aboveground pipeline systems, transmission poles and wires, and vehicle fueling stations associated with anaerobic digesters and biomass conversion facilities would occur within the footprint of those facilities and would likely not be of sufficient scale or duration to convert Farmland or forestland.

Construction of new or modified organic waste facilities built in response to the proposed regulation 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 forestland to nonforest use. However, the specific locations and scale of possible future facilities are not known. Therefore, the precise extent and nature of indirect conversion of forestland and Farmland from construction activities cannot be identified at this time. Factors necessary to identify specific impacts include project location, types of construction activities, design

features, and size, as well as the presence of Farmland and forestland. Because there could be substantial indirect conversion of Farmland and forestland, this impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.2-3: Implement Agricultural and Forest Resource Protection Measures during Construction and Operation of New or Modified Facilities Built in Response to the Proposed Regulation

As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant impacts related to the location of specific facilities, including those on agricultural and forest lands. Mitigation measures to reduce impacts on agricultural and forest resources can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.

The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on agricultural and forest resources:

- Proponents of new facilities constructed as a result of reasonably foreseeable compliance response would coordinate with local or State land use agencies to seek entitlements for development. This process would involve the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must comply with all applicable regulations as part of approval of a development project.
- Project proponents would implement all feasible mitigation identified during the environmental review to reduce or substantially lessen the potentially significant environmental impacts of the project. Examples of types of mitigation to protect Farmland and forest resources include:
    - Designing proposed projects to minimize, to the greatest extent feasible, the loss of the highest value Farmland;
    - For projects that will result in permanent conversion of Farmland, preserve in perpetuity other Farmland through acquisition of an agricultural conservation easement, or contributing funds to a land trust or other entity qualified to preserve Farmland in perpetuity (at a target ratio of 1:1, depending on the nature of the conversion and the characteristics of the Farmland to be converted, to compensate for permanent loss);
    - Avoid land protected as forestland and timberland through site selection or project design. Where feasible, project proponents should take into account the value of the forest, not only in terms of direct products, such as wood, but also as part of the watershed ecosystem, when selecting a project site.

Wherever possible, nonprotected sites should be preferred and selected instead of protected sites; and

  - For projects that would result in permanent conversion of forestland, other forestland would be preserved in perpetuity through a conservation easement or by acquiring lands or contributing funds to a land trust or other agency (at a target ratio of 1:1, depending on the nature of the conversion and the characteristics of the forestland to be converted, to compensate for permanent loss).

- Project proponents would comply with local plans, policies, ordinances, rules, and regulations regarding air quality–related emissions and associated exposure (e.g., construction-related fugitive particulate matter [PM] dust regulations, indirect source review, and payment into off-site mitigation funds).
- For projects located in PM nonattainment areas, project proponents shall prepare and comply with a dust abatement plan that addresses emissions of fugitive dust during construction and operation of the project.
- An invasive species management plan would be developed and implemented for any project the construction or operation of which could lead to the introduction or facilitation of invasive species establishment. The plan would ensure that invasive plant species and populations are kept below preconstruction abundance and distribution levels.

Significance after Mitigation

Mitigation Measure 3.2-3 would reduce potentially significant impacts to agricultural and forest resources because plans would be incorporated into project design to minimize adverse effects on Farmland and forest land. However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, this EIR discloses, for CEQA-compliance purposes, that agricultural and forest resources impacts associated with the proposed regulation could be **potentially significant and unavoidable**.

3.3. Air Quality

This section includes a discussion of existing air quality conditions, a summary of applicable regulations, and an analysis of potential construction and operational air quality impacts caused by reasonably foreseeable compliance actions in response to the SB 1383 Regulations (proposed regulation. Mitigation is provided to reduce significant air quality impacts to the extent feasible.

Scoping comments received in response to the Notice of Preparation provided direction that any potential regional or local air quality impacts should be mitigated to less-than-significant levels. A baseline emissions inventory at existing landfills was also requested to compare regulation-based emissions. Other comments included recommendations on methodologies to use in the analysis, mitigation, and citations of existing data. Commenters also requested that the EIR evaluate the potential for increased vehicle miles traveled (VMT) and related mobile source emissions related to the proposed regulation.

3.3.1. Regulatory Setting

Air quality in California is regulated through the efforts of various federal, State, regional, 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 air basins 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. The most recent major amendments were made by Congress in 1990. EPA's air quality efforts address both criteria air pollutants and hazardous air pollutants (HAPs). EPA regulations concerning criteria air pollutants and HAPs are presented in greater detail below.

Criteria Air Pollutants

The CAA required EPA to establish national ambient air quality standards (NAAQS) for six common air pollutants found all over the United States referred to as criteria air pollutants. EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide, respirable particulate matter (particulate matter with an aerodynamic diameter of 10 micrometers or less) (PM_{10}) and fine particulate matter (particulate matter with an 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 nonattainment

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. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and stationary air pollution sources in the air basin.

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 (1300 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

Pollutant	Averaging Time	California (CAAQS)[a, b]	National (NAAQS)[c] Primary[b, d]	National (NAAQS)[c] Secondary[b, e]
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 standards	No national standards
Sulfates	24-hour	25 µg/m^3	No national standards	No national standards
Vinyl chloride [f]	24-hour	0.01 ppm (26 µg/m^3)	No national standards	No national standards
Visibility-reducing particulate matter	8-hour	Extinction of 0.23 per km	No national standards	No national standards

Notes: µg/m^3 = micrograms per cubic meter; km = kilometers; ppb = parts per billion; ppm = parts per million.

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 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

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 1. The $PM_{2.5}$ 24-hour standard is attained when 98 percent of the daily concentrations,

averaged over 3 years, are equal to or less than the standard. Contact the U.S. Environmental Protection Agency 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 the 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.

Source: CARB 2016

Hazardous Air Pollutants and Toxic Air Contaminants

Toxic air contaminants (TACs), or in federal parlance, HAPs, are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A TAC is defined as an air pollutant 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, their high toxicity or health risk 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 generally are 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, running nose, throat pain, and headaches.

For evaluation purposes, TACs are separated into carcinogens and noncarcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. This contrasts with criteria air 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.

Odors

Odors as a category of emissions are not a CAA pollutant; however, the CAA regulates ammonia, which is a source of odor and contributes to fine particulate formation.

State

California Air Resources Board

The 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).

Criteria Air Pollutants

CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing PM, and the above-mentioned criteria air 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 all local air districts in the state endeavor to attain and maintain the CAAQS by the earliest date practical. It specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources. The CCAA also provides air districts with the authority to regulate indirect sources.

In 2017, CARB adopted the SLCP Reduction Strategy pursuant to SB 1383, which required CARB to develop a strategy to reduce emissions of SLCPs (methane, fluorinated gases, and anthropogenic black carbon). The SLCP Reduction Strategy identified diversion of organic waste from landfills to organic waste recovery facilities (such as AD and composting facilities) as an important method of reducing off-gassed methane and air pollutants.

Toxic Air Contaminants

TACs in California are regulated primarily through the Tanner Air Toxics Act (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 identified more than 21 TACs and adopted EPA's list of HAPs as TACs. Most recently, PM exhaust from diesel engines (diesel PM) was added to CARB's list of TACs.

After a TAC is identified, CARB then adopts an airborne toxics control measure 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 for toxics to minimize emissions.

The Hot Spots Act requires that existing facilities that emit toxic substances above a specified level prepare an inventory of toxic emissions, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

AB 617 (Chapter 136, Statutes of 2017) aims to help protect air quality and public health in communities around industries subject to the State's cap-and-trade program for GHG

emissions. AB 617 imposes a new State-mandated local program to address nonvehicular sources (e.g., refineries, manufacturing facilities) of criteria air 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 these identified areas. Currently, air districts review individual sources and impose emissions limits on emitters based on best available control technology, 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 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). Over time, the replacement of older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) 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, it is expected that diesel PM concentrations will be 85 percent less in 2020 in comparison to year 2000 (CARB 2000). Adopted regulations are also expected to continue to reduce formaldehyde emissions emitted by 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 LEA, and emergency procedures for the cease and desist of any operations that cause odor impacts (14 CCR Section 17863.4). 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

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 air quality may include general plan policies, rules set by air districts, and air quality plans. This EIR assumes that the reasonably foreseeable compliance responses associated with implementation of SB 1383 would be consistent with local plans, policies, and rules 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.

3.3.2. Environmental Setting

The proposed regulation area is statewide and covers several air basins within California. The exact locations of new facilities under the project cannot be known at this time; however, the air basins likely to accommodate new or expanded organic waste recovery facilities include South Coast, San Francisco Bay Area, San Joaquin Valley, San Diego County, Sacramento Valley, South Central Coast, Mojave Desert, North Central Coast, Salton Sea, Lake County, Mountain Counties, Great Basin Valleys, and Northeast Plateau (CalRecycle 2018b). The ambient concentrations of air pollutant emissions differ in each basin. These concentrations are determined by the amount of emissions released by the sources of air pollutants 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 in an air basin are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources, as discussed separately below.

The majority of existing large composting facilities are currently located in the San Joaquin Valley, outside of major urban areas where materials are generated but closer to large agricultural areas where compost is directed. The rural areas between Los Angeles and the southern end of the San Joaquin Valley, and between the Bay Area and the northern end of the San Joaquin Valley have some of the largest composting facilities in the state. Air pollution generated at these existing composting facilities are regulated by the applicable air district (e.g., South Coast Air Quality Management District, San Joaquin Valley Air Pollution Control District).

Climate, Meteorology, and Topography

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 located in southern California, and vast forests of redwood and Douglas fir located in the northwest portion of the state. Major rivers include the Sacramento, San Joaquin, and Colorado Rivers. Major lakes include Lake Tahoe, Salton Sea, and Owens Lake. 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 more atmospherically stable, which can result in the accumulation of more 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 difference 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 Air Pollutants

Concentrations of criteria air pollutants are used to indicate the quality of the ambient air. A brief description of key criteria air pollutants in California is provided below. Table 3.3-2 summarizes the emission source type and the foreseeable health impacts that result from exposure to concentrations of criteria air pollutants that exceed the applicable CAAQS and NAAQS. The attainment status with respect to the CAAQS and the NAAQS is shown for each county in Appendix A.

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

Pollutant	Sources	Acute[a] Health Effects	Chronic[b] 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
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	Coughing, difficulty breathing, vomiting, headache, eye	Chronic bronchitis, decreased lung function

Pollutant	Sources	Acute[a] Health Effects	Chronic[b] Health Effects
	stationary reciprocating internal combustion engines	irritation, chemical pneumonitis or pulmonary edema; breathing abnormalities, cough, cyanosis, chest pain, rapid heartbeat, death	
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

Notes: NO_X = oxides of nitrogen; ROG = reactive organic gases

a. Acute health effects refer to immediate illnesses caused by short-term exposures to criteria air pollutants at fairly high concentrations. An example of an acute health effect includes fatality resulting from short-term exposure to carbon monoxide levels in excess of 1,200 parts per million.

b. Chronic health effects refer to cumulative effects of long-term exposures to criteria air pollutants, usually at lower, ambient concentrations. An example of a chronic health effect includes the development of cancer from prolonged exposure to particulate matter at concentrations above the national ambient air quality standards

Source: EPA 2018

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 (ROG) and oxides of nitrogen (NO_X) in the presence of sunlight. ROG are a subset of volatile organic compounds (VOCs) that are photochemically reactive. ROG emissions result primarily from 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 ROG 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 ROG, 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 percent less than that generated when organic material degrades on its own (Buyuksonmez and Evans 2007:191–199).

Nitrogen Dioxide

NO_2 is a brownish, highly reactive gas that is present in all urban environments. The major human-made 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, which reacts through oxidation in the atmosphere to form NO_2. The application of nitrogen fertilizers to agricultural and other lands also results in emissions of nitric oxide and NO_2. The combined emissions of nitric oxide 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 (EPA 2012).

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 residential fuel combustion. 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

then increased slightly from 2026 through 2035. Emissions of $PM_{2.5}$ in the California are dominated by the same sources as emissions of PM_{10} (CARB 2013).

Toxic Air Contaminants

According to the *California Almanac of Emissions and Air Quality,* the majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being diesel PM (CARB 2013). Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Unlike the other TACs, no ambient monitoring data are available for diesel PM 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 concentrations of diesel PM. In addition to diesel PM, 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.

Diesel PM poses the greatest health risk among these 10 TACs mentioned. Overall, levels of most TACs, except para-dichlorobenzene and formaldehyde, have decreased since 1990 (CARB 2013). TACs, including benzene, toluene, ethylene, and xylene are also emitting during landfill operations particularly from the continuous compacting of dumped materials.

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).

With respect to odors, the human nose is the sole sensing device. 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 sensitivities 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 perfectly 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. Odor sources of concern include wastewater treatment plants, sanitary landfills, composting facilities, recycling facilities,

petroleum refineries, chemical manufacturing plants, painting operations, rendering plants, and food packaging plants.

Organic waste recovery facilities, including composting and AD facilities, constructed in response to implementation of the proposed regulation can generate odors. Although air districts receive odor complaints associated with such facilities, air districts do not have enforcement authority over odors from composting facilities per Health and Safety Code Section 41705. The LEA for solid waste facility permitting has enforcement authority over nuisance odors from composting facilities and can issue violations for nuisance odors.

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 location of existing sensitive receptors near organic waste recovery facilities constructed and operated as result of implementation of the proposed regulation is unknown at the time of writing this Draft EIR.

3.3.3. Environmental Impacts and Mitigation Measures

Methodology

Criteria Air Pollutants

Construction of new or expanded organic waste recovery facilities would generate criteria air pollutant and ozone precursor emissions from earthmoving activities and exhaust from heavy-duty equipment. ROG, NO_X, PM_{10}, $PM_{2.5}$, and CO would be generated from the use of construction equipment and haul truck trips to and from sites of future or existing organic waste recovery facilities. Earthmoving activities would also result in emissions of fugitive PM_{10} and $PM_{2.5}$. Because of the programmatic nature of this Draft EIR and the uncertainty surrounding the location, size, intensity, and magnitude of future construction activities, emissions of criteria air pollutants are discussed qualitatively.

Operation of organic waste recovery facilities would result in emissions of criteria pollutants and ozone precursors from electricity consumption, use of diesel-powered equipment to process feedstocks and product, increased vehicle miles traveled to and from organic waste recovery facilities, and the post processing and combustion of biogas. Because of the programmatic nature of the proposed regulation, the level of activity at a future organic waste recovery facility is unknown at the time of writing this Draft EIR. As a result, operational emissions of criteria air pollutants and ozone precursors are assessed qualitatively. Moreover, future operation of organic waste recovery would be analyzed against a pertinent air district's thresholds; however, at the time of writing this Draft EIR, the specific thresholds to apply are unknown at this time.

Depending on location and attainment status of an air basin, air districts' thresholds used to assess significant air quality impacts vary across a wide margin. As a result, a project's operational contribution may be deemed significant in one air basin and not another.

In December 2018, the California Supreme Court issued its decision in Sierra Club v. County of Fresno (226 Cal.App.4th 704) (hereafter referred to as the Friant Ranch Decision). The case reviewed the long-term, regional air quality analysis contained in the EIR for the proposed Friant Ranch development. The project is located in unincorporated Fresno County within the San Joaquin Valley Air Basin, an air basin currently in non-attainment for multiple NAAQS and CAAQS, including ozone and PM. The Court ruled that the air quality analysis failed to adequately disclose the nature and magnitude of long-term air quality impacts from emissions of criteria pollutants and precursors "in sufficient detail to enable those who did not participate in its preparation to understand and consider meaningfully the issues the proposed project raises." The Court noted that the air quality analysis did not provide a discussion of the foreseeable adverse effects of project-generated emissions on Fresno County's likelihood of exceeding the NAAQS and CAAQS for criteria air pollutants nor did it explain a connection between the project's emissions and deleterious health impacts. Moreover, as noted by the Court, the EIR did not explain why it was not "scientifically possible" to determine such a connection. The Court concluded that "because the EIR as written makes it impossible for the public to translate the bare numbers provided into adverse health impacts or to understand why such translation is not possible at this time," the EIR's discussion of air quality impacts was inadequate.

In response to the Friant Ranch Decision, the analysis provided herein provides a qualitative discussion of the potential adverse human health impacts that could occur from emissions of criteria pollutants that exceed an applicable air district's thresholds of significance and why it is not scientifically feasible to provide a quantified analysis.

Toxic Air Contaminants

Accurate quantification of health risks associated with construction- and operation-related activities under the proposed regulation is not possible at a programmatic level, because specific site locations, facility designs, and operational details must be known. Health risk assessments require detailed site-specific information which cannot be known at this time. Therefore, potential health risks are discussed qualitatively.

Odors

The collection, transport, storage, and pre-processing activities of potentially odiferous organic substrates from AD and composting could result in objectionable odors within the vicinity of AD or composting facilities. These potential impacts are discussed qualitatively.

Carbon Monoxide

CO would be generated from vehicles moving to and from organic waste recovery facilities. The location or number of such vehicles, as well as existing roadway volumes are unknown at this time. CO impacts are, thus, discussed qualitatively.

Thresholds of Significance

An impact on air quality would be significant if implementation of the proposed regulation would:

- conflict with or obstruct implementation of the applicable air quality plan,
- result in a cumulatively considerable net increase of any nonattainment pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard,
- expose sensitive receptors to substantial pollutant concentrations, or
- result in other emissions such as those leading to odors adversely affecting a substantial number of people.

Issues Not Discussed Further

No issues related to air quality are dismissed from analysis.

Environmental Impacts and Mitigation Measures

Impact 3.3-1: Short-Term Construction-Related Emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$

Construction of organic waste recovery facilities under the proposed regulation 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 $PM_{2.5}$ that could exceed local air districts' thresholds of significance. Construction-generated emissions of criteria air pollutants and precursors would be **potentially significant**.

To accommodate additional diverted organic waste from implementation of the proposed regulation, new or expanded organic waste recovery facilities would be constructed. Although the size, location, and level of construction activity are unknown at the time of writing this Draft EIR, construction-related activities would generate air pollutants. Common activities and their associated emissions are discussed below.

Generally, during the construction phase for any facilities, criteria air pollutants and ozone precursors would be generated from a variety of activities and emission sources. These emissions would be temporary and would be generated intermittently depending on the intensity of construction on a given day. Site grading and excavation activities would generate fugitive PM dust emissions, which is the primary pollutant of concern during construction. Fugitive PM dust emissions (i.e., PM_{10} and $PM_{2.5}$) vary as a function of several parameters, such as soil silt content and moisture, wind speed,

acreage of disturbance area, and intensity of activity performed with construction equipment. Exhaust emissions from off-road construction equipment, material delivery trips, and construction worker commute trips could also contribute to short-term increases in PM emissions, but to a lesser extent. Exhaust emissions from construction-related mobile sources also include ROG and NO_X. These emission types and associated levels fluctuate greatly depending on the particular type of equipment used, the number used, and the duration of their use.

The site preparation phase typically generates the most substantial emission levels because of the on-site equipment and ground-disturbing activities associated with grading, compacting, and excavation. Site preparation equipment and activities typically include backhoes, bulldozers, loaders, and excavation equipment (e.g., graders and scrapers). Although detailed construction information is not available at this time, it would be expected, based on the types of activities that could be conducted, that the primary sources of construction-related emissions would be soil disturbance and equipment-related activities (e.g., use of backhoes, bulldozers, excavators, and other related equipment). Based on typical emission rates and other parameters for this equipment and these activities, construction activities could generate hundreds of pounds of daily NO_X and PM emissions, which may exceed general mass emission limits of a local air district depending on the location of generation. Thus, construction of new or expanded organic waste recovery facilities could generate levels that conflict with applicable air quality plans and exceed or contribute substantially to an existing or projected exceedance of NAAQS or CAAQS.

Modifications to existing facilities or construction of new facilities would be required to secure local or State land use approvals prior to their implementation. Part of the development review and approval process for projects located in California requires environmental review consistent with California environmental laws (e.g., CEQA) and other applicable local requirements (e.g., local air district rules and regulations). The environmental review process would include an assessment of whether implementation of such projects could result in short-term construction-related air quality impacts.

Air districts are charged with developing thresholds of significance for project-level CEQA review. Typically, air districts express these thresholds numerically as either pounds per day or tons per year. Such thresholds are generally adopted or developed in consideration of the attainment status and pollutant inventory of a region overseen by an air district. Conversely, several air districts (e.g., Colusa County Air Pollution Control District, Northern Sonoma County Air Quality Management District) do not have adopted thresholds of significance for criteria pollutants or precursors. The specific thresholds of significance by each air district are included as Appendix A of this Program EIR.

The air districts that have adopted, measurable thresholds of significance also consider the health implications of exposure to criteria air pollutants. The NAAQS and CAAQS represent scientifically supported concentrations of criteria air pollutants wherein human health impacts would be minimized or avoided. Therefore, air basins in attainment for the NAAQS and CAAQS would result in fewer occurrences of air pollution–related acute

and chronic illness as compared to a basin in nonattainment. Table 3.3-2 summarizes the potential acute and chronic illnesses that may be caused by exposure to concentrations of criteria pollutants in exceedance of the NAAQS and CAAQS. Notably, these concentrations may be less applicable to populations of increased sensitivity, such as children, the elderly, and those with preexisting respiratory and cardiovascular disease.

At this time, the specific location, type, and number of construction activities are not known and would depend on a variety of factors that are not subject to CalRecycle's authority. New or expanded organic waste recovery facilities would likely constitute a "project" under CEQA and would undergo project-level environmental review by a local government jurisdiction. During the project-specific CEQA process, the applicable lead agency would oversee the development of the appropriate environmental document and would identify project-level mitigation.

Thus, construction-related air quality impacts from implementation of the proposed regulation would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.3-1: Implement All Feasible On- and Off-Site Mitigation Measures to Reduce Construction-Generated Air Pollutants to Below a Lead Agency–Approved Threshold of Significance

As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to include permit conditions regulating air quality. Lead agencies would evaluate a project's construction emissions against the applicable threshold of significance developed by a lead agency and/or air district. In cases where these thresholds are exceeded, mitigation measures to reduce construction-generated air pollutants can and should be implemented by local jurisdiction with permitting authority. Site-specific, project impacts and mitigation measures would be identified during a project's local review process. A proposed project would be approved by a local government and/or the applicable air district as conditions of approval.

The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on construction-generated air pollutants.

- Project proponents shall apply for, secure, and comply with all appropriate air quality permits for project construction from the local agencies with air quality jurisdiction and from other applicable agencies, if appropriate, prior to construction mobilization.
- Project proponents shall comply with the CAA and the CAAA (e.g., New Source Review and Best Available Control Technology criteria, if applicable).
- Project proponents shall comply with local plans, policies, ordinances, rules, and regulations regarding air quality–related emissions and associated exposure

(e.g., construction-related fugitive PM dust regulations, indirect source review, and payment into off-site mitigation funds).

- For projects located in PM nonattainment areas, project proponents shall prepare and comply with a dust abatement plan that addresses emissions of fugitive dust during construction of the project.
- Project proponents shall apply EPA Tier 3 or 4 emissions standards for projects found to generate exhaust NO_X emissions in exceedance of an applicable threshold of significance.
- Project proponents shall use all feasible biodiesel-, combined natural gas–, and electricity-powered heavy-duty equipment for projects that generate emissions in exceedance of an applicable threshold.
- Project proponents shall implement idling and speed restrictions on project sites.

Significance after Mitigation

Mitigation Measure 3.3-1 would reduce construction-related air emission because requirements would be placed on fuels, equipment, and other construction-related activities during development or renovation of individual facilities. However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, this EIR discloses, for CEQA-compliance purposes, that construction-related air emissions could be **potentially significant and unavoidable**.

Impact 3.3-2: Long-Term Operational Emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$

Operation of organic waste recovery facilities under the proposed regulation would result in reductions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ associated with the diversion of organic materials from landfills to facilities with the capacity to implement strategies to reduce such emissions. However, AD and composting facilities, and other organic waste recovery facilities, would also generate air pollution from the on- and off-road mobile sector. On-road vehicles (e.g., refuse and other collection trucks, commute-related automobiles) accessing organic waste recovery facilities would generate emissions of criteria air pollutants and precursors. New emissions could occur at AD and composting facilities either from diesel engine grinders, flaring of biogas or both, 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 air pollutants. Therefore, operation-related air quality impacts would be **potentially significant**.

By 2030, CalRecycle estimates that 61 AD and 108 composting facilities will be operational pursuant to SB 1383 (CalRecycle 2019). Other new or expanded organic waste recovery facilities (such as chip and grind facilities and recycling centers) would also be operational by this time. Operation of these facilities would produce emissions of air pollutants from energy consumption, decomposition of organic materials, use of petroleum- or biodiesel-powered equipment, end use of biogas (e.g., flaring, combustion for electricity), and vehicle trips to and from facilities. The level of these emissions would depend on several factors, such as the size and type of organic waste recovery facility (e.g., batch systems, wet or dry process, aerated static pile). Operational emissions of fugitive dust would be generated from processing equipment and truck movement on paved or unpaved surfaces.

The anaerobic decomposition of organic materials within landfills produces substantial emissions of VOCs that encompass ROG, which reacts with NO_X and long-wave radiation to form ground-level ozone. As discussed above, ozone is categorized by EPA and CARB as one of six criteria air pollutants regulated by the CAA and CCAA, and is a component of smog. Although VOCs, NO_X, and PM would be emitted during the digestion and composting of organic materials, and during the operation of other organic waste recovery facilities, these emissions would be reduced compared to emissions currently emitted from the decomposition of organic waste in existing landfills.

In coordination with CARB, CalRecycle estimated the potential net difference between existing emissions from landfills continuing to operate under a business-as-usual or a without proposed regulation scenario and emissions from newly constructed AD, compost, and chip and grind facilities by air basin for 2030. As shown below in Table 3.3-3, organic materials diverted to AD, compost, and chip and grind facilities would produce substantial reductions in NO_X and $PM_{2.5}$ relative to landfill disposal of organic waste. The values in Table 3.3-3 include landfill combustion pollutants (both $PM_{2.5}$ and NO_X) associated with the flares and landfill gas recovery systems that are present at landfills, where most of these pollutant emissions are from landfill gas recovery systems compared to flaring.

Implementation of the proposed regulation would result in reduced activity at landfills. As a result, heavy-duty equipment use and haul trips would decrease within the vicinity of existing and future landfills. However, heavy-duty equipment would be required to operate organic waste recovery facilities. Additionally, there could be an increase in vehicle miles traveled associated with the movement of organic materials to organic waste recovery facilities, as well as from increased vehicle use to distribute end products (such as compost and biogas) from these facilities. Thus, on- and off-road transportation sources of criteria air pollutants may be redistributed regionally.

Because of the uncertainty surrounding operation-related emissions, the levels of mobile-source criteria air pollutant and precursor emissions associated with activities covered under the proposed regulation are not quantified in this Draft EIR. For example, biogas derived from AD operations could be used in internal combustion engines to produce electricity or power vehicles, which produces emissions of NO_X, a precursor to ground-level ozone. The degree to which biogas would be used is unknown at this time,

and, as summarized in Appendix A, several counties in California are in nonattainment for the NAAQS and CAAQS for ozone. Because the number of trips to and from organic waste recovery facilities and related VMT would increase on a statewide basis (see Section 3.13, "Transportation") and because of the potential for the increased combustion of biogas, it is foreseeable that activities resulting from implementation of the proposed regulation could adversely contribute to regional air quality impacts.

It is foreseeable that AD and composting facilities could use biogas produced from the decomposition of organic materials as an on-site energy source. Also, biogas could be used to replace petroleum-derived combined natural gas–powered garbage vehicles. As a result, energy- and mobile-source emissions of criteria pollutants and precursors would be reduced as compared to baseline conditions. However, the degree to which biogas would be used by facilities and/or vehicles accessing such facilities is unknown at this time.

Table 3.3-3 Summary of NO_X and $PM_{2.5}$ Inventory for New Organic Waste Recovery Facilities (Tons per Year)

Air Basin	Total New Facility NO_X Emissions (AD + Compost + C&G, tpy)[3]	Total New Facility $PM_{2.5}$ Emissions (AD + Compost + C&G, tpy)	BAU Landfill NO_X Emissions (tpy)[4]	BAU Landfill $PM_{2.5}$ Emissions (tpy)	SB1383 NO_X Emissions (Total New Facility Emissions - Landfill Emissions; tpy)	SB1383 $PM_{2.5}$ Emissions (Total New Facility Emissions - Landfill Emissions; tpy)
South Coast	62	5142	7737	8857	-7674	-3715
San Francisco Bay	21	1640	2451	2806	-2430	-1166
San Joaquin Valley	16	1214	1802	2062	-1786	-848
San Diego County	15	1179	1775	2032	-1760	-853
Sacramento Valley	10	731	1094	1253	-1084	-522
South Central Coast	8	625	934	1069	-926	-444
Mojave Desert	6	389	583	668	-578	-278
North Central Coast	5	301	447	511	-442	-210
Salton Sea	2	83	125	144	-124	-60
Lake County	2	20	30	34	-28	-14
Mountain Counties	2	18	27	31	-26	-13

Air Basin	Total New Facility NO_X Emissions (AD + Compost + C&G, tpy)[3]	Total New Facility $PM_{2.5}$ Emissions (AD + Compost + C&G, tpy)	BAU Landfill NO_X Emissions (tpy)[4]	BAU Landfill $PM_{2.5}$ Emissions (tpy)	SB1383 NO_X Emissions (Total New Facility Emissions - Landfill Emissions; tpy)	SB1383 $PM_{2.5}$ Emissions (Total New Facility Emissions - Landfill Emissions; tpy)
Great Basin Valleys	2	14	20	23	-19	-10
Northeast Plateau	2	7	10	11	-8	-5

Notes: BAU = business as usual; NO_X = oxides of nitrogen; $PM_{2.5}$ = fine particulate matter (particulate matter with an aerodynamic diameter of 2.5 micrometers or less)

[1] Landfill disposal data was aggregated into air basins based on location of each landfill, and tonnage received at each landfill.

[2] North Coast and Lake Tahoe Air Basins have no landfills, therefore no tons were allocated to these basins

[3] Compost, Chip and Grind, and Anaerobic Digestion emission factors for NO_X and PM are derived from emissions data from source testing conducting for air district permits. Data is applied to future facilities projected to be constructed in response to the regulations. All new facilities are assumed to process 100,000 Tons Per Year.

[4] Landfill Emissions factors for NO_X and $PM_{2.5}$ are derived from EPA's LMOP database (Jaffe Study, June 2016) for total methane generated and from Table .24, USEPA's AP-42 (October 2008) guidance document for calculating NOx emission. This estimate represents 92 percent of waste in place, and therefore represents a conservative estimate.

Source: CalRecycle 2019

AD facilities include infrastructure to facilitate the flaring of biogas as a safety measure, if the accumulation of biogas exceeds an AD facility's capacity, and a method of odor control (EPA 2004). Flaring of gas deprives the facility operator of a primary revenue source, therefore operators seek to avoid flaring. However intermittent flaring activities within these AD facilities could occur. The practice of flaring methane is common at landfills and occurs continuously. Flaring methane produces emissions of NO_X and PM, which contribute to concentrations of ground-level ozone. Because a primary objective of AD facilities is to capture and use biogas, flaring would occur less frequently than under existing conditions at landfills. Additionally, through the aerobic decomposition of organics at compost facilities, methane emissions would be reduced, which also would result in less flaring. Consequently, the NO_X and PM emissions generated from flaring would decrease within the vicinity of an existing landfill and precursors contributing to regional ozone concentrations within certain air basins could be reduced.

While flaring would not be common practice at AD facilities operating under the proposed regulation, flaring could still occur. Therefore, it is foreseeable that new NO_X and PM emissions related to flaring of biogas could be introduced to an air basin in the vicinity of an AD facility. This could introduce a new ground-level ozone impact to an area that may have previously been in attainment for the NAAQS and CAAQS.

An analysis of the environmental effects of operating new or expanded AD, composting, or other organic waste recovery facilities would be required to secure local land use approvals prior to implementation. The development review and approval process for projects located in California requires environmental review consistent with California environmental laws (e.g., CEQA) and other applicable local requirements (e.g., local air district rules and regulations). The environmental review process would include an assessment of whether implementation of such projects could result in long-term operation-related air quality impacts.

As discussed previously, 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 CAAQS, which are concentrations of criteria air pollutants intended to reduce potential human health impacts related to exposure. Table 3.3-2 summarizes known acute and chronic health impacts associated with exposure to high concentrations of the criteria air pollutants. Projects that demonstrate operational emissions below the appropriate air districts' thresholds of significance would not degrade regional air quality and thus would minimize potential human health impacts.

However, given the inherent uncertainty surrounding the potential for an air district's thresholds of significance to be exceeded, there still exists the possibility that operational emissions from an organic waste recovery facility could contribute to an exceedance of the NAAQS and CAAQS for criteria air pollutants.

As summarized in Table 3.3-2, acute (short-term) exposure to criteria air pollutants results in a wide range of illnesses ranging from coughing, chest pain, nausea, vomiting, eye irritation, aggravation of asthma, rapid heartbeat, and lung and heart irritation to pulmonary edema, reproductive defects, and death. Chronic (long-term) exposure elicits health impacts including cancer and lung, heart, endocrinological, and immune impairment and scarring (EPA 2018).

The precise location of facilities, and therefore, where or to what magnitude a health impact could affect sensitive receptors cannot be known at this time. Therefore, quantifiable estimates of project-level emissions of criteria air pollutants and ozone precursors, exposure of specific receptor populations, and resulting location-specific health impacts are not feasible. The secondary formation of PM is very similar to the complexity of ozone formation, and localized impacts of directly emitted PM do not always equate to local PM concentrations due to the transport of emissions. Ozone is a secondary pollutant formed from the oxidation of ROG and NO_X in the presence of sunlight. Rates of ozone formation are a function of a variety of complex physical

factors, including topography, building influences on air flow (e.g., downwash), ROG and NO_X concentration ratios, multiple meteorological conditions, and sunlight exposure (Seinfeld and Pandis 1996:298). For example, rates of ozone formation are highest in elevated temperatures and when the ratio of ROG to NO_X is 5.5:1. When temperatures are lower and this ratio shifts, rates of ozone formation are stunted (Seinfeld and Pandis 1996:299–300). In addition, ROG emissions are composed of many compounds that have different levels of reactivity leading to ozone formation. Methane, for instance, is the most common ROG compound, yet it has one of the lowest reactivity potentials (Seinfeld and Pandis 1996:309, 312).

In addition, some groups may develop more severe health impacts than others. It would be misleading to correlate project-level emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ to specific health outcomes of an affected population. While the list of effects noted above could manifest in a recipient population, the actual effects on individuals depend on individual factors, such as life stage (e.g., infants, children, and the elderly are more sensitive), preexisting cardiovascular and/or respiratory diseases, existing exposure to other forms of pollution, and genetic polymorphisms. Consequently, the concentrations of criteria air pollutants resulting from operational emissions of organic waste recovery facilities and their specific health impacts are scientifically infeasible to forecast with an adequate degree of accuracy to be meaningful.

Because the specific location of future organic waste recovery facilities proposed under the proposed regulation is unknown at this time (See Chapter 2, “Project Description), this analysis makes a good faith effort to qualitatively disclose the potential adverse human health impacts that could occur from operational emissions of criteria air pollutants and ozone precursors under the proposed regulation.

Although there would be substantial reductions in fugitive air pollution from landfills, because emissions of air pollutants from the operation of organic waste recovery facilities implemented in response to the proposed regulation could surpass the applicable thresholds of significance of a local air district, operational-related air quality impacts would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.3-2: Implement All Feasible On- and Off-Site Mitigation Measures to Reduce Operation-Related Air Pollutants to Below a Lead Agency–Approved Threshold of Significance

As described in Section 1.2, “Purpose of this EIR,” the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to include permit conditions regulating air quality. Lead agencies would evaluate a project’s operational emissions against the applicable threshold of significance developed by a lead agency and/or air district. In cases where these thresholds are exceeded, mitigation measures to reduce operation-related air pollutants can and should be implemented by local jurisdiction with permitting authority. Site-specific, project impacts and mitigation measures would be

identified during a project's local review process. A proposed project would be approved by a local government and/or the applicable air district as conditions of approval.

The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on operation-related air pollutants.

- Project proponents shall comply with the CAA and CAAA (e.g., New Source Review and Best Available Control Technology criteria, if applicable).
- Project proponents shall 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).
- Project applicants shall establish a requirement pertaining to the use of biogas for electricity and facility-related vehicles.
- Project applicants shall establish a maximum rate at which flaring may occur at a facility.

Significance after Mitigation

Mitigation Measure 3.3-2 would reduce operations-related air emission because requirements would be placed on individual facilities. However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, this EIR discloses, for CEQA-compliance purposes, that operations-related air emissions could be **potentially significant and unavoidable**.

Impact 3.3-3: Compliance with Air Quality Management Plans

The proposed regulation would be compliant with statewide plans and programs that serve to reduce air pollution. Plans and programs applicable to the proposed regulation include the Mobile Source Strategy and the SLCP Reduction Strategy. This impact would be **less than significant**.

The proposed regulation would be deployed statewide as a component of the SLCP Reduction Strategy, which is derived from the framework presented in CARB's Mobile Source Strategy. The Mobile Source Strategy identifies the need for the State to develop the SLCP Reduction Strategy as a necessary action to reduce GHG emissions and air pollution. The SLCP Reduction Strategy identifies three categories of SLCPs: methane, anthropogenic black carbon, and fluorinated gases. Although categorized as a

potent GHG, methane is also a component of ROG, which reacts with NO_X in the presence of sunlight to form ground-level ozone.

One of the proposed regulation's primary objectives is to reduce the disposal of organic waste in landfills. The actions induced by the proposed regulation (e.g., construction and operation of new or expanded organic waste recovery facilities) are identified and evaluated in the SLCP Reduction Strategy in addition to other methane-reducing measures. Organic waste recovery facilities (e.g., composting, AD, and chip and grind facilities, among others) would reduce fugitive methane emissions as well as emissions of VOCs that would otherwise be emitted from a landfill.

The actions included in the proposed regulation are consistent with the direction provided in the Mobile Source Strategy and the SLCP Reduction Strategy. Implementation of the proposed regulation would not interfere with the goals of either plan. Further, the proposed regulation would not conflict with the execution of other statewide programs to reduce air pollution, such as the Clean Car Act (AB 1493 [Pavley, Chapter 200, Statutes of 2002]) and Zero Emission Vehicle Mandate. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.3-4: Exposure of Sensitive Receptors to TAC Emissions

Construction of organic waste recovery facilities built in response to the proposed regulation would generate short-term emissions of diesel PM; however, emissions would be temporary. Given the timeline established by SB 1383, construction phasing likely would not exceed 5 years (i.e., it would be operational by 2025). Operation of organic waste recovery facilities under the proposed regulation would result in reductions in emissions of TACs as compared to existing conditions at landfills. TACs generated by the reasonably foreseeable organic waste recovery facilities would constitute a stationary source and would be subject to the permitting requirements set by the appropriate air district. However, it is foreseeable that emissions of diesel PM could result in localized air quality impacts from the operational of diesel-powered on- and off-road equipment. This impact would be **potentially significant**.

Air districts typically develop thresholds of significance for identifying potential TAC impacts during environmental review. Commonly, these thresholds are expressed as a numerical concentration or as a hazard index value. For example, the Bay Area Air Quality Management District, South Coast Air Quality Management District, and Sacramento Metropolitan Air Quality Management District use an incremental increase in cancer risk that exceeds 10 in one million or a hazard index of 1.0 or greater when evaluating the potential for a TAC impact to occur. The proposed regulation would be implemented statewide, and future organic waste recovery facilities could be located within the jurisdictions of the state's 35 air districts; therefore, how an air district

approaches TAC exposure analysis may differ depending on the location of the facilities.

Construction-Related TACs

Construction-related activities would result in temporary, intermittent emissions of diesel PM from the exhaust of heavy-duty off-road diesel equipment used for demolishing the existing building, preparing the site (e.g., clearing and grading), trenching, paving, moving building materials around the site, and applying architectural coatings. On-road, diesel-powered haul trucks traveling to and from the construction area to deliver materials and equipment are less of a concern because they do not operate at a single location for extended periods and therefore would not expose a single receptor to excessive diesel PM emissions. This analysis focuses primarily on heavy-duty construction equipment used on-site that may affect nearby off-site land uses.

Particulate exhaust emissions from diesel-fueled engines (i.e., diesel PM) were identified as a TAC by CARB in 1998. The potential cancer risk from inhaling diesel PM outweighs the potential for all other diesel PM–related health impacts (i.e., noncancer chronic risk, short-term acute risk) and health impacts from other TACs (CARB 2003:K-1). Chronic and acute exposure to noncarcinogens is expressed as a hazard index, which is the ratio of expected exposure levels to an acceptable reference exposure level.

The dose to which receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC levels that exceed applicable standards). Dose is a function of the concentration of a substance in the environment and the duration of exposure to the substance. It is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for any exposed receptor. Thus, the risks estimated for an exposed individual are higher if the exposure occurs over a longer period. According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments (HRAs), which determine the exposure of sensitive receptors to TACs, should be based on a 70- or 30-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project (OEHHA 2015:5-23 to 5-24). For this reason, it is important to consider that the use of heavy-duty off-road diesel equipment would be limited to the duration of the construction period. The exact length of construction is not known at this time, but given the diversion goals of SB 1383 (i.e., a 75-percent reduction in the level of statewide disposal of organic waste from 2014 levels by 2025), it would be expected that new or expanded organic waste recovery facilities would be constructed prior to 2025.

In addition, studies show that diesel PM is highly dispersive and that concentrations of diesel PM decline with distance from the source (e.g., 500 feet from a freeway, the concentration of diesel PM decreases by 70 percent) (Roorda-Knape et al. 1999; Zhu et al. 2002, cited in CARB 2005:9). It is expected that future organic waste recovery facilities would be sited in a compatible location (such as at an industrial zoned site or co-located at an existing solid waste-handling facility or wastewater treatment plant) protective of human health consistent with city and county general plans. Thus, the

likelihood that a sensitive receptor would be exposed to diesel PM is minimal. As a result, construction-related TAC emissions would not be substantial.

Operation-Related TACs

Implementation of actions to achieve the goals contained in the proposed regulation would involve the operation of on-site heavy-duty equipment (e.g., loaders, grinders) as well as haul truck trips during the collection of organic materials, movement of such material to organic waste recovery facilities (e.g., biomass conversion facilities, composting facilities), and distribution of products generated by these facilities (e.g., compost, condensed RNG). Although there is an expectation that RNG could be used to operate a percentage of these vehicles and equipment, such trips could constitute an operational source of diesel PM emissions.

Organic waste recovery facilities would likely include the use of a backup diesel generator, which would be operated only during power failures and for periodic testing (approximately 1–2 hours per month). However, air districts typically require that permits be obtained for stationary sources of TACs. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including New Source Review standards and air toxics control measures. Air districts limit emissions and public exposure to TACs through several programs. It prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TACs and the proximity of the facilities to sensitive receptors.

As previously stated, organic waste recovery facilities would be expected to be sited within an appropriate land use (i.e., industrial) and would not be located within 1,000 feet of a sensitive receptor. Therefore, operation of facilities under the proposed regulation would likely not expose off-site sensitive receptors to TAC concentrations and would not be expected to 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).

Organic waste recovery facilities would result in fewer fugitive emissions of TACs compared to landfills. Landfill operations, particularly the continuous compacting of dumped materials, emit a wide variety of TACs, including benzene, toluene, ethylene, and xylene, which are typically associated with the combustion of fossil fuels and synthetically derived compounds (CARB, CAPCOA, and CalRecycle 2018:10). Organic waste recovery facilities would result in stationary source emissions of TACs; however, these sources would be subject to permitting as required by the applicable air district. Nonetheless, because operation of organic waste recovery facilities constructed under the proposed regulation would require the operation of diesel-powered vehicles and heavy-duty equipment, organic waste recovery facilities could introduce mobile-source TAC emissions in exceedance of an applicable threshold of significance. Therefore, operation emissions of TACs would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.3-4: Conduct a Health Risk Assessment and Implement On-Site TAC-Reducing Mitigation Measures

As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to include permit conditions regulating air quality. Lead agencies would evaluate a project's operational emissions against the applicable threshold of significance developed by a lead agency and/or air district. In cases where these thresholds are exceeded, mitigation measures to reduce operation-related air pollutants can and should be implemented by local jurisdiction with permitting authority. Site-specific, project impacts and mitigation measures would be identified during a project's local review process. A proposed project would be approved by a local government and/or the applicable air district as conditions of approval.

The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on operation-related air pollutants.

In cases where TAC emission thresholds are exceeded, future project proponents should conduct an HRA prior to commencing operation. The HRA should be prepared pursuant to the most recent guidance published by OEHHA. The HRA should estimate TAC emissions from both existing and proposed TAC sources including on- and off-site mobile and stationary sources. The HRA should determine the maximum incremental increase in cancer risk from the long-term operation of organic waste recovery facilities. Future project proponents should evaluate this incremental increase against an applicable threshold of significance as determined by the relevant air district. In cases where the incremental increase exceeds these thresholds, on-site mitigation shall be applied. The following are operation-related mitigation measures that are typically applied to projects on site to reduce TAC emissions:

- 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.
- Project proponents shall utilize renewable natural gas to power on-road vehicles accessing future project sites.

Significance after Mitigation

Mitigation Measure 3.3-4 would reduce TAC emission because requirements would be placed on fuels, equipment, and other sources of TAC emissions. However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, this EIR discloses, for CEQA-compliance purposes, that TAC emissions could be **potentially significant and unavoidable**.

Impact 3.3-5: Exposure of Sensitive Receptors to Odors

Implementation of the proposed regulation would require the operation of new and expanded organic waste recovery facilities throughout the state. Adverse odors could be generated by activities performed at these facilities, including the handling of feedstock materials and the off-gassing of odors generated during the decomposition of organic materials. Finished compost applied to agricultural and other land uses could also create objectionable odors. Odor impacts related to the proposed regulation would be **potentially significant**.

The occurrence and severity of odor impacts from the collection, transport, storage, and preprocessing activities of odiferous organic materials, in addition to the byproducts of organic waste recovery operations such as digestate and compost, would depend on numerous factors, including the nature, frequency, and intensity of odor sources; wind speed and direction; the proximity to off-site receptors; and the sensitivity of receptors. Although exposure to offensive odors generally does not result in physical harm, it can be perceived as objectionable, leading to considerable distress among the public, and it can result in citizen complaints to local governments in response to the construction and operation of new or expanded organic waste recovery facilities. It is foreseeable that the operation of new or expanded organic waste recovery facilities could result in the creation of new sources of odors.

Compost facilities have the potential to create odors depending on the types of feedstocks used and the anaerobic conditions associated with poor feedstock management. 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.

However, the Governor's Office of Planning and Research, as well as air districts throughout the state, identify landfills as known sources of adverse odors. It is reasonably foreseeable that as compared to baseline conditions, these odors would be at least in part displaced from landfills to organic waste recovery facilities, which would be subject to OIMPs pursuant to 14 CCR Section 17863.4.

As discussed above in the "Regulatory Setting" section, an OIMP serves to minimize odor impacts from stationary sources and is required for all compostable materials handling operations and facilities. OIMPs would apply to composting facilities expanded or constructed under the proposed regulation. An OIMP must identify nearby sensitive receptors; characterize meteorological conditions; evaluate the efficacy of on-site, odor-reducing management practices; identify compliance protocol; and provide detailed discussion of the type and amount of feedstock materials treated at the composting facility. The management and certification of OIMPs are overseen by CalRecycle-delegated LEAs, which typically are a city or county environmental health office.

Activities under the proposed regulation could also include increased land application of diverted organic wastes. Land application entails the final application of green material, compostable material, and/or digestate meeting certain criteria on any land, but usually on agricultural or range lands. Criteria include achieving less than prescribed concentrations of various elements, pathogens, and contaminants, and staying within prescribed depths and frequency of application. Tt is foreseeable that its use could introduce objectionable odors to land uses that support sensitive receptors.

Some air districts have adopted thresholds of significance for evaluating odor impacts. For instance, the Bay Area Air Quality Management District identifies an odor impact as significant if a source incurs five confirmed complaints per year averaged over 3 years (BAAQMD 2017). Several air districts also recommend use of a buffer zone screening criterion for stationary sources of odor. Alternatively, many air districts have not adopted a threshold of significance for odor impacts or a screening criterion. The exact location of future organic waste recovery facilities is unknown at this time; however, it would be expected that odor impacts would be evaluated against the appropriate threshold if applicable.

Although compliance with applicable regulations could be sufficient to minimize adverse odors, CalRecycle does not have the authority to enforce compliance with such regulations or enforce project site mitigation in all instances. The ability to implement odor-reducing mitigation would be within the purview of local agencies for facilities requiring a compostable material handling permit, and the applicable land use/permitting authority. New or expanded organic waste recovery facilities would likely constitute a "project" under CEQA and would undergo project-level environmental review. During the CEQA process, the applicable lead agency would be responsible for overseeing the development of the appropriate environmental document and would identify project-level mitigation. However, CalRecycle cannot ensure that all feasible mitigation would be applied to reduce odor impacts to less-than-significant levels in all cases. Thus, odor impacts from implementation of the proposed regulation could be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.3-5a: Comply with Appropriate Local Land Use Plans, Policies, and Regulations

As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would require compliance with appropriate local land use plans, policies, and regulations. Local agencies can and should require individual projects to be consistent with appropriate local land use plans, policies, and regulations, including any applicable setbacks or buffer zones around sensitive land uses for potentially odiferous processes, as part of project approval requirements

Mitigation Measure 3.3-5b: Prepare an Odor Impact Minimization Plan or Odor Management Plan

Pursuant to 14 CCR 17863.4 and 17896.31, future project proponents of compost and AD facilities shall prepare an OIMP to mitigate adverse odor impacts as a condition of approval. Project proponents of other organic waste recovery facilities (e.g., MRFs and rendering facilities) not subject to 14 CCR 17863.4 or 17896.31 shall develop and implement an Odor Management Plan that includes odor control strategies similar to those that would be included in an OIMP, such as the following possible strategies:

- Prepare a list of potential odor sources.
- Identify and describe the most likely sources of odor.
- Identify the potential for, probable intensity of, and frequency of odor from likely sources.
- Prepare a list of odor control technologies and management practices that could be implemented to minimize odor releases. These management practices shall entail the establishment of, but shall not be limited to, the following criteria:
    - Require that substrate hauled to facilities is within sealed containers.
    - Provide enclosed, negative-pressure buildings for indoor receiving and preprocessing.
    - Treat collected odiferous air in a biofilter or air scrubbing system.
    - Establish a time limit for on-site retention of undigested substrates (e.g., substrates must be digested within 24 hours of reaching a site).
    - Combine organic feedstocks with coarse, dry building amendments to aerate feedstock.
    - Blend fresh organic feedstocks with finished compost, or apply a compost blanket of finished compost to fresh piles.

- Manage the delivery schedule to facilitate the prompt handling of odorous substrates.
- Handle digestate within enclosed buildings and/or directly pump it to sealed containers for transportation.
- Identify a protocol for monitoring and recording odor releases.
- Identify a protocol for reporting and responding to odor releases.

Significance after Mitigation

Implementation of Mitigation Measures 3.3-5a and 3.3-5b would reduce odor impacts because appropriate actions would be taken to minimize the potential for odor generation and mechanisms would be in place to respond to odors if they were created. However, except for compost and AD facilities, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation at other organic waste recovery facilities besides compost and AD lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, although odor impacts at compost and AD facilities within the jurisdiction of CalRecycle and LEAs are expected to be mitigated to less than significant through OIMPs, this EIR discloses, for CEQA-compliance purposes, that odor impacts at organic waste recovery facilities outside of CalRecycle and LEA odor jurisdiction could be **potentially significant and unavoidable**.

Impact 3.3-6: Exposure of Sensitive Receptors to Mobile-Source CO Concentrations

Implementation of the proposed regulation would result in increased VMT associated with the movement of organics to organic waste recovery facilities. CO would be emitted from this increase; 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**.

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 child care facilities. As a result, air districts typically recommend that CO not be analyzed at the regional level, but at the local level.

Local air districts have developed CEQA guidance pertaining to the evaluation of project-level CO impacts. For example, the Sacramento Metropolitan Air Quality Management District recommends a two tier screening methodology to assess whether CO emissions generated by traffic at congested intersections have the potential to exceed, or contribute to, an exceedance of the 8-hour CAAQS of 9.0 ppm or the 1-hour CAAQS of 20.0 (SMAQMD 2016). SMAQMD recognizes that an intersection that experiences more than 31,600 vehicles per hour has the potential to contribute CO emissions substantial to cause a violation of the CAAQS for CO.

The proposed regulation would result in an increase in VMT related to the movement of organics to organic waste recovery facilities; however, VMT would be distributed statewide. It would not be expected that the increase in VMT would result in additional vehicle trips per hour to the degree that a CO impact would occur as 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 in the state as statewide regulations such as the Zero Emission Vehicle Mandate and Advanced Clean Cars transition the transportation sector to electric vehicles that do not emit CO.

For these reasons, CO impacts under the proposed regulation would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

3.4. Archaeological, Historical, and Tribal Cultural Resources

This section analyzes and evaluates the potential impacts of the project on known and unknown cultural resources. Cultural resources include districts, sites, buildings, structures, and 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, historic-era resources, and "tribal cultural resources" (TCRs) (the latter as defined by AB 52, Statutes of 2014, in PRC Section 21074).

Archaeological resources are locations where human activity has measurably altered the earth or left deposits of prehistoric or historic-era physical remains (e.g., stone tools, bottles, former roads, house foundations). Historical (or architectural) resources include standing buildings (e.g., houses, barns, outbuildings, cabins), intact structures (e.g., dams, bridges, roads, districts), and landscapes. A 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.

TCRs were added as a resource subject to review under CEQA, effective January 1, 2015, under AB 52. They include site features, places, cultural landscapes, and sacred places or objects that are of cultural value to a tribe.

No comments received on the notice of preparation were related to cultural resources.

3.4.1. Regulatory Setting

Federal

Section 106 of the National Historic Preservation Act

Federal protection of resources is legislated by (a) the National Historic Preservation Act (NHPA) of 1966 as amended by 16 U.S. Code 470, (b) the Archaeological Resource Protection Act of 1979, and (c) the Advisory Council on Historical Preservation. These laws and organizations maintain processes for determination of the effects on historical properties eligible for listing in the National Register of Historic Places (NRHP). 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.

Section 106 of the NHPA and accompanying regulations (36 CFR Part 800) constitute the main federal regulatory framework guiding cultural resources investigations and require consideration of effects on properties that are listed in, or may be eligible for listing in the NRHP. The NRHP is the nation's master inventory of known historical resources.

The formal criteria (36 CFR 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 historic district can also be included in the NRHP.)

2. It retains integrity of location, design, setting, materials, workmanship, feeling, and association.
3. It possesses at least one of the following characteristics:

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

   Criterion B: It is associated with the lives of persons significant in the past (persons).

   Criterion C: It embodies the distinctive characteristics of a type, period, or method of construction; 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: It has yielded, or may be likely to yield, information important to prehistory or history (information potential).

The National Register Bulletin also provides guidance in the evaluation of archaeological site significance. Effects of a project on properties listed in the NRHP must be evaluated under CEQA.

State

California Register of Historical Resources

All properties in California that are listed in or formally determined eligible for listing in the NRHP are eligible for listing in the California Register of Historical Resources (CRHR). The CRHR is a listing of State of California resources that are significant within the context of California's history. The CRHR is a statewide program of 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 15 CCR, Chapter 11.5, Section 4850, to be included in the CRHR. The CRHR criteria are similar to the NRHP criteria and 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:

1. It is associated with events or patterns of 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.
2. It is associated with the lives of persons important to local, California, or national history.

3. It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of a master; or possesses high artistic values.
4. It 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 resource must meet one of the above criteria and retain integrity. The CRHR uses the same seven aspects of integrity as the NRHP.

California Environmental Quality Act

CEQA requires public agencies to consider the effects of their actions on "historical resources," "unique archaeological resources," and "tribal cultural resources." These terms are defined in the following sections.

Historical Resources

"Historical resource" is a term with a defined statutory meaning (PRC Section 21084.1), and the method for determining significant impacts on historical and archaeological resources is described in State CEQA Guidelines Sections 15064.5(a) and (b). Under State CEQA Guidelines Section 15064.5(a), the following resources are considered historical resources:

1. A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the CRHR will be presumed to be a historical resource (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]) does not preclude a lead agency from determining that the resource may be a historical resource as defined in PRC Section 5020.1(j) or 5024.1.

Under PRC Section 21084.1 and State CEQA Guidelines Section 15064.5(b), a substantial adverse change in the significance of a historical resource is a significant environmental effect. State CEQA Guidelines Section 15126.4(b) includes the following considerations for mitigation related to significant effects on historical resources:

(1) Where maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation, or reconstruction of the historical resource will be conducted in a manner consistent with *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings* (National Park Service 2017), the project's impact on the historical resource shall generally be considered mitigated below a level of significance and thus not significant.

(2) In some circumstances, documentation of a historical resource, by way of historic narrative, photographs, or architectural drawings, as mitigation for the effects of demolition of the resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur.

(3) Public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. The following factors shall be considered and discussed in an EIR for a project involving such an archaeological site:

(A) Preservation in place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.

(B) Preservation in place may be accomplished by, but is not limited to, the following:

1. planning construction to avoid archaeological sites;
2. incorporating sites within parks, greenspace, or other open space;
3. covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site; or
4. deeding the site into a permanent conservation easement.

(C) When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 of the Health and Safety Code. If an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation.

(D) Data recovery shall not be required for a historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource, provided that the determination is documented in the EIR and that the studies are deposited with the California Historical Resources Regional Information Center.

Unique Archaeological Resources

CEQA also requires lead agencies to consider whether projects will affect unique archaeological resources. PRC Section 21083.2(g) states that a unique archaeological resource is 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 any of the following criteria:

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

As discussed in Sections 21083.2(a) and (h), nonunique archaeological resources not meeting any of these criteria do not require further protection.

Section 21083.2(b) states that if it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require that reasonable efforts be made to preserve the resources in place or that they be left in an undisturbed state. Examples of that treatment, in no order of preference, are as follows:

(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; and

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

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

Tribal Cultural Resources

CEQA also requires lead agencies to consider whether projects would affect TCRs. PRC Section 21074 provides the following guidance:

a) "Tribal cultural resources" are either:

   1) sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either:

      A) included or determined to be eligible for inclusion in the CRHR; or

      B) included in a local register of historical resources as defined in Section 5020.1(k); or

   2) resources determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Section 5024.1(c). In applying the criteria set forth in Section 5024.1(c) 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 Section 21084.1(a) is a TCR 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 Section 21083.2(g), or a "nonunique archaeological resource" as defined in Section 21083.2(h) may also be a TCR if it conforms with the criteria of Section 21084.1(a).

PRC Section 21084.2 states that a substantial adverse change in the significance of a TCR is a significant environmental effect.

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act applies to both State and private lands. It requires that upon discovery of human remains, construction or excavation activity cease and the county coroner be notified. If the remains are of a Native American, the coroner must notify the Native American Heritage Commission (NAHC), which notifies and has the authority to designate the most likely descendant (MLD) of the deceased. The act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

Health and Safety Code, Sections 7050.5 and 7052

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 determined to be Native American, the coroner must contact NAHC. Section 7052 states that the disturbance of Native American cemeteries is a felony.

Public Resources 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 burial falls within the jurisdiction of NAHC. Section 5097.5 of the Code states:

> 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 TCR, 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, historical, and tribal cultural resources may include general plan policies and ordinances protective of these resources. This EIR assumes that the reasonably foreseeable compliance responses associated with implementation of SB 1383 would be consistent with local plans, policies, and ordinances to the extent the projects are subject to them

anticipated organic waste recovery infrastructure projects are subject to them, because local land use and permit approvals are typically conditioned upon such consistency.

3.4.2. Environmental Setting

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, in permanently occupied settlements, and in 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 record for the bow and arrow in the state that occurs 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, maintain natural resources and individual health, and were 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 two 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 shell 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 percent 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 study to inventory 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.

Historical Resources

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

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

- **Structure:** A structure is constructed for purposes other than human shelter, and it is often an engineering project or large in scale (e.g., bridges, dams, lighthouses, water towers, radio telescopes).
- **Linear Resource:** Linear resources are 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:** This includes excavations and associated structures and tailings built into the earth to extract natural resources.
- **Cemetery:** These are locations of human interment and include any single or multiple burials.
- **Foundation:** These are structural footings to support a building or structure.
- **Refuse Deposit:** These are 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).

Prehistoric Archaeological Resources

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

- **Village Site:** Village sites are 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 burial site or cemetery is 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:** This is 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:** Shell middens are 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:** Rock art consists of designs or design elements on rock surfaces created by surface applications (pictographs) or by etching (petroglyphs).
- **Rock Shelters:** These are natural caves or crevices in rock outcrops in which human use has left artifactual remains.

Tribal Cultural Resources

Different types of TCRs that may be present include the following features. The definition of TCRs 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:** This is 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:** This is 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:** This is 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 cemetery is a location that has been selected for human burial or interment.

Tribal Consultation

CalRecycle sent letters on April 17, 2019, notifying three Native American tribes that preparation of the EIR has begun, as required by PRC Section 21080.3.1: the San Gabriel Band of Mission Indians, the Karuk Tribe, and the United Auburn Indian Community of the Auburn Rancheria. These are the tribes that had submitted requests to CalRecycle to be notified of projects. No additional responses/coordination from either tribe have occurred as of the writing of this document. Compliance with the procedural aspects of AB 52 has been completed.

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 21083.2 of the State CEQA Guidelines defines “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 “nonunique resource” 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.

PRC Section 21074 defines TCRs as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe” that are listed in or determined to be eligible for listing in the CRHR, listed in a local register of historical resources, or otherwise determined by the lead agency, in its discretion and supported by substantial evidence, to be a TCR based on CRHR criteria.

Thresholds of Significance

An impact on archaeological, historical, and tribal cultural resources would be significant if implementation of the proposed regulation would:

- cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the State CEQA Guidelines;
- cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5 of the State CEQA Guidelines;
- cause a substantial adverse change in the significance of a TCR, defined in PRC Section 21074 as either a site, feature, place, or 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; or
- disturb any human remains, including those interred outside of dedicated cemeteries.

Issues Not Discussed Further

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

Environmental Impacts and Mitigation Measures

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

Development of new or expanded organic waste recovery facilities to comply with SB 1383 requirements could occur on lands that contain built historical resources. Because proposed 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**.

The reasonably foreseeable compliance responses associated with the proposed regulation include development of facilities to support processing and diverting organic waste from landfills. Projects located in areas with known historical sites, located in communities with established historic preservation programs, or involving activities that would introduce new visual elements or disturb the existing terrain have the potential to result in significant historic resource impacts. These projects could potentially reduce the aesthetic and physical integrity of historic districts and buildings that represent important examples of periods of California's history. A higher incidence of conflict with historical sites is expected to occur in urban areas with buildings that are more than 45 years old. Projects located in or traversing rural lands could also have significant 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.

Identification of the degree and extent of impact will require project-specific analysis that includes a determination of the importance (i.e., the eligibility for local, State, or NRHP listing) of any historic resource recognized within the project site boundaries of an organic waste recovery facility proposed in response to implementation of SB 1383. Given the potential for new and expanded development involving construction activities associated with the proposed regulation, significant impacts on historic resources might occur.

Because proposed 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**.

Mitigation Measures

Mitigation Measure 3.4-1: Survey and Redesign or Avoid Significant Historical Resources

As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce impacts on historical resources. Mitigation measures to reduce potential impacts on historical resources can and should be implemented by local

jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.

The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on historical resources:

- Applicants of projects shall identify and evaluate all historic-age (over 45 years in age) buildings and structures that are proposed to be removed and modified as part of the proposed regulation. This will include preparation of a historic structure report and evaluation of resources to determine their eligibility for recognition under federal, State, or local criteria. The evaluation shall be prepared by an architectural historian, or historical architect meeting the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, Professional Qualification Standards. The evaluation shall comply with State CEQA Guidelines Section 15064.5(b) and, if federal funding or permits are required, with Section 106 of the NHPA of 1966 (16 U.S. Code Section 470 et seq.).
- If resources eligible for inclusion in the NRHP, CRHR, or Local Official Register of Historic Resources are identified, an assessment of impacts on those resources shall be included in the report, as well as detailed measures to avoid impacts. If avoidance of a significant architectural/built environment resource is not feasible, additional mitigation options shall include, but not be limited to, specific design plans for historic districts or plans for alteration or adaptive reuse of a historical resource that follows *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitation, Restoring & Reconstructing Historic Buildings.*

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.

However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although it is reasonable to expect that impacts to historical resources 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. Therefore, this EIR discloses, for CEQA-compliance purposes, that impacts on historical resources associated with the proposed regulation could be **potentially significant and unavoidable**.

Impact 3.4-2: Disturbance to Unique Archaeological Resources

The reasonably foreseeable development projects associated with the proposed regulation could be located on properties that contain 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**.

Compliance with SB 1383 would include development of new or expanded organic waste recovery facilities. Because of the large geographic extent of areas where new facilities may be developed or altered, conducting a records search for archaeological and subsurface historical resources is not feasible within the context of this EIR. However, archaeological and subsurface historical resources have been identified throughout the state. Therefore, this analysis assumes that archaeological and subsurface historical resources may be present at individual project sites. These resources may include village sites, milling sites, lithic scatters, rock art, building foundations, and refuse deposits, among others.

Archaeological artifacts are by nature specific to their local context. For this reason, impacts on these resources resulting from development related to the proposed regulation would occur at the local level. New and or expanded organic waste recovery facilities could result in archaeological impacts if construction activities include the disturbance of previously identified or unidentified archaeological resources. Projects involving excavation, grading, or soil removal in previously undisturbed areas have the greatest likelihood to encounter significant 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.

During development of new and expanded facilities associated with implementation of the proposed regulation, unknown unique archaeological resources could be discovered during ground-disturbing activities and be inadvertently damaged or destroyed. 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 Potential Effects on Archaeological Resources

As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce impacts on archaeological resources. Mitigation measures to reduce potential impacts on archaeological resources can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed

project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.

The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on archaeological resources:

- Applicants for projects that include any ground disturbance shall retain a qualified archaeologist to conduct archaeological surveys of the site. The applicant shall follow recommendations identified in the survey, which may include activities such as subsurface testing, design and implementation of a Worker Environmental Awareness Program, construction monitoring by a qualified archaeologist, avoidance of sites, or preservation in place.
- All projects shall include the following requirements as a condition of approval: If evidence of any prehistoric or historic-era subsurface archaeological features or deposits are discovered during construction-related earth-moving activities (e.g., ceramic shard, trash scatters, lithic scatters), all ground-disturbing activity in the area of the discovery shall be halted and the county shall be notified immediately. A qualified archaeologist shall be retained to assess the significance of the find. If the find is a prehistoric archaeological site, the appropriate Native American group shall be notified. If the archaeologist determines that the find does not meet NRHP or CRHR standards of significance for cultural resources, construction may proceed. If the archaeologist 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 archaeologist (i.e., because the find is determined to constitute either a historical resource or a unique archaeological resource), the archaeologist shall work with the project 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 in recording any find, including submittal of the standard California Department of Parks and Recreation (DPR) Primary Record forms (Form DPR 523) and location information to the relevant information center, shall be followed.

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. However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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.

Therefore, this EIR discloses, for CEQA-compliance purposes, that impacts on archaeological resources associated with the proposed regulation could be **potentially significant and unavoidable**.

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

CalRecycle sent notification for consultation to three tribes on April 17, 2019. No responses were received at the time of release of this EIR. Because implementation of the proposed regulation would comply with PRC Sections 21080.3.2, 21084.3, and 5097.9, this impact would be **less than significant**.

Surface-disturbing activities associated with developing new and expanded facilities related to the proposed regulation could affect TCRs. No information was received from tribes regarding the potential resources that could be affected by implementation of SB 1383.

Individual projects associated with the proposed regulation would be required to prepare site-specific project-level analysis to fulfill CEQA requirements, which may include additional AB 52 consultation that could lead to the identification of TCRs. The consultation process required under PRC Section 21080.3.2 states that consultation concludes when either (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a TCR, or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

Additionally, public agencies shall, when feasible, avoid damaging effects on any TCR (PRC Section 21084.3[a]). If the lead agency determines that a project may cause a substantial adverse change to a TCR, and measures are not otherwise identified in the consultation process, new provisions under PRC Section 21084.3(b) describe mitigation measures that, if determined by the lead agency to be feasible, may avoid or minimize the significant adverse impacts.

No adverse impacts on TCRs are anticipated. Development of new or expanded organic waste recovery facilities associated with SB 1383 would be consistent with PRC Section 5097.9, which states that public agencies and private parties occupying or operating on public property will not interfere with the free expression or exercise of any Native American religious rites or cause damage to any Native American cemetery, place of worship, or religious or ceremonial site (see “Regulatory Setting” section, above). Further, development of facilities would be required to adhere to existing regulations, including CEQA and associated AB 52 consultation requirements, and processes of local jurisdictions and, where applicable the LEA. This would include evaluation of site-specific conditions by qualified personnel and site-specific consultation with appropriate Native American tribes, consistent with CEQA. If TCRs are identified through site-specific analysis and consultation, an assessment of impacts on these resources would be conducted and would include detailed measures to avoid impacts, which may include modification of the project to avoid adverse effects (i.e., physical demolition, destruction, relocation, or alteration) on significant resources. Adherence to existing requirements would avoid substantial adverse changes in the

significance of TCRs by requiring avoidance of these resources or through the performance of appropriate treatment measures, as determined through consultation with tribal representatives. Compliance with PRC Sections 21080.3.2, 21084.3, and 5097.9 would require consultation with tribes, avoidance of TCRs, and proper care of significant artifacts if they are recovered. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.4-4: Disturbance to Human Remains

Prehistoric or historic-era marked or unmarked human interments are present throughout California. Ground-disturbing activities related to construction of new or expanded organic waste recovery facilities could uncover previously unknown human remains. Compliance with California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097 would avoid disturbance. This impact would be **less than significant**.

Implementation of the proposed regulation would require development of various facilities to meet the mandated organic waste landfill disposal reduction goals and edible food recovery goals. The potential to uncover Native American human remains exists in locations throughout California, and there is a possibility that unmarked, previously unknown Native American or other graves, including those interred outside formal cemeteries, could be present where individual projects may be developed.

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 in the area of 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.

Compliance with California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097, requires avoiding or minimizing disturbance of human remains, and appropriately treating any remains that are discovered. In compliance with California law, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

3.5. Biological Resources

This section addresses common and sensitive biological resources that could be affected by implementation of the reasonably foreseeable compliance responses related to the proposed regulation. Because the proposed regulation applies statewide, this section generally describes the biological resources that are known or have the potential to occur in California. Biological resources include common 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 proposed regulation and identifies mitigation measures for those impacts determined to be significant.

No comments received on the notice of preparation were related to biological resources.

3.5.1. Regulatory Setting

Federal

Federal Endangered Species Act

The federal Endangered Species Act (ESA) requires formal or informal consultation with the U.S. Fish and Wildlife Service (USFWS) or the National Oceanic and Atmospheric Administration National Marine Fisheries Service when it is likely that a project could affect species federally listed as threatened or endangered. The purpose of the ESA is to conserve the ecosystems upon which listed species depend. The law's ultimate goal is to "recover" listed species such that the protections of the act are no longer needed. The ESA requires that recovery plans be developed that describe the steps necessary to restore the species. Similarly, the act provides for the designation of "critical habitat" when prudent and determinable. Critical habitat is geographic areas that contain physical and biological features essential to the conservation of the species and that may require special management considerations or protection. Critical habitat designations affect only federal agency actions or federally funded or permitted activities.

The act also regulates the "taking" of a species listed as threatened or endangered under the ESA. Under 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." USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in take. If implementing a project would result in take of a federally listed species, either the project applicant must acquire an incidental take permit under Section 10(a) of the ESA or, if a federal discretionary action is involved, the federal agency must consult with USFWS under Section 7 of the act.

Clean Water Act

Section 404 of the Clean Water Act (CWA) requires a project applicant 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; relatively permanent tributaries to any of these waters; and wetlands adjacent to 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 the U.S. Army Corps of Engineers (USACE) verification.

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).

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. MBTA provides that it shall 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." A 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 50 CFR 10.13. The list includes nearly all birds native to the United States.

State

California Environmental Quality Act Rare, Threatened, or Endangered Species

CEQA (PRC Section 21000 et seq.) and the State CEQA Guidelines (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." California Rare Plant Rank 1A, 1B, 2A, and 2B species are presumed to meet these criteria. 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

The California Department of Fish and Wildlife (CDFW) regulates the taking of species listed as threatened or endangered under CESA, which prohibits the taking of State-listed endangered or threatened species, as well as candidate species being considered for listing, without the issuance of incidental take permits. Project proponents may obtain an incidental take permit pursuant to Fish and Game Code Section 2081 if the impacts of the take are minimized and fully mitigated and if the take would not jeopardize the continued existence of the species. A “take” of a species, under CESA, is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" an individual of a species. The CESA definition of “take” does not include “harm” or “harass” as is included in the ESA definition. As a result, the threshold for take under CESA may be higher than under the ESA.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) requires that each of the nine RWQCBs prepare and periodically update basin plans for water quality control. 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, as well as areas that meet the definition of “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. 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 and 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 has adopted the following definition of wetlands:

> 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.

Section 1602 of the California Fish and Game Code

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW under Section 1600 et seq. of the California Fish and Game Code. Under Section 1602, it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by CDFW, or use any material from the streambeds, without first notifying CDFW of such activity and obtaining a final agreement authorizing such activity. CDFW's jurisdiction in altered or artificial waterways is based on the value of those waterways to fish and wildlife.

Local

Various City and County General Plans

General plans typically designate areas for land usages, guiding where new growth and development should occur while providing a plan for the comprehensive and long-range management, preservation, and conservation of and natural resources and open-space lands.

Various Local Ordinances

Local ordinances provide regulations for proposed projects for activities such as grading plans, erosion control, tree removal, protection of sensitive biological resources and open space.

3.5.2. Environmental Setting

California supports the highest degree of biodiversity any state, owing in part to the diversity of local climates and vegetation communities. The state's geography and topography have created distinct local climates ranging from high rainfall in northwestern mountains to the driest place in North America, Death Valley. North to south, the state extends for almost 800 miles, bridging the temperate rainforests in the Pacific Northwest and the subtropical arid deserts of Mexico. Many parts of the state experience Mediterranean weather patterns, with cool, wet winters and hot, dry summers. Summer rain is indicative of the eastern mountains and deserts, driven by the western margin of the North American monsoon. Along the northern coast abundant precipitation and ocean air produces foggy, moist conditions. High mountains have cooler conditions, with a deep winter snow pack in normal climate years. Desert conditions exist in the rain shadow of the mountain ranges (CDFW 2015).

While the state is largely considered to have a Mediterranean climate, it can be further subdivided into six major climate types: Desert, Marine, Cool Interior, Highland, Steppe, and Mediterranean. California deserts, such as the Mojave, are typified by a wide range of elevation with more rain and snow in the high ranges, and hot, dry conditions in valleys. 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. For

example, the San Joaquin Valley, exhibiting a Mediterranean climate, receives sufficient springtime rain to support grassland habitats, while still 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, located in coastal southern California (CDFW 2015).

California has the highest numbers of native and endemic plant species of any state, with approximately 6,500 species, subspecies, and varieties of plants, representing 32 percent of all vascular plants in the United States. Nearly one-third of the state's plant species are endemic, and California has been recognized as one of 34 global hotspots for plant diversity. Within the California Floristic Province, which encompasses the Mediterranean area of Oregon, California, and northwestern Baja, 2,124 of the 3,488 species are endemic, representing a 61 percent rate of endemism. 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 2015).

California has a large number of animal species, representing a substantial proportion of the wildlife species nationwide. The state's diverse natural communities provide a wide variety of habitat conditions for wildlife. The state's wildlife species include approximately 100 reptile species, 75 amphibian species, 650 bird species, and 220 mammal species. Additionally, 48 mammals, 64 birds, 72 amphibians and reptiles, and 20 freshwater fish live in California and nowhere else (CDFW 2015).

California exhibits a wide range of aquatic habitats from the Pacific Ocean to isolated hillside seeps, to desert oases that support both water-dependent species and provide essential seasonal habitat for terrestrial species. Perennial and ephemeral rivers and streams, riparian areas, vernal pools, and coastal wetlands support a diverse array of flora and fauna, including 150 animal and 52 plant species that are designated special-status species. The California Natural Diversity Database 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. California has approximately 70 native resident and anadromous fish species, and 72 percent of the native freshwater fishes in California are either listed, or possible candidates for listing as threatened or endangered, or are extinct (CDFW 2015).

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

Vegetation and Habitat Types

A vegetation community, or vegetation type, is an assemblage of plants that coexist in a similar environment (USNVC 2017). California supports over 100 forest and woodland vegetation types, over 200 chaparral and scrub types, and over 150 herbaceous

vegetation types (CDFW 2015). Vegetation types are defined by structure, growth form, and species composition. At finer scales, vegetation is grouped based on plant species that co-occur in a given area and interact with each other and their environment (USNVC 2017). At all scales, vegetation types can be described by repeating patterns of form, structure, and species composition and relationships to their environment. CDFW uses the terms natural communities and vegetation communities interchangeably (VegCAMP 2018).

Habitat generally refers to the environmental setting, or place, in which a plant or animal lives, including the abiotic (physical) and biotic factors that characterize that environment. Habitat is often characterized by a dominant plant form or physical characteristic and vegetation is often the best representation of habitat (VegCAMP 2018).

Sensitive Biological Resources

Special-Status Species

Plants and animals may be special-status species due to declining populations, vulnerability to habitat change, or restricted distributions. Special-status species include those species legally protected under CESA, the ESA, or other regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. 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 Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.);
- plants considered by CDFW to be “rare, threatened or endangered in California” (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) (note that 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.

Sensitive Natural Communities and Habitats

Sensitive habitats 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, and the State's Porter-Cologne Act. Sensitive natural 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. 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). In addition to habitats officially identified by CDFW as sensitive natural communities or meeting the definition of waters of the United States, other sensitive habitats include riparian habitats, oak woodlands, chaparral, and coastal sage scrub.

Sensitive Natural Communities

CDFW maintains a list of plant communities that are native to California. Sensitive natural communities are ranked by CDFW from S1 to S3, where S1 is critically imperiled, S2 is imperiled, and S3 is vulnerable. CDFW's natural-community rarity rankings follow the 2009 NatureServe Conservation Status Assessments: Methodology for Assigning Ranks (Faber-Langendoen et al. 2012), in which all alliances are listed with a global (G) and state (S) rank, where G1 is critically imperiled, G2 is imperiled, G3 is vulnerable, G4 is apparently secure, and G5 is secure. These communities may or may not contain special-status species or their habitat. Known occurrences of sensitive natural communities are included in the CNDDB; however, no new occurrences have been added to the CNDDB since the mid-1990s when funding was cut for this portion of the CNDDB program. Additionally, the sensitive natural communities included in the CNDDB are based on the Holland 1986 classification and are not consistent with the State's current vegetation mapping and classification standards. The legacy sensitive natural community data from CNDDB is currently being validated and moved to the Biogeographic Information and Observation System (BIOS). Sensitive natural communities are currently being mapped as part of the VegCAMP statewide vegetation mapping program and are being added to BIOS as mapping is completed and verified. VegCAMP data, the BIOS website, and local or regional vegetation maps would need to be reviewed during project specific analyses to help identify potentially occurring sensitive natural communities.

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

Waters of the United States include navigable waters of the United States; interstate waters; all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce; tributaries to any of these waters; and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. 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. To qualify for federal protection, wetlands must occur in hydrologic locations subject to federal jurisdiction and meet three wetland delineation criteria: hydrophytic vegetation, hydric soil types, and wetland hydrology. Many surface waters and wetlands in California meet the criteria for waters of the United States, including intermittent streams and seasonal lakes and wetlands.

Waters of the state are defined as any surface water or groundwater, including saline waters, within the boundaries of the state. This includes all waters of the United States, but also areas not regulated under the federal CWA (defined above in Section 3.5-1, “Regulatory Setting”).

Wetlands provide numerous ecological functions including flood water storage, groundwater recharge, shoreline stabilization, water filtration, and support of native biological diversity (Technical Advisory Team 2012). 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 and over 30 percent of plants and 50 percent of animals listed as threatened or endangered under the ESA depend on wetland habitats (Technical Advisory Team 2012). The California Wildlife Habitat Relationships system (CWHR) lists a total of 366 amphibians, reptiles, birds, and mammals in California that depend on aquatic habitats for their survival, including 34 species that are listed as threatened or endangered under the ESA or CESA.

Riparian Habitats

Riparian habitats are found on the banks, floodplains, and terraces of rivers and streams where flooding occurs periodically or where groundwater is near to the surface. Riparian habitat may be associated with lakes and other water bodies, as well, and are transitional areas between wetlands and uplands. Riparian habitats located near 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, and riparian habitats often support high wildlife species diversity and abundance relative to surrounding habitats. 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. Riparian vegetation stabilizes banks against erosion, provides shade to keep water temperatures down during summer months, provides cover for fish and amphibians, supports insects that feed fish, filters stormwater, and provides large woody debris input that provides vital habitat for salmonids and other aquatic species.

Many species of amphibians, reptiles, birds, and mammals use riparian habitats for nesting, foraging, roosting, or basking, and riparian areas can also serve as important wildlife movement corridors providing connectivity between other areas of natural habitat and between 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 habitat areas may qualify as waters of the United States if they occur within the ordinary high-water mark of waters of the United States or if they meet the three parameters of wetland vegetation, hydric soils, and wetland hydrology and are located in areas subject to federal jurisdiction.

Oak Woodlands

The importance of protecting oak woodlands is recognized through the passage of the Oak Woodlands Conservation Act and PRC Section 21083.4, which addresses how county lead agencies must address impacts on oak woodlands in environmental documents. Generally, a plant community is defined in the PRC as a forest land or woodland, rather than a grassland or shrubland, if there is at least 10 percent tree canopy cover (PRC Section 12220[g]). Oak woodlands have at least 10 percent tree cover and the tree layer is dominated by one or more species of oak. Oak woodlands provide important habitat to numerous common and special-status wildlife species supporting some 5,000 species of insects, over half of the state's 662 species of terrestrial vertebrates, and several thousand plant taxa (CDFW 2015; McCreary 2009). For this reason, oak woodland communities are considered sensitive habitats by wildlife resource agencies, including USFWS and CDFW; and many California counties have ordinances protecting oak woodlands.

Chaparral and Coastal Sage Scrub

Chaparral and coastal sage scrub are sensitive habitat types, because of the large-scale loss of these vegetation types from development and type conversion. Chaparral and coastal sage scrub vegetation provide essential habitat and other ecosystem functions in portions of California that are not suited to support grassland or forest and woodland vegetation due to geology, climate, topography, or other factors.

Chaparral is a type of shrubland vegetation dominated by drought-tolerant, deep-rooted shrubs with sclerophyllous (i.e., stiff, firm, hard), waxy, evergreen leaves such as manzanita (*Arctostaphylos* spp.), ceanothus (*Ceanothus* spp.), chamise (*Adenostoma fasciculatum*), redshank (*Adenostoma sparsifolium*), or scrub oak species (e.g., *Quercus berberdifolia*, *Q. dumosa*). Coastal sage scrub is also a shrubland vegetation type, but it is typically dominated by lower-growing, shallow-rooted, aromatic shrubs with soft, flexible branches, and soft, deciduous leaves that drop off in response to drought. Characteristic dominant shrubs in coastal sage scrub include California sagebrush (*Artemisia californica*), white sage (*Salvia apiana*), black sage (*Salvia mellifera*), purple sage (*Salvia leucophylla*), and buckwheat (*Eriogonum* spp.). CWHR includes a single, broad category, called coastal scrub, that captures the myriad of vegetation types referred to collectively as coastal sage scrub.

3.5.3. Environmental Impacts and Mitigation Measures

Methodology

This section describes impacts on biological resources from implementation of the reasonably foreseeable compliance response associated with SB 1383. This analysis considers impacts of construction and operation of facilities associated with the proposed regulation on biological resources. The precise locations of new or expanded facilities developed in response to the proposed regulation cannot be known at this time. In general, however, considering economic influences and land use planning restrictions, the locations of organic waste recovery facilities are reasonably expected to be associated with existing landfills or other solid waste facilities, within industrial or heavy commercial zoning districts, proximate to the sources of organic waste to control cost of collection and transport, and/or proximate to customers receiving treated products, such as compost or mulch, for similar cost-control reasons. Food recovery facilities and operations would be reasonably expected to locate in urban areas close to both the sources of discarded or donated food and the in-need recipients who may benefit from the recovered food. If future projects would affect sensitive biological resources, significance determinations assume that project proponents would comply with relevant federal, State, and local ordinances and regulations.

Thresholds of Significance

An impact on biological resources would be significant if implementation of the proposed regulation 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-protected or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal) 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; or
- conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, or State HCP.

Environmental Impacts and Mitigation Measures

Impact 3.5-1: Adverse Effect on Special-Status Species, Either Directly or through Habitat Modifications

It is reasonably foreseeable to expect new or expanded facilities to be located at or near existing landfills or material recovery facilities, or in urban locations zoned for industrial or heavy commercial use, so in most circumstances, adverse effects to sensitive species would not occur. However, the potential to intrude into or displace natural habitat supporting special-status species cannot be fully dismissed, such as for project sites on urban/rural edges. 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. Development of organic wasted recovery facilities could result in the disturbance or loss of special-status plant and wildlife species and habitats, if they are located in areas of natural habitat. Therefore, this impact would be categorized as **potentially significant**.

Reasonably foreseeable compliance responses that could result from implementation of the proposed regulation could include construction of new or expanded organic waste recovery facilities (such as composting, anaerobic digestion, and chip and grind facilities, among others) and related infrastructure at: existing waste management sites (e.g., landfills, compost facilities, MRFs); existing wastewater treatment plants (WWTPs); or near dairies (for manure composting only); or new standalone sites in areas zoned for industrial or solid waste-handling facilities. The proposed regulation could also include development of community-scale compost facilities and edible food recovery facilities in urban areas. Edible food recovery infrastructure could include the development of new, or reuse of existing, buildings or warehouses to support the collection, storage, preparation, and distribution of edible food. Edible food could be collected and transported by food recovery vehicles.

It is reasonably expected that new or expanded facilities would be located at or near existing landfills, material recovery facilities, or transfer stations on already disturbed sites, or in urban locations zoned for industrial or heavy commercial use, so adverse effects on natural habitats would not occur for most anticipated facility sites. Nonetheless, the potential to intrude into or displace natural habitats supporting special-status species cannot be fully dismissed, because future project sites may include natural landscape features, such as locations within the edges of an urban community and natural areas.

The specific locations of organic waste recovery facilities cannot be known at this time. Typically, if natural features supporting special-status species are present on a project site, a facility can be designed to not adversely affect them. However, to avoid the risk of understating a potential environmental effect, this analysis conservatively assumes that natural habitat supporting special-status species may be present within the footprint of future facilities that would be constructed to comply with SB 1383.

Potential localized effects on special-status species include the temporary and permanent removal or conversion of vegetation and habitat necessary for species breeding, feeding, dispersal, or sheltering. Construction and/or ongoing operations could result in direct mortality of special-status plants and wildlife, entrapment in open trenches, and general disturbance because of noise or vibration during pile-driving, earthmoving, and other construction activities. The accumulation of construction-generated dust on surrounding vegetation and construction-related erosion, runoff, and sedimentation could degrade the quality of adjacent vegetation communities, affecting their ability to support special-status plants and wildlife. Habitat fragmentation and disruption of migratory corridors also could occur on a local level, potentially affecting local populations by making them more vulnerable to extirpation.

Although it is reasonable to expect that most facility sites would be in disturbed and urban locations where natural habitat and sensitive species would not be present, organic waste recovery facility development sites could contain natural habitat and result in the disturbance or loss of special-status plant and wildlife species and habitats. Therefore, this impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.5-1: Incorporate Avoidance and Minimization Measures Consistent with Resource Agency Regulatory Requirements

If a proposed facility project site consists entirely of developed uses, fully disturbed land, non-native vegetation, or a combination thereof and natural habitat is not present, the proponent will report these conditions during the project's local government review process. No additional biological resource assessment or facility design responses are required.

If a proposed facility project site contains or is likely to contain natural habitat, the agency with approval authority over the project must require project sponsors to incorporate avoidance and minimization measures into the facility design, so that natural habitats and special-status species do not experience significant adverse effects.

If avoidance and minimization are not feasible, the proponent will coordinate with the appropriate resources agency to identify site-specific biological resource assessments to define the design features or other actions necessary to protect sensitive species and habitats, or compensate for habitat or species effects that cannot be avoided. The assessment shall be conducted by qualified professionals pursuant to adopted protocols and agency guidelines and applied to project regulatory compliance. The project proponent shall comply with the mitigation requirements needed to achieve permit approval by the appropriate resource agency, so that special-status species are adequately protected or adequate compensatory actions are included.

Significance after Mitigation

Implementation of Mitigation Measure 3.5-1 would result in avoided or substantially reduced impacts associated with adverse effects on special-status species, because these mitigation measures would require avoidance or minimization of project-related disturbance or loss of special-status species and natural habitat or compensatory actions, consistent with resources agencies responsible for regulatory permits. Implementation of the mitigation measure at a project level would reduce the impacts on special-status species. However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and Local Enforcement Agencies (LEAs).

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, this EIR discloses, for CEQA-compliance purposes, that impacts on special-status species resulting from the development of new and expanded facilities associated with the proposed regulation could be **potentially significant and unavoidable**.

Impact 3.5-2: Substantial Adverse Effects on Riparian Habitat, Federally Protected Wetlands, or Other Sensitive Natural Communities through Direct Removal, Filling, Hydrological Interruption, or Other Means

It is reasonably foreseeable to expect new or expanded facilities to be located at or near existing landfills or material recovery facilities, or in urban locations zoned for industrial or heavy commercial use, so in most circumstances, adverse effects to sensitive habitats would not occur. However, the potential to intrude into or displace sensitive habitats cannot be fully dismissed, such as for project sites on urban/rural edges. Potential impacts could include disturbance or loss of jurisdictional waters, including wetlands; loss or degradation of stream or wetland function; incremental degradation of wetland habitats; and fragmentation of streams and wetlands. Development of organic wasted recovery facilities could result in the disturbance or loss of sensitive habitats, if those resources are located at future project sites. Therefore, this impact would be **potentially significant**.

Reasonably foreseeable compliance responses that could result from implementation of the proposed regulation could include: operation of new or expanded organic waste recovery facilities (such as composting, anaerobic digestion, and chip and grind facilities, among others) at: existing waste management sites (e.g., landfills, compost facilities, MRFs); existing WWTPs; near dairies (for manure composting only); or new standalone sites in areas zoned for industrial or solid waste handling facilities. The proposed regulation would also involve operation of biogas facilities and local community-scale compost and edible food recovery facilities.

It is reasonably expected that new or expanded facilities would be located at or near existing landfills, material recovery facilities, or transfer stations on already disturbed

sites, or in urban locations zoned for industrial or heavy commercial use, so adverse effects on natural habitats would not occur for most anticipated facility sites. Nonetheless, the potential to intrude into or displace sensitive habitats cannot be fully dismissed, because future project sites may include natural landscape features, such as locations within the edges of an urban community and natural areas.

The specific locations of organic waste recovery facilities cannot be known at this time. Typically, if sensitive habitats are present on a project site, a facility can be designed to not adversely affect them. However, to avoid the risk of understating a potential environmental effect, this analysis conservatively assumes that sensitive habitats may be present within the footprint of future facilities that would be constructed to comply with SB 1383.

Potential impacts on wetlands include the temporary disturbance, or permanent loss, of jurisdictional waters, including wetlands; loss or degradation of stream or wetland function; incremental degradation of wetland habitats; and fragmentation of streams and wetlands. Jurisdictional waters in the region vary from relatively small, isolated roadside areas, wet meadows, and vernal pools to major streams and rivers, bays and estuaries, and tidal, brackish, and freshwater marshes. Any fill of jurisdictional waters associated with proposed land development would be considered a significant impact.

In addition to direct habitat loss, development of new facilities related to the proposed regulation could increase the potential for stormwater runoff to carry a variety of pollutants into wetlands, rivers, streams, and other waterways through increases in the extent of impervious surfaces. Construction runoff often carries grease, oil, and heavy metals (because of ground disturbance) into natural drainages. Furthermore, particulate materials generated by construction could be carried by runoff into natural waterways and could increase sedimentation impacts. In accordance with USACE, the U.S. Environmental Protection Agency, USFWS, RWQCB, and CDFW guidelines, a goal of “no net loss” of wetland acreage and value is required, wherever possible, through avoidance of the resource. Where avoidance is not possible, mitigation for wetland impacts would be based on project-specific wetland mitigation plans, subject to approval by USACE, RWQCB, CDFW, and the California Coastal Commission (CCC) where applicable. The potential proximity of sensitive habitats to future individual organic waste recovery projects associated with SB 1383 implementation is unknown. Therefore, this impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.5-2: Avoid or Minimize Impacts, or Compensate for Unavoidable Loss of Sensitive Habitat

If a proposed facility project site contains or is likely to contain sensitive habitats, the agency with approval authority over the project shall require project sponsors to incorporate avoidance and minimization measures into the facility design, so that natural habitats and special-status species do not experience significant adverse effects.

In keeping with the “no net loss” policy for wetlands and other waters, project designs shall be configured, whenever possible, to avoid wetlands and other waters and avoid disturbances to wetlands and riparian corridors to preserve both the habitat and the overall ecological functions of these areas. Projects shall minimize ground disturbances and transportation project footprints near such areas to the extent practicable.

Where avoidance of jurisdictional waters is not feasible, project sponsors must minimize fill and the use of in-water construction methods, and place fill only with express permit approval from the appropriate resources agencies (e.g., USACE, RWQCB, CDFW, BCDC, and CCC) and in accordance with applicable existing regulations, such as the CWA or local stream protection ordinances.

Project sponsors can arrange for compensatory mitigation subject to approval by the USACE, RWQCB, CDFW, BCDC, and CCC, as applicable.

Significance after Mitigation

Implementation of Mitigation Measure 3.5-2 would result in avoided or substantially reduced impacts associated with adverse effects on sensitive habitats, because these mitigation measures would require avoidance or minimization of project-related disturbance or loss of sensitive habitat or compensatory actions, consistent with resources agencies responsible for regulatory permits. Implementation of the mitigation measure at a project level would reduce the impacts on sensitive habitats. However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, this EIR discloses, for CEQA-compliance purposes, that impacts on sensitive habitats resulting from the development of new and expanded facilities associated with the proposed regulation could be **potentially significant and unavoidable**.

Impact 3.5-3: Substantial Interference with the Movement of Any Native Resident or Migratory Fish or Wildlife Species or with Established Native Resident or Migratory Wildlife Corridors

It is reasonably foreseeable to expect new or expanded facilities to be located at or near existing landfills or material recovery facilities, or in urban locations zoned for industrial or heavy commercial use, so interference with fish or wildlife movement would not occur. Even if located on the urban/rural edge, development of new facilities associated with the proposed regulation would not occupy sufficient natural landscape to substantially interfere with native resident or migratory wildlife corridors. Therefore, this impact would be **less than significant**.

Reasonably foreseeable compliance responses that could result from implementation of the proposed regulation could include: operation of new or expanded organic waste recovery facilities (such as composting, anaerobic digestion, and chip and grind facilities, among others) at: existing waste management sites (e.g., landfills, compost facilities, MRFs); existing WWTPs; near dairies (for manure composting only); or new standalone sites in areas zoned for industrial or solid waste handling facilities. The proposed regulation would also involve operation of biogas facilities and local community-scale compost and edible food recovery facilities.

It is reasonably expected that new or expanded facilities would be located at or near existing landfills, material recovery facilities, or transfer stations on already disturbed sites, or in urban locations zoned for industrial or heavy commercial use, so adverse effects on sufficiently large areas of natural landscape to substantially interfere with wildlife movement would not occur. 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 would not involve substantial change to wildlife movement. In such locations, urban development would need to be of substantial size or extend substantially into the natural landscape to inhibit wildlife movement. The reasonable expectation for new or expanded organic waste facility sites would be that facility sites would not be sufficiently large for this consequence. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

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

It is reasonably foreseeable to expect new or expanded facilities to be located at or near existing landfills 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 facilities associated with the proposed regulation 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**.

Reasonably foreseeable compliance responses that could result from implementation of the proposed regulation could include: operation of new or expanded organic waste recovery facilities (such as composting, anaerobic digestion, and chip and grind facilities, among others) at: existing waste management sites (e.g., landfills, compost facilities, MRFs); existing WWTPs; near dairies (for manure composting only); or new standalone sites in areas zoned for industrial or solid waste handling facilities. The proposed regulation would also involve operation of biogas facilities and local community-scale compost and edible food recovery facilities.

Most counties and cities in the state have plans and/or local policies in place that protect native and nonnative 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.

It is reasonably foreseeable to expect new or expanded facilities to be located at or near existing landfills 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 facilities associated with the proposed regulation 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. Additionally, project-level planning, environmental analysis, and compliance with existing local regulations and policies would identify potentially significant tree removal or other potential conflicts with local policies; minimize or avoid those impacts through the design, siting, and permitting process; and provide mitigation for any significant effects as a condition of project approval and permitting. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

This page intentionally left blank.

3.6. Energy

This section was prepared pursuant to Section 15126 and Appendix G of the State CEQA Guidelines, which require that EIRs include a discussion of the potential energy impacts of projects. The analysis considers whether the proposed regulation would result in the inefficient, wasteful, and unnecessary consumption of energy and whether it is consistent with existing plans for renewable energy and energy efficiency.

3.6.1. Regulatory Setting

Many federal, State, and local statutes and policies address the management of energy resources. Energy policies relevant to the proposed regulation, including laws and regulations pertaining to electricity generation, transportation fuels, and efficiency standards, are described in this section.

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 (NHTSA), part of the U.S. Department of Transportation, 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 its vehicles produced for sale in the country. The U.S. Environmental Protection Agency (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. The U.S. Department of Transportation is authorized to assess penalties for noncompliance based on information generated under the CAFE program. The Energy Independence and Security Act of 2007 (described below) identifies the current CAFE standards.

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. It includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. The 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 the 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 was designed to improve vehicle fuel economy and help reduce U.S. dependence on oil. It 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 fivefold increase over current levels, and it reduces U.S. demand for oil by originally setting a CAFE standard of 35 miles per gallon (mpg) by 2020—an increase in fuel economy standards of 40 percent. In 2012, the NHTSA amended the CAFE standard to achieve 54.5 mpg by 2025.

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. In August 2018, NHTSA and EPA proposed the Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks. This rulemaking, if adopted, would potentially decrease the stringency of CAFE standards.

State

Integrated Energy Policy Report

SB 1389 (Chapter 568, Statutes of 2002) required the California Energy Commission (CEC) to "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The Energy Commission shall use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety" (PRC Section 25301[a]).

In response to this requirement, CEC publishes an Integrated Energy Policy Report (IEPR) every 2 years and an update every other year. The 2017 IEPR, the most recent IEPR, was approved March 16, 2018. The 2017 IEPR provides a summary of priority energy issues currently facing the state, outlining strategies and recommendations to further the State's goal of ensuring reliable, affordable, and environmentally responsible energy sources. Energy topics covered in the report include progress toward statewide renewable energy targets and issues facing future renewable development; efforts to increase energy efficiency in existing and new buildings; progress by utilities in achieving energy efficiency targets and potential; improvements in coordination among the State's energy agencies; streamlining of power plant licensing processes; results of preliminary forecasts of electricity, natural gas, and transportation fuel supply and demand; future energy infrastructure needs; the need for research and development efforts to statewide energy policies; and issues facing California's nuclear power plants.

Warren-Alquist Act

The 1974 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as the California Energy Commission. It was created in response to the State Legislature's review of studies that projected an increase in statewide energy demand, which had prompted interest in the development of nuclear power plants in environmentally sensitive coastal areas. In the recitals contained in the act, the legislature stated that it "finds and declares that the present rapid rate of growth in demand for electric energy is in part due to wasteful, uneconomic, inefficient, and unnecessary uses of power and a continuation of this trend will result in serious depletion or irreversible commitment of energy, land and water resources, and potential threats to the state's environmental quality" (PRC Section 25002). To address these concerns, the act authorized CEC to serve as a power plant siting authority and to develop regulations to reduce energy consumption in buildings.

Implementation of the energy conservation requirements of the act led to the creation of the Building Energy Efficiency Standards (California Energy Code) codified under CCR Title 24, Part 6 and the Appliance Efficiency Program, codified under CCR Title 20. These regulations, which remain in effect today, are updated regularly in response to agency priorities for energy conservation identified in the IEPR. The California Energy Code mandates design standards for residential and commercial buildings that are enforced through the local plan check and building permit process. Local agencies may additionally adopt and enforce more stringent building energy efficiency standards as reasonably necessary because of local climatologic, geologic, or topographic conditions.

The act additionally directed CEC to cooperate with the Office of Planning and Research, the California Natural Resources Agency, and other interested parties to develop procedures to ensure that measures intended to minimize the wasteful, inefficient, and unnecessary consumption of energy are included in all EIRs required pursuant to CEQA (PRC Section 25404).

California Building Energy Efficiency Standards

The California Energy Code was established by CEC in 1978 in response to the Warren-Alquist Act. CEC updates the California Energy Code every 3 years with more stringent design requirements for reduced energy consumption.

The 2019 California Energy Code was adopted by CEC on May 9, 2018, and will apply to projects constructed after January 1, 2020. Energy consumption in nonresidential buildings, which include commercial occupancy types, is anticipated to be reduced by 30 percent as compared to the 2016 California Energy Code primarily through prescriptive requirements for high-efficiency lighting (CEC 2018a).

The California Green Building Standards (CALGreen) contained in Title 24, Part 11 of the CCR are model building codes that can be optionally adopted by local agencies to enforce building design standards that exceed State minimum requirements. CALGreen

was introduced by CEC in 2010 and received major updates in 2013 and 2016. In 2018, CEC adopted a 2019 CALGreen update that will be available for local agency adoption starting on January 1, 2020. Energy sections of the CALGreen code include standards for increased building energy efficiency and electric vehicle charging. For CALGreen energy standards that exceed the California Energy Code to become required at the local level, they must be adopted by ordinance into the local municipal code after demonstrating cost-effectiveness and energy savings and obtaining final approval by CEC.

California Renewables Portfolio Standard Program

SB 1078 (Chapter 516, Statutes of 2002) established a renewable portfolio standard (RPS) for statewide retail electricity, requiring that utilities procure 20 percent of their marketed electricity from renewable energy sources. Subsequent legislation increased the percentage of renewable energy required, set specific target years, and expanded the types of entities covered under the RPS. The State has reported that 34 percent of statewide retail electricity was sourced from certified renewable sources in 2018 (CEC 2019a). The current RPS, revised under SB 100 (de León; Statutes of 2018), requires that investor-owned utilities, energy service providers, community choice aggregators, and rural electric cooperatives supply 44 percent of retail sales from renewable energy sources by December 31, 2024, 50 percent by December 31, 2026, 52 percent by December 31, 2027, and 60 percent by December 31, 2030. SB 100 also introduced a requirement that 100 percent of retail sales of electricity come from qualified renewable or zero-carbon energy sources by December 31, 2045.

Executive Order S-06-06

Executive Order S-06-06, signed on April 25, 2006, establishes targets for the use and production of biofuels and biopower, and directs State agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes numerical targets to increase the production and use of bioenergy within California, including ethanol and biodiesel fuels made from renewable resources. These targets entail the in-state production of a minimum of 20 percent of total biofuels consumed within California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for the use of electricity from biomass conversion facilities. The 2011 Bioenergy Action Plan identifies barriers to meeting those targets and recommends actions to address them so that the state can meet its clean energy, waste reduction, and climate protection goals. The 2012 Bioenergy Action Plan updates the 2011 plan and provides a more detailed action plan to achieve the following goals:

- increase environmentally and economically sustainable energy production from organic waste;
- encourage development of diverse bioenergy technologies that increase local electricity generation, combined heat and power facilities, renewable natural gas, and renewable liquid fuels for transportation and fuel cell applications;

- create jobs and stimulate economic development, especially in rural regions of the state; and
- reduce fire danger, improve air and water quality, and reduce waste.

As of 2017, approximately 3 percent of the total electricity system power in California was derived from biomass (CEC 2018b). There are about 30 biomass conversion facilities in California with a total capacity of almost 640 megawatts (MW). These plants typically combust biomass from forest (43 percent), urban wood (29 percent), agricultural or food waste (21 percent), and municipal solid waste (7 percent) sources (CEC 2019b).

Bioenergy Market Adjusting Tariff Program

SB 1122 (Rubio) directed the California Public Utilities Commission to develop regulations to encourage electrical generation from bioenergy sources. The program that was created in response to this legislation is the Bioenergy Market Adjusting Tariff Program. This program established feed-in tariffs that provide incentives to encourage the generation of electricity from bioenergy projects with output capacities of 5 MW or less. Subsequent amendments to the legislation also required the state's three major investor-owned utilities—Pacific Gas and Electric Company, Southern California Edison, and San Diego Gas & Electric Company—to collectively procure 250 MW of electricity from bioenergy sources. Each utility's share of this procurement requirement is apportioned in accordance with the utility's market share and is further divided into three categories based upon feedstocks and conversion technologies. Category 1 includes biogas from wastewater treatment, municipal organic waste landfill disposal reductions, food processing, and codigestion. Category 2 includes biogases derived from dairy and agricultural residue. Category 3 includes bioenergy using byproducts of sustainable forest management, particularly vegetation from high-hazard fire zones.

Assembly Bill 2076: Reducing Dependence on Petroleum

Pursuant to AB 2076 (Chapter 936, Statutes of 2000), CEC and CARB prepared and adopted a joint agency report called *Reducing California's Petroleum Dependence* (CEC and CARB 2003). Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030. Further, in response to CEC's 2003 and 2005 IEPRs, Governor Davis directed CEC to take the lead in developing a long-term plan to increase alternative fuel use. A performance-based goal of AB 2076 was to reduce petroleum demand to 15 percent below 2003 demand by 2020.

Assembly Bill 1007: State Alternative Fuels Plan

AB 1007 (Chapter 371, Statues of 2005) required CEC to prepare a state plan to increase the use of alternative fuels in California. In response, CEC in partnership with CARB and in consultation with other State, federal, and local agencies, prepared the State Alternative Fuels Plan (SAF Plan). The SAF Plan presents strategies and actions that 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 SAF 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.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of standards for vehicle model years 2017–2025. The new rules strengthen the GHG standard for 2017 models and beyond. This standard will be achieved through the use of existing technologies, stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The State provides ongoing financial incentives for the construction of hydrogen fuel stations through funding appropriated by AB 8 (Perea) and CEC's Alternative Fuel Technology Program. By 2025, when the Advanced Clean Cars Program rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions than the statewide fleet in 2016 (CARB 2016).

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 energy resources may include general plan policies and ordinances protective of these resources. This EIR assumes that the reasonably foreseeable compliance responses associated with implementation of SB 1383 would be consistent with local plans, policies, and ordinances to the extent that anticipated organic waste handling infrastructure projects are subject to them, because local land use and permit approvals are typically conditioned upon such consistency.

3.6.2. Environmental Setting

Physical Setting

Statewide Energy Facilities and Services

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. One-third of the energy consumed in California is natural gas. In 2014, approximately 35 percent of the natural gas consumed in the state was used to generate electricity. Power plants in California generate approximately 70 percent of the in-state electricity demand, with large hydroelectric plants in the Pacific Northwest and power plants in the southwestern United States generating the remaining electricity (CEC 2017). The contribution of in-

and out-of-state power plants depends on many factors, including the amount of precipitation that occurred in the previous year. If the state receives abundant rainfall during winter, then more in-state hydropower can be used in spring and summer to provide the base load for the state's electrical grid. During drought years, in-state hydropower is reduced and requires the import of power from other states, such as Oregon and Washington.

Energy Use for Transportation

On-road vehicles use about 90 percent of the petroleum consumed in California. Gasoline and diesel fuel constitute 83 and 17 percent of petroleum-based fuels sold in California, respectively. According to the California State Board of Equalization, 15.58 billion gallons of gasoline and 3.12 billion gallons of diesel fuel were sold in 2017 (CEC 2019b). Gasoline and diesel fuel sold in California for motor vehicles and equipment are refined in California to meet specific formulations required by CARB. Medium and heavy-duty vehicles that consume gasoline and diesel fuels are used for construction and business operations. Transfer trucks used to haul waste between processing facilities are typically Class 8b trucks powered by diesel fuels. Table 3.6-1 shows the estimated fuel economy for model year 2010 vehicles in these categories. Waste collection throughout California is supported by a fleet of heavy-duty trucks, defined by CARB as Solid Waste Collection Vehicles (SWCVs). SWCV trucks have Gross Vehicle Weight Ratings greater than 14,000 pounds and are equipped with mechanical devices used for loading waste containers (CARB 2008). SWCVs are powered using diesel fuel or natural gas. CARB's 2017 Emissions Factor (EMFAC) model estimates that around 15,400 SWCVs operated statewide in 2019 with 56 percent powered by diesel fuel and 44 percent powered by natural gas.

California has a growing number of AFVs as a result of the joint efforts of CEC, CARB, local air districts, the federal government, transit agencies, utilities, and other public and private entities. As of March 2019, California had more than 20,000 alternative fueling stations (AFDC 2019).

Table 3.6-1 Fuel Economy of Medium- and Heavy-Duty Vehicles for 2010 Model Years

Vehicles	Load-Specific Fuel Consumption (gal/1000 ton-miles) 2002 VIUS	Load-Specific Fuel Consumption (gal/1000 ton-miles) 2011 Standard	Payload (tons) 2002 VIUS	Payload (tons) 2011 Standard	Fuel Economy (MPG) 2002 VIUS	Fuel Economy (MPG) 2011 Standard
Class 8b combination long-haul vans	7.8[a]	8.6[a]	20.4	19.0	6.3[a]	6.1[a]
Diesel Class 8b combination short-haul vans	7.7[a]	9.4[a]	20.5	19.0	6.3[a]	5.6[a]
Diesel Class 8b dump trucks	7.0[a]	23.2[a]	22.6	7.5	5.0[a]	5.7[a]
Diesel Class 8b refuse trucks	20.9[a]	23.2[a]	9.8	7.5	3.0[a]	5.7[a]
Diesel Class 6 vocational trucks	25.5[a]	24.3[a]	4.8	5.6	7.7[a]	7.3[a]
Diesel Class 4 vocational trucks	41.6[a]	40.0[a]	2.4	2.9	9.5[a]	8.8[a]
Gasoline Class 6 vocational trucks	33.0[b]	24.3[a]	4	5.6	7.5[b]	7.3[b]

Notes: MPG = miles per gallon; LSFC = Load-Specific Fuel Consumption; VIUS = Vehicle Inventory and Use Survey

a. In diesel gallons.

b. In gasoline gallons

Source: Cai et al. 2015

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.g., E-10 and E-85, which are ethanol-gasoline blends containing 10 or up to 85 percent ethanol content, respectively),
- hydrogen,
- natural gas (methane in the form of compressed and liquefied natural gas),
- propane,
- renewable diesel (including biomass-to-liquid),
- synthetic fuels, and
- gas-to-liquid and coal-to-liquid fuels.

3.6.3. Environmental Impacts and Mitigation Measures

Methodology

This section analyzes the energy consumption associated with the reasonably foreseeable compliance responses to the proposed regulation. These responses could foreseeably include the construction of new or expanded organic waste handling facilities (e.g., compost, anaerobic digestion, and chip and grind facilities, among others) and the collection and hauling of feedstocks, recovered food, and processed products (e.g., compost and biofuels) between sources of generation, disposal, processing, and consumption. The energy needs of equipment used to construct and operate organic waste handling facilities are characterized. Fuel consumption associated with the hauling of organic materials for bioenergy feedstocks, food recovery, and composting are described. Existing regulations and plans that encourage the efficiency of vehicles and mechanical equipment are identified where applicable. The capabilities of organic waste handling facilities to produce renewable energy for on-site and off-site consumption consistent with State energy plans and regulations are also analyzed.

Thresholds of Significance

An energy impact would be significant if implementation of the proposed regulation would:

- result in the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation; or
- conflict with or obstruct a state plan for renewable energy or energy efficiency.

Issues Not Discussed Further

The specific designs, locations, and capacities of individual facilities that would influence the overall energy requirements resulting from the proposed regulation cannot be known at this time. Project-level siting and design considerations would be decided by private applicants and local land use and permitting agencies in the future. Additionally, the activities resulting from the proposed legislation would take place in the approximately 540 jurisdictions located throughout California. For these reasons, this analysis does not include quantification of the total energy requirements associated with the proposed regulation and focuses primarily on statewide energy policies.

Environmental Impacts and Mitigation Measures

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

The proposed regulation would likely result in reasonably foreseeable compliance responses that require the use of fuels and electricity during construction and operation of new or expanded organic waste handling facilities and hauling routes. The efficiency of equipment and vehicles consuming these energy resources is mandated by existing State laws and regulations. Some of the organic waste handling facilities anticipated to be constructed in response to the proposed regulation can produce renewable energy resources that would offset a portion of energy consumption associated imp and support the state in achieving renewable energy generation and alternative fuel goals. For these reasons, this impact would be **less than significant**.

Construction-Related Energy at New Processing Facilities

It is reasonably foreseeable that organic waste landfill disposal reductions in response to the proposed SB 1383 regulations would result in the development of new or expanded organic waste handling facilities in the state. The types of facilities that would be constructed under a foreseeable compliance response include an estimated 61 AD facilities, 108 composting facilities, and a smaller numbers of other organic waste handling facilities. These facilities could potentially be located at existing solid waste facilities or be designed as standalone facilities at new project sites. The proposed regulation could also include construction of community-scale composting facilities and infrastructure to support expanded edible food recovery programs.

Construction of AD, composting, and other organic waste handling facilities would require the use of energy-consuming equipment for site preparation, grading, building assembly, and equipment installation. A wide variety of equipment powered through the combustion of liquid fuels may be used during the construction of new or expanded organic waste handling facilities. Examples of equipment typically used during construction include pavers, trenchers, mixers, cranes, dumpers/tenders, excavators, graders, tractors, trucks, forklifts, dozers, loaders, and scrapers. Internal-combustion engines that consume diesel and gasoline typically power these types of equipment and can have outputs ranging from 5 to 750 horsepower. Off-road equipment with diesel

engines of 25 horsepower or larger are regulated by CARB for purposes of emissions reductions (13 CCR Section 2449). These regulations require operators to limit idling during operation and to upgrade older equipment with modern engines, which additionally provides benefits for the reduction of fuel consumption.

Construction of organic waste handling facilities generally would occur over several months in phases with different types of equipment operated at each phase. The most energy-intensive uses would occur during the early phases of site construction when heavy-duty off-road equipment powered by diesel fuels would be used to prepare the site for building construction (if required).

The transportation of workers and materials to and from project sites would require the consumption of diesel and gasoline fuels. Medium- and heavy-duty trucks and vans with Gross Vehicle Weight Ratings between 8,500 and 33,000 pounds would typically be used. Under CARB's Truck and Bus Regulations, vehicles with a Gross Vehicle Weight Rating greater than 14,000 pounds are required to have diesel engines built to 2010 standards no later than 2023 (CARB 2018). Table 3.6-1, above, shows the estimated fuel economy of heavy-duty vehicles in the 2010 model year, which would be the minimum efficiency of the statewide fleet by 2023.

Operational Energy at New or Expanded Organic Waste Handling Facilities

The machinery and any buildings used at new or expand organic waste handling facilities would require the use of electricity and liquid and gaseous fuels. Electricity could be obtained through a connection to a utility or produced on-site using solar photovoltaics or fuel-powered generators. Fuels would be delivered through pipelines, delivered by truck, or sourced on-site from refined biomethane or biodiesel fuel created as a byproduct of organic waste processing at certain organic waste handling facilities (such as AD facilities). The amount of energy required at each facility would depend on the total waste-handling capacity and number of processes needed to convert available feedstocks into marketable byproducts.

Components of AD facilities requiring the use of energy include impellers to mix the contents of digesters; heating elements for digesters to initiate biological reactions; belts to convey waste materials; and pumps to transfer water, waste, and digestate (the material remaining after the anaerobic digestion of a biodegradable feedstock) at various stages of processing. For composting facilities, windrows and aerated static piles (ASP) are the primary technologies used and anticipated for future deployment in California. New ASP compost facilities are more likely to be constructed than windrow composting facilities given their smaller footprint and the need to meet stringent air quality and water quality permitting requirements.

Windrows that process organic waste at the commercial scale use mechanical equipment called turners that mix composting material to facilitate decomposition in a manner that limits methane emissions. These machines can be designed as attachments to front-loading tractors or as specialized, self-propelled units. During the turning process, diesel fuel would be consumed to drive the equipment and power

instruments used for fluffing composting material. The energy consumption of these types of turners can vary based on the size of the equipment and duration of use. Estimates from CARB OFFROAD 2007 emissions modeling software indicate that crawling tractors with outputs of 175, 250, and 500 horsepower would consume 5.5, 7.5, and 11.7 gallons of diesel fuel per hour, respectively.

Composting facilities can also use ASP technologies to facilitate the decomposition of organic materials by using electricity-powered blowers to push or pull air through pipes buried below composting piles. To optimize efficiency, blowers are often connected to timers and automated control systems that cycle fans based on temperature and oxygen content. Some ASP facilities have demonstrated the successful use of solar panels to supply electricity to blowers and other processing equipment (SJVAPCD 2013). The option of switching the fuel used by equipment at ASP composting facilities from diesel to electricity combined with on-site photovoltaic electricity generation is being researched as an approach to meet local air quality standards and allow the siting of composting facilities in remote areas where connections to utility electrical grids are unavailable. If grid-sourced electricity is used for these processes, it would be supplied by utilities that generate power with increasingly larger shares of renewable energy sources to meet the procurement targets required under the State RPS.

Transportation Fuel Consumption for Organic Waste Collection, Waste Transport, Processed Product Transport, and Food Recovery

The movement of material to and from organic waste handling facilities would require the consumption of fuels in on-road motor vehicles. The types of fuels used in vehicles that collect and transport waste include gasoline, diesel fuel, renewable diesel fuel, and compressed natural gas. Existing collection routes between customers and MRFs could potentially be used to collect SB 1383 targeted organic waste. For a detailed discussion of transportation routes and related effects on statewide vehicle miles of travel (VMT) associated with the proposed regulation, see Section 3.13, “Transportation.”

Redirecting organic waste from landfill disposal to food recovery would shift a portion of food waste disposition from landfills operating on the periphery of metropolitan areas to food recovery organizations and food recovery services in urbanized areas. Logistics for recovering food would entail the transport of waste over shorter distances, using delivery vehicles with higher fuel efficiency. However, larger fleets to accommodate an increased number of destinations and the stop-and-go nature of urban traffic patterns may offset improvements in fuel efficiency from operating smaller vehicles.

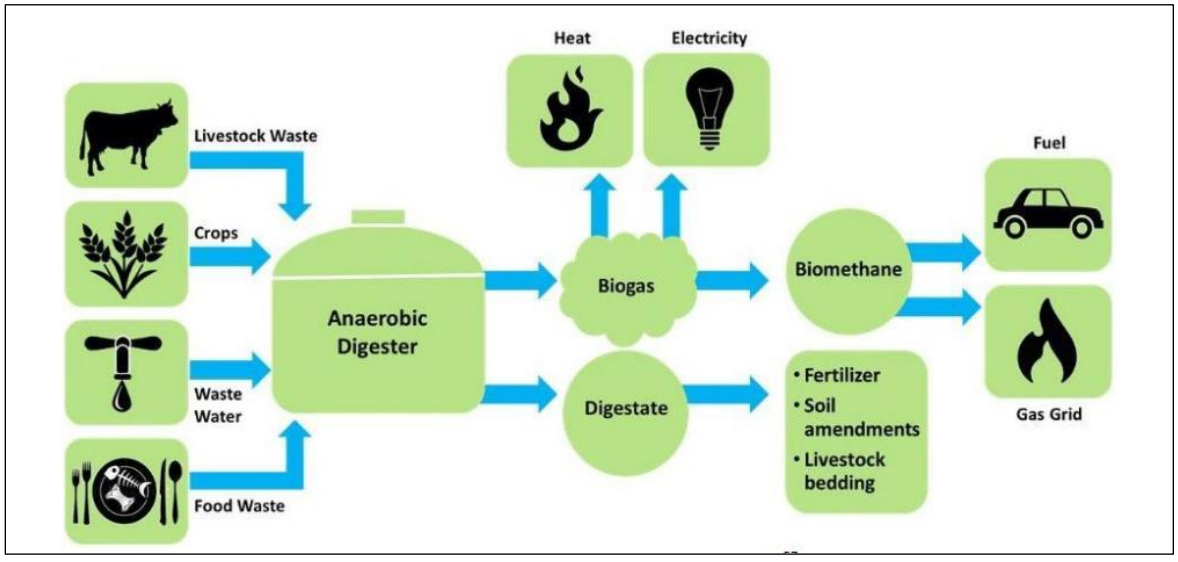
The addition of routes between MRFs and new or expanded organic waste handling facilities could potentially increase the amount of fuel consumed compared to current practices. The movement of compost products from new composting facilities to agricultural areas would entail the transport of materials in medium and heavy-duty vehicles. The fuel economy of medium- and heavy-duty vehicles decreases as payloads increase (Cai et al. 2015). The hauling of dense and damp compost produced at composting facilities 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. For the same reason that transport fuel costs can be substantial, AD facilities are incentivized to locate close to sources of generation and close to existing infrastructure where produced biofuels, or electricity derived from biofuels, can be introduced back into the market. Close distances between organic waste handling facilities, sources of waste generation, and end uses would be reasonably expected to reduce the amount of fuels needed to transport organic materials.

Biofuel Production

Under Article 12 of the proposed regulation, local agencies would be required to procure minimum quantities of renewable natural gas and energy derived as a recovered organic waste product from certain organic waste handling facilities. For example, a byproduct of organic waste processing at AD facilities is biogas that can be used to produce electricity, heat, transportation fuels, and renewable natural gas (biomethane).

Figure 3.6-1 illustrates the waste-to-energy conversion process of AD. Biogas is a mixture of gases composed of 45- to 65-percent methane, 30- to 40-percent carbon dioxide, and small quantities of trace gases and moisture. Biogas can be combusted directly for heat and electricity generation or refined into biomethane for transportation or building energy use. The amount of biogas produced depends on the energy potential of supplied feedstocks. When all diverted organic feedstocks from the proposed regulation are considered, CalRecycle estimates that 1 ton of organic waste would convert to fuel at a rate of 19 diesel-gallon equivalents of transportation fuel, 26.89 therms of heating fuels, or 2,724 standard cubic feet of pipeline injectable biomethane.



Source: EESI 2017

Figure 3.6-1 Waste-to-Energy Conversion Process for Anaerobic Digestion

The production of biogas through AD facilities and the local procurement requirements for energy use would change the dynamics of biogas supplies throughout the state. Under current conditions in California, biogas is collected from the decomposition of organic waste at open and closed landfills. The captured biogas, identified as landfill gas, contains a mixture of gases composed of 40- to 60-percent methane, which is a range comparable to AD-produced biogas (EIA 2019). EPA estimates that during their operational lifetime, landfill gas systems will capture 60–90 percent of the methane produced by a landfill depending on system design and effectiveness. The primary purpose of landfill gas capture is to reduce the amount of GHG emissions released into the atmosphere, but a secondary benefit is the processing of biogas for transportation fuels, heating, pipeline gas, and electricity generation. Sixty-eight waste-to-energy facilities were operating in California as of February 2019. Not all biogas captured from these facilities is converted to energy use. Much of this potential fuel is flared according to annual data from EPA (EPA 2019).

The proposed regulation would reduce the organic waste deposited in landfills, which according to decay rate modeling (EPA 2016) would result in a reduction of landfill gas output at existing landfill-to-waste projects operating throughout the state over a 30-year period. However, under Article 3 of the proposed regulation, bins would be used to separate organic waste from municipal solid waste with greater precision, which would allow organic waste feedstocks with higher energy conversion potential, such as food waste, to be targeted to be sent to new or expanded AD facilities. Using this more specific approach, AD facilities could produce biogas with higher methane content. Additionally, this process would take weeks, rather than the 5–7 years typically required for landfills, to reach peak biogas production after organic waste disposal (ATSDR 2001). Sophisticated control systems used in AD facilities would allow methane from biogas to be captured and converted into marketable products with increased efficiency. In contrast to landfills that occupy large spaces on the periphery of metropolitan areas, AD facilities have a smaller footprint and can be strategically sited in locations that allow connectivity to the local electrical grid, gas pipelines, and transportation hubs where energy byproducts can be marketed. AD facilities could also be sited at existing WWTPs.

Finally, under the proposed regulation, the practice of flaring could be reduced. Although flaring may be necessary at landfills as a safety measure during the processing of biogas, the amount of flaring overall would be reduced compared to the amount that occurs under existing conditions, which could be wasteful given the numerous State policies mandating the use of alternative fuels in the electricity and transportation sectors, such as AB 1007, AB 2076, AB 1122, and the Low Carbon Fuel Standard. Given the proposed regulation’s requirements for local procurement of bioenergy resources in addition to achieving the GHG reduction goals of the SLCP Reduction Strategy, new AD facilities would be designed with goals to maximize the efficient conversion of biogas to alternative and renewable energy sources.

Summary

Although the proposed regulation could result in temporary uses of fuels during construction of facilities and an increase in transportation fuel consumption associated with the projected increase in statewide VMT, the fuel economy and emissions standards required by the State would minimize the total amount of fuel consumed by mandating more efficient vehicle fleets. Project-level environmental analyses for the development of individual organic waste handling facilities could provide a more detailed analysis of regional and local energy resources. The AD facilities have the potential to convert organic waste to biofuels that can be used in waste collection vehicles, produce renewable energy in a more efficient manner than current practices, and meet the energy transition targets deemed necessary by State agencies and the legislature. For these reasons, the impact of the project on energy resources would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.6-2: Conflict with or Obstruction of a State Plan for Renewable Energy or Energy Efficiency

The new facilities and programs that are anticipated to be needed in response to the proposed regulation may include buildings, equipment, and vehicles that are required to comply with existing State regulations for energy efficiency. The renewable electricity and fuels produced from the operation of facilities that process organic waste pursuant to the proposed regulation would support numerous State policies that mandate a transition to renewable energy. For these reasons, this impact would be **less than significant**.

The construction and operation of facilities and programs that reduction organic waste disposal would entail the use of buildings, equipment, and vehicles subject to State energy policies. Table 3.6-2 provides an overview of the State plans and regulations pertaining to energy efficiency and renewable energy and an analysis of the proposed regulation's consistency with these policies. An overarching theme across State policies is the goal to reduce energy consumption through efficiency and transition to energy generation with lower carbon intensities. The conversion of organic waste to renewable transportation fuels and renewable electricity production would not conflict with or obstruct but rather would support State goals for renewable energy generation. 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 for this impact.

Table 3.6-2 Applicable State Plans and Regulations for Energy Efficiency and Renewable Energy

Sector	Policy	Description	Consistency of Proposed Regulation
Renewable Electricity Generation	Renewable Portfolio Standards—SB 100	Load-serving entities must procure 60 percent of electricity from renewables by 2030 and zero-carbon by 2045.	Bioenergy generation from organic waste disposal would support utilities with meeting State RPS goals. Biogas electricity generation is RPS eligible under PRC Section 40106.
Renewable Electricity Generation	Bioenergy Market Adjusting Tariff Program—SB 1122	Investor-owned utilities must procure 250 MW of electricity from biomass conversion sources.	Organic waste feedstocks and in-state processing facilities created in response to the proposed regulation would support utilities with meeting procurement requirements under this program.
Building Energy Efficiency	California Energy Code— 24 CCR Part 6	2019 Title 24 Standards must be achieved.	Applicability of the California Energy Code would depend on the buildings and occupancy types of the proposed facilities. Commercial buildings would fall under the nonresidential section of this code, which contains efficiency standards that are required by existing California law to be enforced by cities and counties.
Industrial Equipment Energy Efficiency	20 CCR Section 1600 (State), 10 CFR Section 431 (Federal)	Design standards for the energy efficiency of industrial equipment, including electric motors, blowers, pumps, and heaters, must be met.	The manufacturing, sale, and import of industrial equipment in California, including machinery needed to operate organic waste handling facilities, would be required to comply with State and/or federal standards for energy efficiency.
Fuel Economy	Corporate Average Fuel Economy Standards and Advanced Clean Car Program	Vehicles must comply with fuel economy standards.	Vehicles manufactured and sold for use on California roadways are required to meet fuel efficiency standards enforced by CARB. These vehicles would be used for the hauling of organic waste under the proposed regulation.

Sector	Policy	Description	Consistency of Proposed Regulation
Alternative Transportation Fuels	State Alternative Fuels Plan—AB 1007	The plan encourages California businesses to develop fuel production technologies and produce low-carbon biofuels from in-state feedstocks.	Transportation fuels derived from organic waste diverted from landfills under the proposed regulation would support low-carbon biofuel production from in-state feedstocks.
Building Decarbonization	Climate Change Scoping Plan	The scoping plan requires: • RNG use in buildings • renewable energy generation	Facilities creating biofuels would support the direct use of RNG in buildings if delivered through pipeline injection. The consumption in buildings of electricity produced using RNG could help reduce the use of natural gas, a fossil fuel.
Alternative Fuels	Climate Change Scoping Plan	The scoping plan requires: • RNG use in vehicles • support of ZEV infrastructure	Projects would supply a reliable source of RNG throughout the state to meet local procurement requirements. The production of electricity using biofuel would reduce the carbon intensity of the electricity supply, thus supporting the efforts of local and regional governments to electrify vehicle transportation. ZEVs capable of hauling heavy loads of organic waste are not commercially available at this time, but their use could be explored as part of project-level designs in the future.

Notes: AB = Assembly Bill; AD = Anaerobic Digestion; CARB = California Air Resources Board; CCR = California Code of Regulations; CFR = Code of Federal Regulations; MW = megawatts; PRC = Public Resources Code; RNG = Renewable Natural Gas; RPS = renewable portfolio standard; SB = Senate Bill; ZEV = Zero Emissions Vehicle.

Source: Information compiled by Ascent Environmental in 2019

This page intentionally left blank.

3.7. Geology and Soils

This section describes current conditions relative to geology and soils within the state of California. It includes a description of soils and mineral resources, analysis of environmental impacts, and recommendations for mitigation measures for any significant or potentially significant impacts.

No comments received on the notice of preparation were related to geology and soils.

3.7.1. Regulatory Setting

Federal

National Earthquake Hazards Reduction Act

In October 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the United States. To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). The mission of 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.

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (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 (Bryant and Hart 2007). Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults. 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) (CCR 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. 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. 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).

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 associated with implementation of SB 1383 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.

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 inches and approximately 75 percent of the state's annual precipitation falls between November and March, primarily in the form of rain, with the exception of high mountain elevations (DWR 2003). Average annual precipitation ranges from more than 100 inches in the mountainous areas within the Smith River in Del Norte County to less than 2 inches in Death Valley, illustrating the extreme differences in precipitation levels within the state (Mount 1995:359). Overall, northern California is wetter than southern California with the majority of the state's annual precipitation occurring in the northern coastal region.

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 1997). 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 1997). 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 the risks posed by various types of landslides are different (Harden 1997).

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.

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 areas of California are more prone to earthquakes, such as northern, central, and southern coastal areas of California, all areas of California are prone to the effects of ground shaking due to earthquakes. Scientists have made substantial progress in mapping earthquake 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. Ground shaking could potentially 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.

Active Faults

A fault is defined as 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 (Bryant and Hart 2007).

In the state of California, earthquake faults have been designated as being active through a process that has been described by the1972 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).” 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.

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 (SWRCB 1999:Table D-1, D-1 to D6).

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

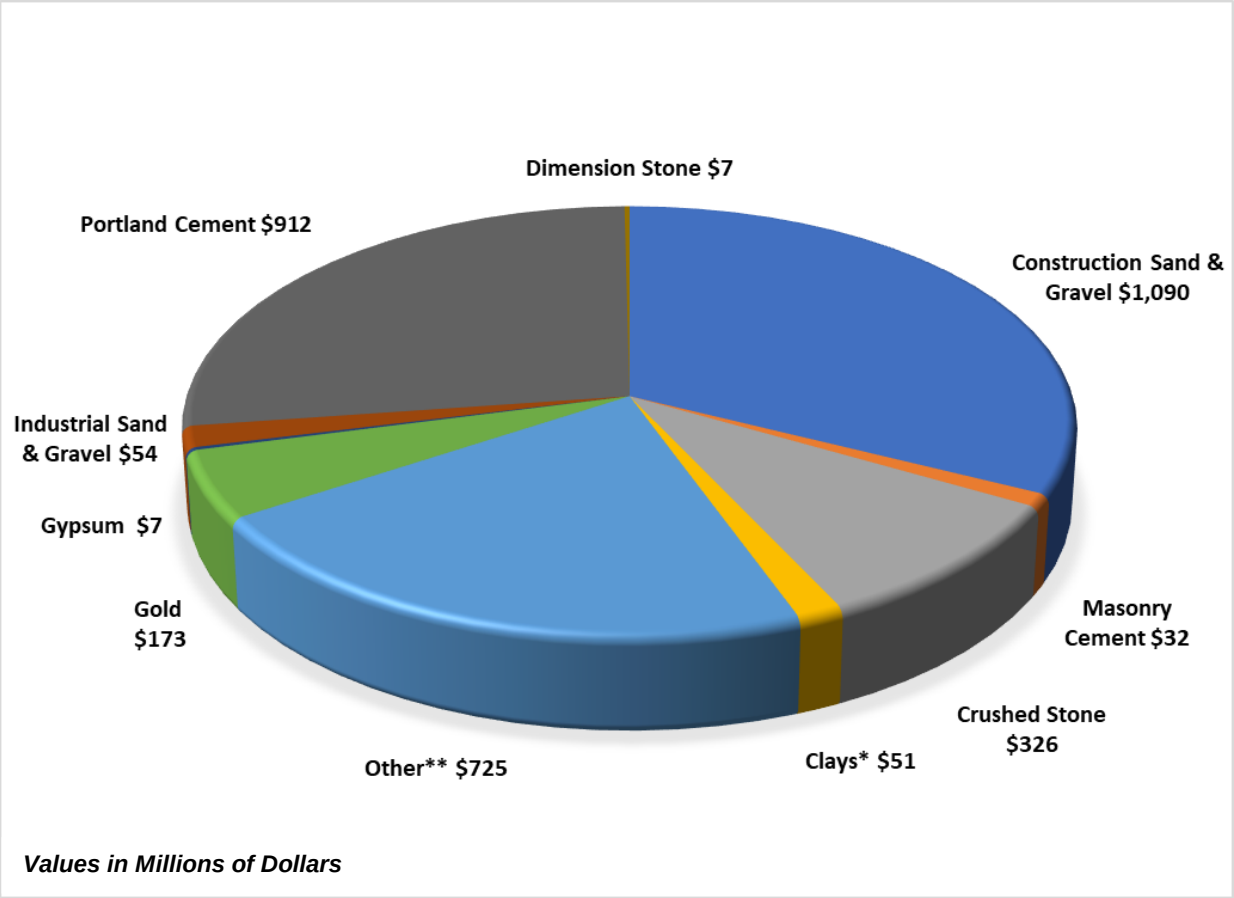
Liquefaction is a phenomenon in which loose, saturated, granular soil deposits lose a significant portion of their shear strength because of excess pore water pressure buildup. An earthquake, typically causes the increase in pore water pressure and subsequent liquefaction. These soils are behaving like 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.

Mineral Resources

Statewide Nonfuel Mineral Production

Based on the U.S. Geological Survey’s preliminary data for 2016, California ranked fourth after Nevada, Arizona, and Texas in the value of nonfuel mineral production, accounting for approximately 4.5 percent of the nation’s total (Gius 2016). The market value of nonfuel mineral production for California was $3.4 billion. California produced more than two dozen different industrial minerals during the year. California led the nation in the production of diatomite and construction sand and gravel. The state ranked second behind Texas for portland cement production. Other minerals produced commercially include clay (bentonite, common, kaolin, and montmorillonite), crushed stone, dimension stone, feldspar, gemstones, gypsum, industrial sand and gravel, lime, magnesium compounds, masonry cement, pumice, pumicite, salt, silver, soda ash, and zeolites. There were about 663 active mines in California producing nonfuel minerals during 2016 (Gius 2016). Figure 3.7-1 shows the total value of nonfuel mineral production by type for the state of California in 2016.



Notes:

** Clays include bentonite, kaolin, common, and montmorillonite (fullers earth).*

*** Other includes boron minerals, diatomite, feldspar, gemstones, lime, magnesium, compounds, pumice, pumicite, salt, silver, soda ash, and zeolites.*

Source: Gius 2016

Figure 3.7-1 California Nonfuel Mineral Production, 2016

Statewide Oil, Gas, and Geothermal Production

Crude Oil

California is currently ranked fourth in the nation among oil producing states, behind Louisiana, Texas, and Alaska, respectively. Statewide oil production has declined at a steady rate since its peak in 1985 (IPAA 2019); however, the state still hosts some of the country's largest fields and produces more than 500,000 barrels per day. The three major regions of California crude oil production are Kern County, the Los Angeles Basin, and the Outer Continental Shelf (CEC 2006).

Natural Gas

According to the California Energy Commission, the state produces about 10 percent of the total natural gas consumed in the state (CEC 2019a). Nearly half of the natural gas produced in the state is distributed by the utility companies to end users. The other half is directly provided to industry and electricity generation customers for their use. The other 90 percent of the natural gas consumed in California comes from the San Juan basin, the Rocky Mountain basin, and the Western Sedimentary basin in Canada (CPUC 2011).

Geothermal

Geothermal energy is produced by the heat of the Earth and is often associated with volcanic and seismically active regions. California, with its location on the Pacific "Ring of Fire," has 25 known geothermal resource areas, 14 of which have temperatures of 300 degrees Fahrenheit or greater (CEC 2019b).

Forty-six of California's 58 counties have lower temperature resources for direct-use geothermal. When added together, California's geothermal power plants produce about 4.5 percent of the state's total electricity. Major geothermal locations in California include the Geysers north of San Francisco, Imperial Valley area east of San Diego, and the Coso Hot Springs area near Bakersfield. It is estimated that the state has a potential of more than 4,000 megawatts of additional power from geothermal energy, using current technologies (CEC 2019b).

Additionally, two forms of geothermal energy, Hot Dry Rock and Magma, have the potential to provide thousands of megawatts in California. Investigations in Hot Dry Rock were done in the Clear Lake area of Lake County; Magma research occurred in the Long Valley Caldera of Mono County (CEC 2019b).

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. The information obtained from these sources was reviewed and summarize to understand existing conditions and to identify potential environmental effects, based on the thresholds of significance. In determining the level of significance, the analysis assumes that the proposed project would comply with relevant federal, State, and local laws, regulations, and ordinances.

Thresholds of Significance

An impact on soils and geology would be significant if implementation of the proposed regulation would cause new development projects that would:

- 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;
- be located on expansive soil, as defined in the Uniform Building Code, creating substantial direct or indirect risks to life or property;
- directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault or strong seismic ground shaking, or other seismic effects;
- 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;
- 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; or
- directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

Issues Not Discussed Further

No issues related to geology, soils, and mineral resources are dismissed from the analysis.

Environmental Impacts and Mitigation Measures

Impact 3.7-1: Substantial Erosion or Loss of Topsoil

Construction activities stemming from implementation of the proposed regulation could involve substantive earthwork activities that could result in soil erosion or the loss of topsoil. However, reasonably foreseeable future projects would be required to adhere to the conditions of the National Pollutant Discharge Elimination System (NPDES) General Construction Permit, including installation of best management practices (BMPs) to control erosion and sedimentation. As a result, this impact would be **less than significant**.

Construction activities stemming from implementation of the proposed regulation could involve substantive earthwork activities, including grading and stockpiling of soils. 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,” project implementation would be required to adhere to the conditions of the NPDES General Construction Permit. As part of the permit requirements, the contractor would be required to include construction BMPs, as detailed in a storm water pollution prevention plan (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.

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 above, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.7-2: Placement of Organic Water Recovery Facilities in Areas of Expansive or Unstable Soils, or Creation of Instability as a Result of Implementation

---

Implementation of the proposed regulation would create a need for new or expanded organic waste recovery facilities and associated infrastructure. Potential new facilities could be located in a variety of geologic, soil, and slope conditions with varying soil stability risks. However, projects initiated in response to the proposed regulation would be subject to project-level environmental review and would be required to meet CBC conditions related to unstable soils. Therefore, this impact would be **less than significant**.

Implementation of the proposed regulation would create a need for new or expanded organic waste recovery facilities and associated infrastructure. These facilities would most likely be located in rural agricultural areas in the San Joaquin Valley or be co-located at existing solid waste-handling facilities or wastewater treatment plants in urban areas; however, the exact locations of potential new or expanded facilities is unknown.

Potential new facilities could be located in a variety of geologic, soil, and slope conditions with varying soil stability risks. However, any new facility or building would undergo site-specific environmental review to identify any risks at the project level. Additionally, future projects 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 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.

Projects initiated in response to the proposed regulation would be subject to project-level environmental review and would be required to meet CBC conditions related to unstable soils. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.7-3: Potential Substantial Adverse Effects Involving Rupture of a Known Earthquake Fault, Strong Seismic Ground Shaking, or Other Seismic Effects

Future projects implemented in response to the proposed regulation 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**.

Future projects implemented in response to the proposed regulation 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 damage project structures, 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 investigation and site-specific environmental review required 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.

The potential for risk to people and structures would 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 for this impact.

Impact 3.7-4: Soils Incapable of Adequately Supporting the Use of Septic Tanks or Alternative Wastewater Disposal Systems

Future projects implemented in response to the proposed regulation could be located in rural areas where municipal sewer systems are not available. 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**.

Future projects implemented in response to the proposed regulation could be located in rural areas where municipal sanitary sewer systems are not accessible. Generally organic waste recovery facilities do not employ many personnel and some facilities 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 CCR 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 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 for this impact.

Impact 3.7-5: 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 future projects implemented in response to the proposed regulation could be located in or near areas with important mineral resources. However, projects implemented in response to the proposed regulation would be required to evaluate potential effects on mineral resources through project-level environmental review. Additionally, local permitting would be completed in accordance with existing statewide protections of important mineral resources. Therefore, this impact would be **less than significant**.

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. However, the potential effect on important mineral resources would be evaluated on a site-specific basis during the project-level environmental review and permitting for each project.

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. 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 projects implemented in response to the proposed regulation would be required to evaluate potential effects on mineral resources through project-level environmental review and because local permitting would be completed in accordance with SMARA, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.7-6: Destruction of a Unique Paleontological Resource or Site

---

Many unique and important fossils have been found in California. Future projects implemented in response to the proposed regulation would require ground disturbance, which could harm or destroy undiscovered paleontological resources. It is likely that many projects would be co-located at existing solid waste-handling facilities or wastewater treatment plants or built on previously disturbed sites. However, individual development projects have the potential to alter or destroy unique paleontological resources. Therefore, this impact would be **potentially significant**.

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 2019).

Future projects implemented in response to the proposed regulation would require ground disturbance, which could harm or destroy paleontological resources in the disturbance area. Future projects could be co-located with existing solid waste–handling facilities or wastewater treatment plants, located in previously disturbed areas and areas zoned for industrial or solid waste–handling activities, or located in undeveloped and undisturbed areas. Encountering unique resources in a previously disturbed site is unlikely; however, the potential impacts on unique paleontological or geologic resources would 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 3.7-6: Survey and Redesign or Avoid Significant Paleontological Resources

As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant impacts on paleontological resources. Mitigation measures to reduce potential impacts on paleontological resources can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.

The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on paleontological resources:

- Applicants of projects that require grading or excavation in previously undisturbed areas shall retain a qualified geologist or paleontologist to identify and evaluate site geology relative to the potential for the presence of unique paleontological resources. 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.
- All projects shall include the following requirements as a condition of approval: If evidence of any paleontological features or deposits are discovered during construction-related earth-moving activities (e.g., vertebrate, invertebrate, or plant fossils, traces, and/or trackways), all ground-disturbing activity in the area of the discovery shall be halted and the county shall be notified immediately. A qualified paleontologist shall be retained to assess the significance of the find. 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 project 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 3.7-6 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. However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, this EIR discloses, for CEQA-compliance purposes, that paleontological resources impacts associated with the proposed regulation could be **potentially significant and unavoidable**.

3.8. Greenhouse Gas Emissions and Climate Change

This section presents a summary of regulations applicable to greenhouse gas (GHG) emissions; a summary of climate change science and GHG sources in California; discussion about the proposed regulation's contribution to global climate change; and analysis of the project's resiliency to climate change-related risks. In addition, mitigation measures are recommended to reduce the proposed regulation's contribution to climate change.

Climate change-related comments received in response to the notice of preparation for the proposed regulation indicated that the EIR should emphasize the range of GHG benefits achieved through implementation of actions under the proposed regulation, including improved carbon sequestration; decreased reliance on synthetic fertilizers; and displacement of natural gas, fugitive methane, and diesel fuels with renewable natural gas. A baseline emissions inventory at existing landfills as well as a full life cycle analysis of GHGs were also requested to compare against regulation-related emissions. Other comments included recommendations related to methodologies to use in the analysis and suggestions regarding mitigation, and citations of existing data. Commenters also noted that the EIR should consider the carbon sequestration potential of existing landfills as well as the potential increase in vehicle miles traveled (VMT) associated with the proposed regulation.

3.8.1. Regulatory Setting

GHG emissions in California are regulated by federal, State, regional, and local government agencies. These agencies aim to reduce GHG emissions to lessen the impact of global climate change through legislation, planning, policy-making, education, and a variety of programs. The regulations and the agencies responsible for improving regulating GHGs within the State are discussed below.

Federal

In *Massachusetts et al. v. Environmental Protection Agency et al.*, 549 U.S. 497 (2007), the Supreme Court of the United States ruled that carbon dioxide (CO_2) fit within the definition of "air pollutant" under the federal Clean Air Act and that the U.S. Environmental Protection Agency (EPA) has the statutory authority to regulate GHG emissions.

In October 2012, EPA and the National Highway Traffic Safety Administration, issued final rules to further reduce GHG emissions and improve corporate average fuel economy (CAFE) standards for light-duty vehicles for model years 2017 and beyond (77 Federal Register [FR] 62624). These rules would increase fuel economy to the equivalent of 54.5 miles per gallon, limiting vehicle emissions to 163 grams of CO_2 per mile for the fleet of cars and light-duty trucks by model year 2025 (77 FR 62630). However, on April 2, 2018, the EPA administrator announced a final determination that the current standards are not appropriate and should be revised (EPA 2018). On August 2, 2018, the U.S. Department of Transportation and EPA proposed the Safer Affordable Fuel-Efficient Vehicles Rule, which would amend existing CAFE and tailpipe

CO_2 emissions standards for passenger cars and light trucks and establish new standards covering model years 2021 through 2026. The proposal would retain the model year 2020 standards for both programs through model year 2026 (NHTSA 2018). Vehicles used for worker commute and vehicles accessing urban-based feeding agencies under the proposed regulation would be subject to CAFE standards.

State

Statewide GHG Emission Targets and the Climate Change Scoping Plan

Reducing GHG emissions in California has been the focus of State government policy for approximately two decades (State of California 2018). GHG emission targets established by the State legislature include reducing statewide GHG emissions to 1990 levels by 2020 (AB 32, Nunez, Chapter 488 Statutes of 2006) and to 40 percent below 1990 levels by 2030 (Senate Bill [SB] 32, Pavley, Chapter 249, Statutes of 2016). Executive Order S-3-05 calls for statewide GHG emissions to be reduced to 80 percent below 1990 levels by 2050. Executive Order B-55-18 and SB 100 (DeLeón, Chapter 312, Statutes of 2018) calls for California to achieve carbon neutrality and supply 100 percent of the State's energy with renewable or zero-carbon resources by 2045 and achieve and maintain net negative GHG emissions thereafter. These targets were developed in consideration of the scientifically established levels needed in the U.S. to limit the rise in global temperature to no more than 2 degrees Celsius, the warming threshold at which major climate disruptions, such as super droughts and rising sea levels, are projected. These targets also are consistent with efforts to further limit the temperature increase to 1.5 degrees Celsius (United Nations 2015:3).

California's 2017 Climate Change Scoping Plan (2017 Scoping Plan), prepared by the California Air Resources Board (CARB), outlines the main strategies California will implement to achieve the legislated GHG emission target for 2030 and "substantially advance toward our 2050 climate goals" (CARB 2017a:1, 3, 5, 20, 25–26). It identifies the reductions needed by each GHG emission sector (e.g., transportation, industry, electricity generation, agriculture, commercial and residential, and recycling and waste activities). Statewide GHG emission reduction targets and the 2017 Scoping Plan are applicable to the proposed regulation because GHG emissions would be generated by construction and operational activities covered under the proposed regulation. Furthermore, an objective of the proposed regulation is to contribute to meeting California's GHG emission goals by reducing emissions of fugitive methane from the anaerobic decomposition of organics in landfills, which is considered a short-lived climate pollutant (SLCP) by CARB. In addition, under the proposed regulation, finished compost would be applied throughout the natural and working lands sector, which would improve soil health and carbon sequestration potential, helping the State meet its goals.

Short-Lived Climate Pollutant Reduction Strategy

In March 2017, CARB adopted the SLCP Reduction Strategy pursuant to SB 605 and SB 1383 (i.e., proposed regulation). SLCPs are climate pollutants with high global warming potential (GWP) with a short atmospheric lifespan as compared to CO_2. These

include methane, black carbon, and fluorinated gases (F-gases). Achievable goals under the SLCP Reduction Strategy include a 50-percent reduction in anthropogenic black carbon (i.e., emissions sourced from human activity rather than natural events such as wildfires) and a 40-percent reduction in methane and F-gases from 2013 levels by 2030. Additional goals include converting manure and organic wastes to energy sources and soil amendment products, reducing the disposal of edible food by increasing food recovery, reducing emissions from residential wood stoves, and phasing out the use of F-gases (CARB 2017b).

Draft 2030 Natural and Working Lands Implementation Plan

In a joint, interagency effort, the California Environmental Protection Agency (CalEPA), California Department of Food and Agriculture (CDFA), California Natural Resources Agency (CNRA), CARB, and California Strategic Growth Council released the *Draft California 2030 Natural and Working Lands Climate Change Implementation Plan* (Draft Plan, Natural and Working Lands Plan) in January 2019. The Draft Plan is specific to the natural and working lands sector, which includes farmland, rangeland, forests, grasslands, wetlands, riparian areas, seagrass, and urban green space. The Draft Plan addresses the carbon flux from this sector, including the ever-dynamic changes in both GHG emissions and carbon sequestration associated with the management of these lands. Current management practices in California's natural and working lands sector result in more GHG emissions than carbon sequestration. The Draft Plan serves as a multidisciplinary approach to conserve and maintain a resilient natural and working lands sector that will gradually shift the natural and working lands sector from being a net carbon emitter to being a net carbon sink, while also improving air quality, water quality, wildlife habitat, recreation, and providing other benefits. The Draft Plan sets goals for, at a minimum, increasing the rate of State-funded soil conservation practices fivefold, doubling the rate of State-funded forest management and restoration efforts, tripling the rate of State-funded oak woodland and riparian reforestation, and doubling the rate of State-funded wetland and seagrass restoration (CalEPA et al. 2019:13). The measures included in the Draft Plan are projected to result in cumulative emissions reductions of 12.4 to 35.9 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) by 2030 and cumulative emissions reductions of -84.2 to -83.1 $MMTCO_2e$ by 2045, when negative values indicate GHG emission reductions or sequestration (CalEPA et al. 2019:13–14).

The Draft Plan indicates that these GHG reductions will be met through a variety of practices under four broad pathways: conservation, forestry, restoration, and agriculture. One suite of practices currently implemented by CDFA in their Healthy Soils Initiative is called "Agriculture: Compost Application.**"** This practice entails the application of compost on cropland, rangeland, and pasture to increase carbon sequestration while enhancing water-holding capacity, forage production, and the release of nutrients in soils (CalEPA et al 2019:17).

Transportation-Related Standards and Regulations

The State has also passed legislation addressing GHG emissions associated with industrial sources, transportation, electricity generation, and energy consumption, as summarized below. Implementation of the proposed regulation would introduce new on-road and off-road vehicle activities, which are subject to transportation-related standards and regulations.

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. In addition, the program's zero-emission vehicle regulation requires battery, fuel cell, and plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025 (CARB 2016a:15). By 2025, when the rules will be fully implemented, GHG emissions from the statewide fleet of new cars and light-duty trucks will be reduced by 34 percent and cars will emit 75 percent less smog-forming pollution than the statewide fleet in 2016 (CARB 2016b:1).

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 electric vehicle-charging stations installed by 2025. It specifies that 10,000 of these charging stations must be direct-current fast chargers.

CARB adopted the Low Carbon Fuel Standard (LCFS) in 2007 to reduce the carbon intensity of California's transportation fuels. The LCFS applies to fuels used by on-road motor vehicles and by off-road vehicles, including construction equipment (Wade, pers. comm., 2017). In September 2018, CARB approved amendments to the LCFS to require a 20-percent reduction in carbon intensity by 2030 to further the State toward the 2030 GHG reduction target. The staff report that accompanied the amendments estimated that from January to March 2018, renewable natural gas (e.g., biogas) was 68 percent of all fuel used in natural gas vehicles (CARB 2018a:EX-1).

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 percent of their electricity from renewables by 2020 (SB X1-2, Simitian, Statutes of 2011); 52 percent by 2027 (also SB 100); 60 percent by 2030 (also SB 100); and 100 percent by 2045 (also SB 100).

Building Energy Efficiency Standards (Title 24, Part 6)

The energy consumption of nonresidential buildings in California is regulated by the State's Title 24, Part 6, Building Energy Efficiency Standards (California Energy Code). The California Energy Commission (CEC) updates the California Energy Code every 3 years with more stringent design requirements for reduced energy consumption, which results in the generation of fewer GHG emissions. The current California Energy Code (2016) is scheduled to be replaced by the 2019 standards on January 1, 2020.

The 2019 California Energy Code will require builders to use more energy-efficient building technologies for compliance with increased restrictions on allowable energy use. CEC estimates that the 2019 California Energy Code will result in new commercial buildings that use 30 percent less energy than those designed to meet the 2016 standards, primarily through the transition to high-efficacy lighting (CEC 2018).

California Green Building Standards (Title 24, Part 11)

The California Green Building Standards, also known as CALGreen, serves as a model that cities and counties may adopt as a reach code (i.e., optional standards that exceed the requirements of mandatory codes). CALGreen was developed by CEC and provides green building standards for statewide residential and non-residential construction. CALGreen contains both mandatory and voluntary measures that may be applied to projects throughout the State. The current version is the 2016 CALGreen Code, which will remain in effect until December 31, 2019. It is anticipated that a new version of the CALGreen code will replace the current code on January 1, 2020. The CALGreen Code sets equivalent or more stringent design requirements than the California Energy Code for energy efficiency, water efficiency, landfill waste reduction, 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 B-18-12. Effective January 1, 2017, all jurisdictions must require the diversion of 65 percent of construction waste, projects applicants of construction projects will be required to divert 65 percent of construction waste materials generated during the project.

California's Climate Adaptation Strategy

California's overall plan for climate adaptation is expressed in *Safeguarding California Plan: 2018 Update* (CNRA 2018). The plan provides policy guidance for State decision makers and is part of continuing efforts to reduce impacts and prepare for climate risks. The plan includes 76 policy recommendations across 11 policy sectors. One of the key sectors is agriculture. Policy A-2.6 of the plan is to build further collaboration between CDFA, CalRecycle, and other partner agencies to identify strategies on how healthy soils can contribute to achieving some of the other State agency waste reduction and environmental objective and goals (CNRA 2018:130). The finished compost generated from facilities implemented in response to the proposed regulation would be used consistent with this adaptation planning policy, because local land use and permit approvals are typically conditioned upon such consistency.

Local

Given its statewide extent and the possible number of local and regional responsible agencies, this Draft EIR does not identify individual, potentially applicable local government plan, policy, and ordinances. Types of local regulations relevant to GHGs may include climate action plans (CAPs). CAPs are comprehensive roadmaps that outline the specific activities that a city, county, or agency will undertake to reduce its GHG emissions. CAPs build upon the information gathered by GHG inventories and focus on those activities that can achieve the greatest emissions reductions in the most

cost-effective manner. CAPs in California are designed to align with the statewide targets mandated by AB 32 and SB 32 (discussed above).

Other examples of local regulations relevant to climate change may include general plan policies to reduce emissions or improve the resiliency of a local jurisdiction. This EIR assumes that the reasonably foreseeable compliance responses associated with implementation of the proposed regulation would be consistent with local plans, policies, and ordinances to the extent that anticipated organic waste recovery infrastructure projects are subject to them.

3.8.2. Environmental Setting

Scientific Basis of Greenhouse Gas Emissions and Climate Change

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the atmosphere from space. A portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space. The absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, 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.

Prominent GHGs contributing to the greenhouse effect are CO_2, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Human-generated emissions of these GHGs in excess of natural ambient concentrations are found to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropomorphic increase in GHG concentrations and other anthropomorphic forcing (IPCC 2014:5). This warming is observable considering the 20 hottest years ever recorded occurred within the past 30 years (McKibben 2018).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air 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 (approximately 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years). GHGs persist in the atmosphere long enough to be dispersed around the globe. Although the 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. Of the total annual human-caused CO_2 emissions, approximately 55 percent are estimated to be sequestered through ocean and land

uptake every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remain stored in the atmosphere (IPCC 2013:467).

The quantity of GHGs in the atmosphere responsible for climate change is not precisely known, but it is enormous. No single project alone would measurably contribute to an incremental change in the global average temperature or to global or local climates or microclimates. From the standpoint of CEQA, GHG impacts relative to global climate change are inherently cumulative.

Greenhouse Gas Emission Sources

As discussed previously, GHG emissions are attributable in large part to human activities. Emissions of CO_2 are primarily byproducts of fossil-fuel combustion. Methane, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices, organic material decomposition in landfills, and the burning of forest fires (Black et al. 2017). Nitrous oxide emissions are largely attributable to agricultural practices and soil management. CO_2 sinks, or reservoirs, include vegetation, soil organic matter, and the ocean, which absorb CO_2 through sequestration and dissolution (CO_2 dissolving into the water), respectively, two of the most common processes for removing CO_2 from the atmosphere.

The total GHG inventory for California in 2016 was 429 $MMTCO_2e$ (CARB 2018b). This is less than the 2020 target of 431 $MMTCO_2e$, indicated that California is ahead of schedule in meeting the AB 32 target (CARB 2018c:1). Table 3.8-1 summarizes the statewide GHG inventory for California.

Table 3.8-1 Statewide GHG Emissions by Economic Sector

Sector	Percent
Transportation	41
Industrial	23
Electricity generation (in state)	10
Electricity generation (imports)	6
Agriculture	8
Residential	7
Commercial	5
Not specified	<1

Source: CARB 2018b

Effects of Climate Change on the Environment

According to the Intergovernmental Panel on Climate Change (IPCC), which was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme, global average temperature will increase by 1.5 degrees

Celsius (2.7degrees Fahrenheit [°F]) by 2040. This 1.5 degree warming represents a global average indicating that portions of the earth will experience more dramatic warming than others. Oceans, which support high specific heat, will experience less dramatic warming as compared to continents, particularly in inland regions.

According to *California's Fourth Climate Change Assessment*, with global GHGs reduced at a moderate rate, California will experience average daily high temperatures that are warmer than the historic average by 2.5 °F from 2006 to 2039, by 4.4 °F from 2040 to 2069, and by 5.6 °F from 2070 to 2100; and if GHG emissions continue at current rates then California will experience average daily high temperatures that are warmer than the historic average by 2.7 °F from 2006 to 2039, by 5.8 °F from 2040 to 2069, and by 8.8 °F from 2070 to 2100 (OPR, CEC, and CNRA 2018:5).

Since its previous climate change assessment in 2012, California has experienced several of the most extreme natural events in its recorded history: a severe drought from 2012–2016 that resulted in mortality of approximately 129 million trees an almost non-existent Sierra Nevada winter snowpack in 2014–2015, increasingly large and severe wildfires, and back-to-back years of the warmest average temperatures (OPR, CEC, and CNRA 2018:3). According to CNRA's *Safeguarding California Plan: 2018 Update*, California experienced the driest 4-year statewide precipitation on record from 2012 through 2015; the warmest years on average in 2014, 2015, and 2016; and the smallest and second smallest Sierra snowpack on record in 2015 and 2014 (CNRA 2018:55). In contrast, the northern Sierra Nevada experienced its wettest year on record during the 2016–2017 water year (CNRA 2018:64).

As temperatures increase, the amount of precipitation falling as rain rather than snow also increases, which could lead to increased flooding because water that would normally be held in the snowpack of the Sierra Nevada and Cascade Range until spring would flow into the Central Valley during winter rainstorm events. This scenario would place more pressure on California's levee/flood control system (CNRA 2018:190–192). Furthermore, in the extreme scenario involving the rapid loss of the Antarctic ice sheet and the glaciers atop Greenland, the sea level along California's coastline is expected to rise 54 inches by 2100 if GHG emissions continue at current rates (OPR, CEC, and CNRA 2018:6).

Temperature increases and changes to historical precipitation patterns will likely affect ecologically productivity. Existing habitats may migrate from climatic changes where possible, and those that lack the ability to retreat will be severely threatened. Altered climatic conditions dramatically endangers the survival of arthropods which could have cascading effects throughout ecosystems (Lister and Garcia 2018). Conversely, a warming climate may support the populations of other insects such as ticks and mosquitos, which transmit diseases harmful to human health such as the Zika virus, West Nile virus, and Lyme disease (European Commission Joint Research Centre 2018).

Changes in temperature, precipitation patterns, extreme weather events, wildfires, and sea-level rise have the potential to threaten transportation and energy infrastructure, crop production, forests and rangelands, and public health (CNRA 2018:64, 116–117, 127; OPR, CEC, and CNRA 2018:7–14). The effects of climate change will also have an

indirect adverse impact on the economy as more severe natural disasters cause expensive, physical damage to communities and the State.

Additionally, adjusting to the physical changes associated with climate change can produce mental health impacts such as depression and anxiety.

3.8.3. Environmental Impacts and Mitigation Measures

Methodology

Construction of new or expanded organic waste recovery facilities would generate GHG emissions from exhaust from heavy-duty equipment. GHGs would be generated from construction-related haul truck trips to and from sites of future or existing organic waste recovery facilities. Due to the programmatic nature of this Draft EIR and the uncertainty surrounding the location, size, intensity, and magnitude of future construction activities, construction-generated emissions of GHGs are discussed qualitatively.

Operation of organic waste recovery facilities would result in emissions of GHGs from electricity consumption, use of diesel-powered equipment to process feedstocks and product, increased vehicle travel to and from these facilities, the post processing and combustion of biogas, and from water consumption and wastewater generation. Due to the programmatic nature of the proposed regulation, the level of activity at a future organic waste recovery facility (such as an AD or composting facility) cannot be known at this time. Operation of organic waste recovery facilities would also result in a decrease in fugitive methane emissions produced from the anaerobic decomposition of organics at landfills. As shown in the Compost Emissions Reduction Factor (CERF) model prepared by CARB and CalEPA, the composting process achieves a net reduction of GHG emissions (CARB and CalEPA 2017). However, the precise volume of material that would be handled at each facility cannot be estimated at this time. Additionally, given the inherent uncertainty surrounding the characteristics of future organic waste recovery facilities (e.g., energy demand, use of biogas, water consumption), project-level operational emissions estimates would be speculative and are discussed qualitatively. Moreover, because the specific locations of facilities cannot be known at this time, the appropriate local air district thresholds of significance that would be applied to determination significance are also not yet known.

Thresholds of Significance

The issue of global climate change is inherently a cumulative issue because the GHG emissions of individual projects cannot be shown to have any material effect on the global climate. Thus, the proposed regulation's impact on climate change is addressed only as a cumulative impact.

A cumulatively considerable contribution to climate change would occur if implementation of the proposed regulation would:

- generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
- conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

The proposed regulation would be implemented statewide. Thus, the proposed regulation's consistency with statewide plans to reduce GHG emissions is evaluated. Such plans include the 2017 Scoping Plan, the SLCP Reduction Strategy, and Draft 2030 Natural and Working Lands Climate Change Implementation Plan. Statewide methane reductions—expressed in $MMTCO_2e$—achieved through the reduction of organic waste sent to landfills is discussed quantitatively. However, future new or expanded organic waste recovery facilities constructed and operated as a result of implementation of the proposed regulation would be subject to project-level environmental review. During the CEQA process, construction and operational emissions would be assessed against a threshold of significance determined by the lead agency in consideration of statewide and/or local GHG reduction targets. Nevertheless, construction and operational project-level GHG emissions associated with the proposed regulation are analyzed qualitatively.

Issues Not Discussed Further

No issues related to GHG emissions and climate change are dismissed from analysis.

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 proposed regulation would be consistent with applicable plans, policies, and regulations aimed at reducing GHG emissions, including the 2017 Scoping Plan, SLCP Reduction Strategy, and Draft 2030 Natural and Working Lands Climate Change Implementation Plan. The purpose of the proposed regulation is to reduce fugitive methane emissions from landfills through the redirection of organics to organic waste recovery facilities (such as compost and AD facilities), where methane emissions would be reduced through effective techniques or collected as biogas for energy generation and transportation fuel. Additionally, compost product would be applied within the State's agricultural sector, resulting in improved soil health and carbon sequestration potential. This impact would be **less than significant**.

Regulations, plans, and policies aimed at reducing GHG emissions from landfills and the disposal of organic materials include the 2017 Scoping Plan, the Draft 2030 Natural and Working Lands Climate Change Implementation Plan, and the SLCP Reduction Strategy.

As described in Section 3.8.1, "Regulatory Setting," the 2017 Scoping Plan lays out the framework for achieving compliance with statewide GHG targets mandated by SB 32 (i.e., 40-percent reductions from 1990 levels by 2030). Also, in consideration of

Executive Order S-3-05, the 2017 Scoping Plan extends the horizon of GHG reduction goals to an 80-percent reduction from 1990 levels by 2050. The construction and operation of new or expanded organic waste recovery facilities (such as AD and composting facilities), in addition to facilitating the movement of organic waste to such facilities, are consistent with actions identified in the 2017 Scoping Plan, which acknowledges that the State must decrease landfill emissions of methane—an SLCP—to meet its long-term GHG reduction goals. The proposed regulation is a component of the SLCP Reduction Strategy, which CARB indicates "will provide significant reductions with a focus on methane and hydrofluorocarbon gases" (CARB 2017a:29).

Additionally, as stated previously, the proposed regulation pinpoints reductions in fugitive methane emissions from the anaerobic decomposition of food waste at landfills, which is identified as an integral component in the SLCP Reduction Strategy. The SLCP Reduction Strategy includes several regulatory methods to reduce total methane emissions, such as capturing fugitive methane at oil and gas facilities, implementing AD facilities at dairies and wastewater treatment plants, and diverting organic waste from landfills (CARB 2017b). The proposed regulation serves to achieve the methane reductions from the redirection of organics to AD, compost, and other organic waste recovery facilities; thus, it would be consistent with the goals of the SLCP Reduction Strategy.

The proposed regulation would also further the goals of the Draft 2030 Natural and Working Lands Climate Change Implementation Plan, which identifies compost application as a mechanism to increase carbon sequestration within the natural and working lands sector (CalEPA et al. 2019:17). The plan sets the goal to increase fivefold the rate of State-funded soil conservation practices, which the proposed regulation would support through the generation of finished compost materials. Compost would provide the necessary soil amendments to create heavy soils with high carbon sequestration potential. The 2017 Scoping Plan, in addition to the Draft 2030 Natural and Working Lands Climate Change Implementation Plan, indicates that carbon sequestration in the natural and working lands sector must be optimized to meet the State's long-term climate change goals.

As discussed in Chapter 2, "Project Description," the primary objective of the proposed regulation is to reduce the disposal of organic waste at landfills. This project 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 proposed regulation would achieve reductions in fugitive methane emissions from landfills, as well as reductions in petroleum-fuel used for electricity, transportation, and the production of synthetic fertilizers. The proposed regulation would also enhance the State's capacity to sequester carbon. For the reasons discussed above, the proposed regulation 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 for this impact.

Impact 3.8-2: Short-Term Construction-Generated GHG Emissions

Implementation of the proposed regulation would result in the construction of new or expanded organic waste recovery facilities to accommodate the increase in organic waste recovery. The construction of such facilities would generate GHG emissions that could exceed applicable local agency thresholds of significance. This impact would be **potentially significant**.

The proposed regulation would entail the expansion of existing or construction of new organic waste recovery facilities to process diverted organic materials. Typical earth-moving equipment that may be necessary to construct such facilities includes graders, scrapers, backhoes, jackhammers, front-end loaders, generators, water trucks, and dump trucks. Specific project-related construction activities would result in increased generation of GHG emissions associated with the use of heavy-duty off-road equipment, materials transport, and worker commute trips for the duration of the construction phase. However, construction-related GHG emissions are expected to be confined to the short term and limited in amount. Further as noted in the project description, the proposed regulation would require jurisdictions to enforce 2016 California Green Building Standards Code (CALGreen) Section 5.408.1 requirements for the recycling of 65 percent of nonhazardous construction and demolition waste, thus reducing construction-related GHGs resulting from facilities built in response to the regulation.

Local agencies, such as air districts, are generally charged with determining acceptable thresholds of significance for construction GHG emissions. Quantification of short-term construction-related GHG emissions is generally based on a combination of methods, including the use of exhaust emission rates from emissions models, such as OFFROAD 2007 and various versions of EMFAC. These models require consideration of assumptions, including construction timelines and energy demand (e.g., fuel and electricity).

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 South Coast Air Quality Management District (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).

Other air districts, the Sacramento Metropolitan Air Quality Management District (SMAQMD) for instance, recommend applying a "bright-line" threshold to evaluate construction emissions. However, as is the case for SMAQMD thresholds, such thresholds have typically been developed in consideration of nearer-term statewide GHG reduction goals, such as achieving 1990 levels of GHG emissions by 2020 as mandated by AB 32 (SMAQMD 2018).

Conversely, many air districts throughout the State (e.g., Bay Area Air Quality Management District [BAAQMD]) do not recommend that construction emissions be estimated or mitigated.

In the 2017 Scoping Plan, CARB indicates that a no net additional increase in GHG emissions may be a suitable threshold to apply to projects undergoing environmental review, but it recognizes that the threshold may not be applicable to all projects. In its discussion, CARB provides the following guidance pertaining to the evaluation of GHG emissions during environmental review (CARB 2017a:101–102):

> Achieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development. There are recent examples of land use development projects in California that have demonstrated that it is feasible to design projects that achieve zero net additional GHG emissions. Several projects have received certification from the Governor under AB 900, the Jobs and Economic Improvement through Environmental Leadership Act (Buchanan, Chapter 354, Statutes of 2011), demonstrating an ability to design economically viable projects that create jobs while contributing no net additional GHG emissions. Another example is the Newhall Ranch Resource Management and Development Plan and Spineflower Conservation Plan, in which the applicant, Newhall Land and Farming Company, proposed a commitment to achieve net zero GHG emissions for a very large-scale residential and commercial specific planned development in Santa Clarita Valley.
>
> Achieving net zero increases in GHG emissions, resulting in no contribution to GHG impacts, may not be feasible or appropriate for every project, however, and the inability of a project to mitigate its GHG emissions to net zero does not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA.

Construction emissions may or may not be considered a cumulatively significant climate change impact, but this would depend upon what air district or lead agency oversees the environmental review of a facility. For facilities located within the jurisdiction of an air district that does not recommend that construction emissions be quantified (e.g., BAAQMD), construction-related GHG emissions may not be considered significant. However, it is foreseeable that construction emissions could exceed an applicable threshold depending on its location and the direction provided by an air district or lead agency.

Although it is foreseeable that the GHG emissions benefits achieved from implementation of the proposed regulation would be sufficient to negate emissions from facility construction, future environmental review would be conducted at a project level and GHG emissions benefits associated with organic waste recovery could not be credited toward construction emissions. Thus, the construction of new or expanded organic waste recovery facilities would generate GHG emissions that could exceed

applicable local agency thresholds of significance. This impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.8-2: Implement All Feasible On- and Off-Site Mitigation Measures to Reduce Greenhouse Gas Emissions to below a Lead Agency–Approved Threshold of Significance

As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to include permit conditions regulating GHG emissions. Lead agencies would evaluate a project's construction emissions against the applicable threshold of significance developed by a lead agency and/or air district. In cases where these thresholds are exceeded, mitigation measures to reduce construction-generated GHG emissions can and should be implemented by local jurisdiction with permitting authority. Site-specific, project impacts and mitigation measures would be identified during a project's local review process. A proposed project would be approved by a local government and/or the applicable air district as conditions of approval.

The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts on construction-generated GHG emissions.

- Project proponents shall require its contractors to restrict the idling of on- and off-road diesel equipment to no more than 5 minutes while the equipment is on-site.
- Project proponents of new facilities shall implement waste, disposal, and recycling strategies (i.e., 10 percent recycled content for Tier 1 and 15 percent recycled content for Tier 2) in accordance with the voluntary measures for non-residential land uses contained in Section A5.405 of the 2016 CALGreen Code or in accordance with any update to these requirements in future iterations of the CALGreen Code in place at the time of project construction.
- Project proponents of new facilities shall achieve or exceed the enhanced Tier 2 target for nonresidential land uses of recycling or reusing 80 percent of the construction waste as described in Section A5.408 of the 2016 CALGreen Code or in accordance with any update to these requirements in future iterations of the CALGreen Code in place at the time of project construction.
- Project proponents shall require all diesel-powered, off-road construction equipment meet EPA's Tier 3 or Tier 4 emissions standards as defined in 40 CFR 1039 and comply with the exhaust emission test procedures and provisions of 40 CFR Parts 1065 and 1068. This measure can also be achieved by using battery-electric off-road equipment as it becomes

available. This measure is consistent with Mitigation Measure 3.3-1 in Section 3.3, “Air Quality.”

- Project proponents shall implement a program that incentivizes construction workers to carpool, and/or use public transit or electric vehicles to commute to and from the project site.

Significance after Mitigation

Implementation of Mitigation Measure 3.8-2 would reduce short-term construction-related GHG emissions because it would require implementation of construction best practices and use of equipment that meets stringent emissions standards However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, this EIR discloses, for CEQA-compliance purposes, that construction-related GHG emissions could be **potentially significant and unavoidable**.

Impact 3.8-3: Long-Term Operation-Related GHG Emissions

Implementation of the proposed regulation could result in increases in statewide and regional VMT associated with the collection of organic waste from targeted generators, the movement of organic material to an organic waste recovery facility, the hauling of edible food from Tier I and Tier II commercial edible food generators to edible food recovery operations or other feeding agencies, and the distribution of finished products (e.g., compost, biogas) to end uses. 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 products, the GHG reductions achieved through implementation of the proposed regulation would be substantially greater than additional travel-generated emissions, so a net reduction in overall GHG emissions would be reasonably anticipated. This impact would be **less than significant**.

Implementation of the proposed regulation would likely result in changes in VMT as compared to baseline conditions. Overall VMT may increase or be displaced to other locations. The existing trips related to the collection of organic waste, which in most jurisdictions in the State is currently commingled with solid waste, may be diverted from the current final destination at a landfill to a new or expanded organic waste recovery facility. It would be reasonable to expect that trip lengths and frequencies related to collection of organic waste and hauling to treatment facilities would not change substantially from current travel requirements, because a robust system of waste collection and disposal is already in place and the location of organic waste treatment facilities would be influenced by the cost-control incentive to keep trip lengths short.

However, delivery of end products after treatment of diverted organic waste, such as providing compost to agricultural customers for land application, would likely involve another trip from the treatment facility to the customer's location. This could result in a total increase in statewide VMT; however, attempting to quantify the level of VMT generated from this activity would be too speculative to be meaningful, because the specific locations of treatment facilities cannot be known at this time.

Changes in VMT could also occur from the redirection of edible food to food recovery operations, feeding agencies, or shelters. It would be anticipated that such edible food recovery operations, feeding agencies, or shelters would be located near dense communities, which would likely reduce existing trip lengths associated with the movement of organic materials to landfills. Nonetheless, attempting to quantify the extent to which trip length would be reduced would be too speculative to be meaningful, because specific facility locations cannot be known at this time.

Implementing the proposed regulation would also result in the generation of compost and biogas products that would be distributed within and possibly outside the state. Compost products would generally be applied to agricultural lands (65 percent), landscape (17 percent), nursery (6 percent), Caltrans (5 percent), and other uses (e.g., direct cover, boiler fuel, municipal projects) (Cotton, pers. comm., 2019; CalRecycle 2019). Biogas could be consumed on-site at AD facilities or used as transportation fuel for facility-related vehicles, but biogas could also be exported for off-site uses. The length or frequency of trips related to the distribution of these products is unknown at the time of writing this EIR; however, it is expected than an increase in statewide VMT could occur.

Energy would also be consumed from the operation of AD, composting, and other organic waste recovery facilities. Electricity would be required to grind material, and diesel fuel would be consumed to turn and manage compost. However, facilities that employ ASP systems can mitigate or replace diesel fuel consumption with electricity, which could minimize facility-generate GHG emissions related to fuel combustion. Through increased reliance on electricity, which will become increasingly decarbonized through the implementation of local and statewide regulations (e.g., RPS), operation of these facilities would decrease GHGs overall.

GHG emissions would also be indirectly emitted from water consumed during the composting process. It would be expected that AD and composting facilities could meet some or all of their energy requirements from the combustion of biogas generated by these facilities. However, the proposed regulation does not contain a requirement that facilities must use biogas of a certain percentage or therm value. Operational energy use could result in an increase in emissions of GHGs as compared to baseline conditions.

It is reasonable to expect that the GHG emissions from a change in VMT and energy use would be more than offset by the anticipated reductions achieved through other aspects of the regulation, such as decreasing over time the fugitive methane emissions at landfills from the anaerobic decomposition of organics. AD and composting facilities

would implement practices that would aerate soils and organic waste, as well as collect off-gassed methane emissions for on- or off-site use. Combustion of methane would generate emissions of CO_2; however, methane is a highly potent GHG with, according to the IPCC's Fifth Assessment Report, a GWP of 28 over a 100-year timeframe (IPCC 2016). Conversion of methane to CO_2 equivalent would ultimately result in less of a contribution to global climate change compared to existing conditions.

Implementing the proposed regulation would also cause some amount of petroleum-based fuels to be displaced by biogas, although quantifying the displacement would be too speculative to be meaningful. At baseline conditions, many heavy-duty vehicles, such as refuse trucks and buses, are powered by combined natural gas, which could be replaced with renewable natural gas produced from AD and composting activities. Renewable natural gas could also be used for commercial and residential uses, such as powering home and water heaters, stovetops, and fireplaces.

Improved soil health and carbon sequestration potential would also be achieved as a result of the proposed regulation. 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. 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 2017 Scoping Plan, help the State meet its long-term GHG emissions reduction targets (CalEPA et al. 2019; CARB 2017a).

Implementing the proposed regulation would also displace some amount of petroleum-based fertilizers as compost materials become increasingly available. Over the past decade, the average annual amount of nitrogen, petroleum-derived fertilizer purchased for use in California was approximately 600,000 tons (Rosenstock et al. 2013). The application of these fertilizers is a notable contributor to global emissions of nitrogen dioxide, which, according to the IPCC's most recent estimates, has a GWP of 265 over a 100-year time horizon (IPCC 2016). 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 (Qualman 2017). Compost materials generated under the proposed regulation would reduce overall reliance on petroleum-based fertilizers.

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 AD, composting, or other organic waste recovery facility. The CERF model accounts for emissions increases associated with increased VMT and energy requirements of facilities, as well as emissions reductions from the avoidance of methane emissions, decreased soil erosion and increased carbon sequestration potential, reduced synthetic fertilizer use, and reduced herbicide use (CARB and CalEPA 2017).

In the regulation, CalRecycle and ARB employ a modification to the CERF that results in a more conservative estimate of emission reductions. The CERF model estimates

overall average reduction of 0.54 $MTCO_2e$ per 1 ton. To more conservatively estimate this reduction, CalRecycle has adjusted the CERF model to not include emissions reductions achieved through compost application. For the purposes of the regulation and this analysis, CalRecycle assumes a 0.3 $MTCO_2e$ reduction per 1 ton of feedstock diverted from a landfill to a composting facility (CalRecycle 2019a:37–40 and CalRecycle 2019b).

Although GHGs would be emitted from increased VMT and operation of organic waste recovery facilities, the existing CERF calculations, and the modified calculations employed in the regulation demonstrate that the net reductions from avoided landfill emissions alone exceed operation-related emissions from composting, the reductions are even greater if application benefits (e.g. applying compost to land) are included. These numbers represent very conservative emission reduction estimates to avoid overstating benefits. Regardless, it is reasonable to expect that overall emissions of GHGs, particularly methane, would be reduced for the reasons stated above. Therefore, long-term, operation-related GHG emission impacts would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

3.9. Hazards and Hazardous Materials

This section describes the environmental and regulatory setting related to hazardous materials and public health throughout the state. The analysis provides a program-level review of the types of impacts that could occur from implementation of the reasonably foreseeable compliance responses associated with the proposed regulation.

Comments were received on the notice of preparation related to:

- impacts of conversion of organic waste to natural gas and transporting that natural gas;
- contamination of compost products and other soil amendments with harmful pathogens, including from the use of organics recovered from unsegregated single container collection systems and from remnant organic materials in the gray container collection stream; and
- the potential to spread pathogens from transportation of green material, such as the pathogen that causes sudden oak death.

Hazards associated with wildland fires are addressed in Section 3.15, "Wildfire."

3.9.1. Regulatory Setting

Definitions

California Health and Safety Code (HSC) Section 25501 defines "**hazardous materials**" as 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 that a handler or the administering agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

A **hazardous chemical** is any chemical whose presence or use poses a physical or health hazard. The federal Occupational Safety and Health Administration (OSHA) Laboratory Standard defines it as a chemical for which there is significant evidence, based on at least one study conducted in accordance with established scientific principles, that it may cause acute or chronic health effects to exposed employees. The term "**health hazard**" includes chemicals that are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins (affecting the liver), nephrotoxins (affecting kidneys), neurotoxins (affecting brain and nervous system), agents that affect the hematopoietic (blood) system, and agents that damage lungs, skin, eyes, or mucous membranes.

Pathogens are disease-causing organisms, such as certain bacteria, viruses and parasites. **Vectors** are organisms, such as flies, mosquitoes, rodents and birds that can spread disease by carrying and transferring pathogens. Vectors can transmit pathogens

to humans and other hosts physically through contact or biologically by playing a specific role in the life cycle of the pathogen.

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 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 U.S. 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) (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), in conjunction with EPA, is responsible for enforcement and implementation of federal laws and regulations pertaining to the transportation of hazardous materials. The Hazardous Materials Transportation Act of 1974 (49 USC 5101 et seq.) directs DOT to establish criteria and regulations regarding safe storage and transportation of hazardous materials. Hazardous materials regulations are contained in 49 CFR 171–180, and address transportation of hazardous materials, types of materials defined as hazardous, and the marking of vehicles transporting hazardous materials. In particular, 49 CFR 173, titled "Shippers' General Requirements for Shipments and Packaging," defines hazardous materials for transportation purposes; within this portion of the code, 49 CFR 173.3 provides specific packaging requirements for shipment of hazardous materials, and 49 CFR 173.21 lists categories of materials and packages that are forbidden for shipping. 49 CFR 177, titled "Carriage by Public Highway," defines unacceptable hazardous materials shipments.

The DOT Pipeline and Hazardous Materials Safety Administration has designated many chemical compounds as hazardous materials.

Worker Safety

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, 9 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 create 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 operations, transfer stations, other municipal solid waste facilities and associated stormwater detention facilities. Exceptions to separation criteria for waste facilities include off-airport property composting operations and fully enclosed transfer stations. Off-airport property composting operations that do not accept food waste 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.

Natural Gas Pipelines

DOT provides oversight for the nation's natural gas pipeline transportation system. Its responsibilities are promulgated under Title 49, USC Chapter 601. The Pipeline and Hazardous Materials Safety Administration, Office of Pipeline Safety, administers the national regulatory program to ensure the safe transportation of gas and other hazardous materials by pipeline.

The Office of Pipeline Safety shares portions of this responsibility with state agency partners and others at the federal, state, and local levels. The State of California has the authority to regulate intrastate natural and other gas pipeline facilities. The California Public Utilities Commission (CPUC) has rules governing design construction, testing, operation, and maintenance of gas gathering, transmission, and distribution piping systems (General Order No. 112-E). The State requirements for designing, constructing, testing, operating, and maintaining gas piping systems are stated in CPUC General Order Number 112. These rules incorporate the federal regulations by reference, but for natural gas pipelines, they do not impose any additional requirements affecting public safety. The federal pipeline regulations are published in 49 CFR, Parts 190 through 199.49. CFR 192 specifically addresses natural and other gas pipelines. These regulations include specific standards for material selection and qualification, design requirements, protection from corrosion, worker training, safety and provisions for safety standards specific to the location of the pipeline relative to population densities and sensitive land uses.

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 above, 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, and
- inventory of toxic chemical releases.

The corresponding State law is HSC Chapter 6.95 (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 California Department of Toxic Substances Control (DTSC) 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 under 26 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 (Caltrans). 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 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 Control Act, the NPDES program, and the role of the RWQCBs, see Section 3.10, "Hydrology and Water Quality."

Worker Safety

The California Division of Occupational Safety and Health (known as 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.

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 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;
- 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 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, and other nuisances that could be associated with composting operations and transfer/processing 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).
- For operation of in-vessel digestion operations and facilities, operators shall take adequate steps to control or prevent the propagation, harborage, and attraction of flies, rodents, or other vectors, and animals, and to minimize bird attraction (14 CCR Section 17896.44).

- 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).

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.

State Aeronautics Act

The purpose of the California State Aeronautics Act pursuant to Public Utilities Code (PUC) Section 21001 et seq. "is to protect the public interest in aeronautics and aeronautical progress." Caltrans Division of Aeronautics administers this statute. The California Airport Land Use Planning Handbook, prepared by Caltrans, provides guidance for conducting airport land use compatibility planning as required by Article 3.5, Airport Land Use Commissions, PUC Sections 21670 through 21679.5 (Caltrans 2011). Article 3.5 outlines the statutory requirements for Airport Land Use Commissions, including the preparation of an Airport Land Use Compatibility Plan that is designed to encourage compatible land uses in the area surrounding an airport. The handbook contains the identification of essential elements for the preparation of an Airport Land Use Compatibility Plan (PUC Sections 21674.5 and 21674.7).

Local

Given its statewide extent and the possible number of local and regional responsible agencies, this EIR does not identify potentially applicable local government plans, policies, and ordinances. Types of local regulations relevant to hazards and hazardous materials may include general plan policies and ordinances protective of these resources. Local regulatory agencies also enforce many federal and State regulatory programs through the Certified Unified Program Agency program, including:

- hazardous materials business plans (Chapter 6.95 of the HSC, Section 25501 et seq.),
- State Uniform Fire Code requirements (Section 80.103 of the Uniform Fire Code as adopted by the state fire marshal pursuant to HSC Section 13143.9),
- underground storage tanks (HSC Section 25280 et seq.),
- aboveground storage tanks (HSC Section 25270.5[c]), and
- hazardous waste generator requirements (HSC Section 25100 et seq.).

This EIR assumes that the reasonably foreseeable compliance responses associated with implementation of the proposed regulation would be consistent with local plans,

policies, and ordinances to the extent that anticipated organic waste–handling projects are subject to them.

3.9.2. Environmental Setting

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 State Water Resources Control Board GeoTracker database. Many hazardous waste sites that are in varying stages of assessment and remediation are located throughout the state (DTSC 2019; SWRCB 2019).

Most organic waste–handling facilities 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 would more likely be located in urban areas. The locations of these facilities 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.

Organic Waste–Handling and Food Recovery Hazards

A variety of common hazardous materials are associated with maintenance and use of mechanical equipment and vehicles associated with organic waste–handling systems. Operations of existing compost facilities, such as windrow compost facilities, 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 in order 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 or equipment use and maintenance.

Anaerobic Digester and Biogas Hazards

AD facilities are confined spaces that pose a potential immediate threat to human life. They are designed to seal out oxygen, making death by asphyxiation possible within seconds of entry. Further, gases such as hydrogen sulfide and ammonia accumulate inside a digester. Cal/OSHA is responsible for developing and enforcing workplace safety standards, including confined space and lockout procedures.

Biogas is a byproduct of AD. Biogas primarily consists of methane (50–75 percent), carbon dioxide (25–50 percent), and small amounts of water, nitrogen gas, oxygen, hydrogen sulfide, ammonia , and trace elements (Biogas World 2019). Biogas itself is not explosive and will not burn unless oxygen is available. The risk of fire and explosion is highest close to digesters and gas reservoirs. It can occur because of a gas leak, creation of an explosive zone, welding, or clogged or frozen pipes. A leak in a gas line can create a fire hazard if an ignition source is present and the concentration of flammable constituents is at a hazardous level; however, in open spaces biogas readily mixes with air reducing its potential to reach flammable concentrations. The risk of fire hazard is generally low because AD facilities and biogas transmission lines operate with very low pressures, similar to residential natural gas distribution lines. Typical construction standards for AD facilities include redundant fire safety relief valves, non-combustible constituent materials, flame arresters, gas detectors, and physical barriers to minimize fire and explosion hazards.

AD and associated biogas facilities could use a variety of industrial-type equipment and infrastructure, which could include electricity generator sets, biogas storage tanks, and compression and cleaning equipment, pipeline systems, transmission poles and wires, and vehicle-fueling stations. This equipment may use hazardous materials such as household cleaning products, fuels, oils, lubricants, solvents, and detergents for equipment and vehicle or equipment use and maintenance.

Naturally Occurring Asbestos

Asbestos is the common name for a group of naturally occurring fibrous silicate minerals that can separate into thin but strong and durable fibers. Naturally occurring asbestos (NOA) was identified as a toxic air contaminant (TAC) in 1986 by the California Air Resources Board. NOA 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). 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 (California Geological Survey 2002). The California Geological Survey has published guidance for geologists involved in conducting or reviewing NOA 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 within one-quarter mile of a school, activities to be located on a hazardous materials site or near an airport, interference with an adopted emergency response plan, or generate vectors and pathogens that would pose a significant health hazard.

Thresholds of Significance

An impact on hazards or hazardous materials would be significant if implementation of the proposed regulation 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 one-quarter mile 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, create a significant hazard to the public or the environment;
- 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, would the project result in a safety hazard or excessive noise for people residing or working in the project area; and

- 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 analysis.

Environmental Impacts and Mitigation Measures

Impact 3.9-1: Significant Health Hazard from the Use of Hazardous Materials

Construction and operation of new or modified organic waste–handling facilities implemented under the proposed regulation would 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 later activities under the proposed regulation would comply with these federal and State laws and regulations, this impact would be **less than significant**.

Implementation of the proposed regulation would result in the construction and operation of new or modified organic waste–handling facilities, including compost facilities that convert organic wastes into a soil amendment; AD facilities that would convert organic wastes into biogas (which may include electricity generator sets, biogas storage tanks and compression and cleaning equipment, aboveground pipeline systems, transmission poles and wires, and vehicle fueling stations); changes to or operation of new recycling facilities (which could include operations at new industrial/MRF-type buildings or use of processing equipment that would handle recoverable paper); mobile, standalone, or co-located chip and grind facilities for processing material (which could involve the periodic relocation of mobile chip and grind operations); biomass conversion facilities (which could involve use of types of equipment and construction similar to those associated with an AD facility); and operation of edible food recovery programs (which could include additional food collection vehicles and operation at new or reuse of existing buildings or warehouses to support the collection, storage, preparation, and distribution of edible food). Implementation of the proposed regulation does not include activities related to the collection, disposal, or processing of hazardous wastes.

Construction and operation, including routine maintenance, of these facilities 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 proposed regulation may 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 above under “Naturally Occurring Asbestos,” in Section 3.9.2, portions of the state are identified as areas likely to contain NOA. Ground disturbance activities associated with construction activities could cause NOA 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.

Biogas would be generated during operation of AD facilities. The biogas could be used for internal combustion or flared. If biogas conditioning is required for use either in a fuel cell or in production of liquefied biogas, scrubber facilities would be needed to clean the biogas to remove sulfides. Flushing of the scrubbers would produce sulfide effluent that would require appropriate disposal. Biogas presents an inhalation hazard. If inhaled in high concentration, it can cause serious injury or death. Biogas itself is not explosive and will not burn unless oxygen is available at low concentrations. Fire hazards associated with biogas generation is discussed for Impact 3.15-2 in Section 3.15, “Wildfire.”

The use of some types of equipment associated with organic waste–handling facilities 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. AD facilities also pose a threat to human health because it consists of a confined space designed to seal out oxygen. The generation of biogas as a byproduct of AD poses potential threats for fire or explosions.

Hazardous materials would be contained within vessels engineered for safe storage. Paint would 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 3.9.1, “Regulatory Setting,” above, 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. For construction of organic waste–handling facilities projects that would result in soil surface disturbance greater than 1 acre, specific erosion control measures would be identified as part of the NPDES permit and storm water pollution prevention plan (SWPPP) required for construction. These types of construction projects would implement erosion control measures that use construction water quality best management practices (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. 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 3.15.1 of Section 3.15, “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, including gases. 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 Certified Unified Program Agency, 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 proposed regulation would 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 for this impact.

Impact 3.9-2: Significant Hazards to the Public or Environment from Disturbance to Known Hazardous Material Sites

Soil disturbance caused by construction associated with new or modified organic waste–handling facilities built in response to the proposed regulation 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 proposed regulation 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**.

Hazardous materials, if present in soils, could be disturbed and dispersed by construction activities for organic waste–handling facilities under the proposed regulation. Soil contamination generally occurs in areas that are or have been previously developed, especially with industrial-type 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 organic waste–handling facilities constructed in response to the proposed regulation 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 are more likely to be located in urban areas. New or proposed organic waste–handling facilities, because of their association with solid waste collection, could be located in industrial areas and near or at landfills, MRFs, and wastewater treatment plants that sometimes involve the handling of hazardous materials. Thus, it is possible that new or modified organic waste–handling facilities developed under the proposed regulation would be located on known hazardous materials sites.

The development of some organic waste–handling facilities and the addition or modification of some organic waste–handling programs would not require soil disturbance. Projects that would not involve soil disturbance include the application of compostable material and/or digestate on land (primarily agricultural lands), changes in

operations at existing recycling facilities to expand processing facilities or modify collection routes, installation of depackaging machines to manage commercial food waste, and mobile chip and grind operations.

New or modified organic waste–handling facilities that could require soil disturbance include composting facilities, anaerobic digester facilities, chipping and grinding facilities, and new 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 3.9-2: Identify and Avoid Known Hazardous Waste Sites during Construction of New or Modified Facilities Built in Response to the Proposed Regulation

As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant impacts related to the exposure of workers, the public, or the environment to hazardous materials. Mitigation measures to reduce potential hazardous materials impacts can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.

The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts from exposure to hazardous materials:

- Proponents of new facilities constructed as a result of reasonably foreseeable compliance responses would coordinate with local or State land use agencies to seek entitlements for development. This process would involve the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must comply with all applicable regulations as part of approval of a development project.
- During the environmental review process for a new or modified organic waste–handling facility project that would require ground-disturbing activities under the proposed regulation, the project proponent would coordinate with the landowner or other entity with jurisdiction (e.g., city or county) to determine whether hazardous materials are known to have been used, stored, or disposed of on the project site. The project proponent would 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 the site of a new or modified organic waste facility is known 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. If it is determined through coordination with landowners or after review of the Cortese List that no potential or known contamination is located on a project site, the project may proceed as planned.

- Before final project design and any earth-disturbing activities, the applicant or agencies responsible would conduct a Phase I Environmental Site Assessment (ESA). The Phase I ESA would 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 organic waste–handling facilities.

  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, the applicant or agencies responsible would retain a Registered Environmental Assessor to conduct follow-up sampling to characterize the contamination and to identify any required remediation that shall be conducted consistent with applicable regulations before any earth-disturbing activities. The environmental professional would prepare a report that includes, but would not be limited to, description of activities performed for the assessment, a summary of anticipated contaminants and contaminant concentrations at the proposed construction site, and recommendations for appropriate handling of any contaminated materials during construction.

- Project proponents would implement all feasible mitigation identified during the environmental document review to reduce or substantially lessen the potentially significant environmental impacts of the project.

Significance after Mitigation

Implementation of Mitigation Measure 3.9-2 would reduce impacts related to the exposure of the public or environment to significant hazards because the project proponent would search hazardous waste databases, prepared a Phase I ESA, and implement all feasible mitigation measures identified during the environmental review process. However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, this EIR discloses, for CEQA-compliance purposes, that short-term,

construction-related impacts associated with release of hazardous materials resulting from the development of new facilities associated with the proposed regulation could be **potentially significant and unavoidable**.

Impact 3.9-3: Generation of Vectors and Pathogens 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, which are public and environmental health hazards. However, organic waste–handling facilities and operations, including compost and AD facilities, facilities that process green material and wood waste, and edible food recovery programs, are regulated by existing laws and regulations to protect human and environmental health. Therefore, this impact would be **less than significant**.

Implementation of the proposed regulation would result in the increase in collection of food wastes, green material, and mixed solid wastes to achieve the goals of the regulation for the reduction of organic waste disposal. Food waste, green material, and mixed solid waste that would be processed for separation of organic wastes can serve as an attractive environment for pests that act as vectors, such as flies, cockroaches, and rodents. Incoming food wastes, green material, and mixed solid wastes would be deposited on a tipping floor or some other processing area for sorting and preprocessing or placed directly in containers, such as an AD tank. Pests could be present in the waste 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. The increase in collection and management of wood waste and green material under the proposed regulation could result in the transport and spread of tree-killing diseases or diseases that destroy crops. At AD facilities, digestion and postprocessing would be largely contained within vessels, diminishing the potential for vector access. Processing of compost or aerobic curing of the digestate from AD processes may occur outside of enclosed vessels, such as in windrows, which could be an attractant to vectors. Some AD facilities 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 facilities designated as compost facilities, 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 AD 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

organic waste–handling facilities 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 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.

Movement of green material or wood waste out of quarantine zones, particularly if these materials are spread on agricultural land without being composted, can spread pests and disease. Agricultural officials have the power to restrict the movement of green material (CalRecycle 2019). They may prohibit materials from leaving the quarantine zone or may attach conditions to ensure that pests do not move along with restricted materials, which could include green material or food wastes. Every entity in the chain of custody for handling green material from a quarantine zone, including haulers, transfer stations, chip-and-grind facilities, and composting facilities or landfills, must have the appropriate compliance agreements from the county Agricultural Commissioner's office in place to handle these materials.

Implementation of edible food recovery programs in response to the proposed regulation would involve handling and collecting edible food and purchasing needed equipment to support food recovery (e.g., refrigerated vehicles, cold storage, and packing equipment). Edible food recovery programs currently exist. Food that is donated through these programs must meet food safety requirements, including meeting time and temperature, handling, storage, and packaging requirements.

Regulations for composting operations (e.g., windrows, aerated static piles, AD facilities), enforced by CalRecycle, 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 3-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.

Implementation of reasonably foreseeable compliance responses could result in the attraction of vectors and propagation and transport of pathogens, which are public and environmental health hazards. However, organic waste–handling facilities and operations, including compost and AD facilities, facilities that process green material and wood waste, and edible food recovery programs are regulated by existing laws and

regulations to protect human and environmental health. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.9-4: Potential Hazards Associated with the Release of Hazardous Materials from the Siting of Organic Waste Recovery Facilities within One-Quarter Mile of a School

Although new or modified organic waste–handling facilities would most likely be located at existing facilities and would not be located near schools, the specific location of the facilities that would be developed under the proposed regulation is currently unknown. The potential risks related to the use of hazardous materials at facilities near schools would be reduced through compliance with federal and State regulatory requirements, as discussed for Impact 3.9-1, above. Operation of AD facilities would generate biogas, which could pose a fire hazard near schools (see the discussion of Impact 3.15-2 in Section 3.15, “Wildfire”). However, compliance with the California Fire Code and applicable local fire safety codes would substantially reduce the risk of fire associated with siting AD facilities near schools. Operation of organic waste recovery facilities under the proposed regulation would result in reductions in emissions of TACs as compared to existing conditions at landfills. Further, TACs generated by the reasonably foreseeable organic waste recovery facilities 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**.

Existing compost facilities, waste transfer facilities, and landfills are typically not sited close to schools. It is anticipated that most organic waste–handling facilities implemented in response to the proposed regulation 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 are more likely to be located in urban areas. Because organic waste–handling facilities would most likely be associated with existing 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 organic waste–handling 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.

As described in the discussion of Impact 3.15-2 in Section 3.15, “Wildfire,” the infrastructure required for AD facilities poses a risk of fire ignition from biogas storage and transmission infrastructure, equipment malfunction, or electrical combustion sources. Of all the types of facilities that could be developed under the proposed regulation, AD facilities represent the largest new infrastructure demand and consequently pose the largest fire ignition risk. However, as discussed for Impact 3.15-2, although new infrastructure for AD facilities could increase the risk of fire ignition, safety initiatives, development standards, and regulatory oversight for electric utilities have been implemented in recent years that aim to reduce the risk of wildfire ignition associated with such facilities. 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. Compliance with these regulatory requirements would substantially reduce the risk of fire ignitions caused by infrastructure development and, therefore, would reduce risks associated with siting AD facilities that generate biogas near schools.

Additionally, as discussed for Impact 3.3-4 in Section 3.3, “Air Quality,” operation of organic waste recovery facilities constructed under the proposed regulation would require the operation of diesel-powered vehicles and equipment, which could introduce mobile- and stationary-source TAC emissions. However, operation of organic waste recovery facilities under the proposed regulation would result in reductions in emissions of TACs as compared to existing conditions at landfills. Further, TACs generated by the reasonably foreseeable organic waste recovery facilities 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 for this impact.

Impact 3.9-5: Safety Hazard from Siting an Organic Waste–Handling Facility within 5 Miles of an Airport

Organic waste–handling facilities would process food materials that could attract increased numbers of 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 and AD facilities 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**.

Wildlife-aircraft strikes have resulted in the loss of hundreds of lives worldwide, as well as substantial amounts of aircraft damage. Implementation of the proposed regulation could result in the development of new or modified organic waste–handling facilities, such as compost facilities and AD facilities, that process food wastes and that can provide wildlife with ideal locations for feeding, reproduction, and refuge. Even small facilities, such as an aerated static pile, can attract wildlife such as birds or deer. Additionally, implementation of the proposed regulation would result in increased collection of organic material, including food waste, and subsequent processing at transfer stations or MRFs, 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 organic waste–handling facilities could attract increased numbers of 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 statute 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.

Organic waste–handling facilities, such as compost facilities and AD facilities, would not be subject to the same regulations as MSWLFs; however, operation of these facilities 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 and AD facilities would be required to be operated 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 and AD facilities minimize bird attraction. However, because the locations of compost and AD facilities 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: Reduce Safety Hazards from Siting an Organic Waste–Handling Facility within 5 Miles of an Airport

As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant impacts related to conflicts with aircraft. Mitigation measures to reduce potential impacts can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.

The following mitigation measure can and should be required by agencies with project approval authority to avoid or minimize impacts related to conflicts with aircraft:

- For any compost or AD facility proposed within 5 statute miles of an airport's air operations area, the project proponent shall notify the FAA Regional Airports Division office and the airport operator of the proposal for a new compost or AD facility as early in the process as possible. Such compost or AD facilities with any open air (outdoor) activities must receive an FAA Determination of No Hazard before project approval.

Significance after Mitigation

Implementation of Mitigation Measure 3.4-1 would reduce impacts associated wildlife attractants near airports because compost or AD facilities with any open air (outdoor) activities must receive an FAA Determination of No Hazard before project approval. However, adoption and implementation of this mitigation measure are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, this EIR discloses, for CEQA-compliance purposes, that impacts related to conflicts with aircraft resulting from the development of new facilities associated with the proposed regulation could be **potentially significant and unavoidable**.

Impact 3.9-6: Impaired Implementation of or Physical Interference with an Adopted Emergency Response Plan or Emergency Evacuation Plan

New or modified organic waste–handling facilities and operations of collection routes would be spread throughout the state. Operation of new or modified organic waste–handling 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 organic waste–handling facilities would be short term and temporary; however, heavy equipment accessing project sites from public roads during construction and installation of biogas pipelines in public rights-of-way has the potential to impair implementation of emergency response and evacuation plans. This impact would be **potentially significant**.

It is anticipated that most organic waste–handling facilities implemented in response to the proposed regulation 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. It is possible that biogas pipelines associated with AD facilities could be installed within public rights-of-way. Edible food recovery and community-scale composting facilities are more likely to be located in urban areas. Implementation of the proposed regulation may 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 organic waste–handling 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 of individual new or modified organic waste–handling facilities 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 biogas pipelines 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 and installation of biogas pipelines in public rights-of-way has the potential to impair implementation of emergency response and evacuation plans. This impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.9-6: Implement Measures during Construction Activities to Avoid Impairment of an Emergency Response Plan or Emergency Evacuation Plan

As described in Section 1.2, “Purpose of this EIR,” the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation

measures that would reduce potentially significant impacts related to the impaired implementation of emergency response and evacuation plans. Mitigation measures to reduce potential impacts can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.

The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts related to impaired implementation of emergency response and evacuation plans:

- Proponents of new facilities constructed as a result of reasonably foreseeable compliance responses would coordinate with local or State land use agencies to seek entitlements for development. This process would involve the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must comply with all applicable regulations as part of approval of a development project.
- Project proponents would implement all feasible mitigation identified during the environmental review to reduce or substantially lessen the potentially significant impacts from constructing the project related to impairment of an emergency response plan or emergency evacuation plan.
- The contractor(s) would obtain any necessary road encroachment permits before pipelines are installed within the existing roadway right-of-way. As part of the road encroachment permit process, the contractor(s) would submit a traffic safety/traffic management plan (for work in the public right-of-way) to the agencies having jurisdiction over the affected roads. The plan would likely include, but would not necessarily be limited to, the following elements.
    - Develop circulation and detour plans to minimize impacts on local street circulation. Use haul routes that minimize truck traffic on local roadways to the extent possible. Use flaggers and/or signage to guide vehicles through and/or around the construction zone.
    - To the extent feasible, and as needed to avoid adverse impacts on traffic flow, schedule truck trips outside of peak morning and evening commute hours.
    - Limit lane closures during peak traffic hours to the extent possible. Restore roads and streets to normal operation by covering trenches with steel plates outside of allowed working hours or when work is not in progress.
    - Limit, where possible, pipeline construction work zones to a width that, at a minimum, maintains alternating one-way traffic flow past the construction zone.

- Coordinate with facility owners or administrators of sensitive land uses, such as police and fire stations, hospitals, and schools. Provide advance notification to the facility owner or operator of the timing, location, and duration of construction activities.
- To the maximum extent feasible, maintain access to private driveways located within construction zones.
- Coordinate with the local public transit providers so that bus routes or bus stops in work zones can be temporarily relocated as the service provider deems necessary.

Significance after Mitigation

Implementation of Mitigation Measure 3.9-6 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. However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, this EIR discloses, for CEQA-compliance purposes, that short-term, construction-related impacts on implementation of emergency response and evacuation plans resulting from the development of new facilities associated with the proposed regulation could be **potentially significant and unavoidable**.

This page intentionally left blank.

3.10. Hydrology and Water Quality

This section identifies the regulatory context and policies related to hydrology and water quality, describes the existing hydrologic conditions at the project site, and evaluates potential hydrology and receiving water–quality impacts of the proposed regulation.

Comments received on the notice of preparation related to hydrology and water quality asked for evaluation of impacts related to stormwater runoff from organic waste processing facilities. This issue is addressed below in Impacts 3.10-1 and 3.10-2.

3.10.1. Regulatory Setting

Federal

Clean Water Act

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 below.

CWA Water Quality Criteria/Standards

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 below, 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 (WQOs).

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 WQOs 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 the amount of the pollutant that the water body can receive and still comply with WQOs. It is also a plan to reduce loading of a specific pollutant from various sources to achieve compliance with WQOs. In California, implementation of TMDLs is achieved through water quality control plans, known as Basin Plans, of the State RWQCBs. See “State” section, below.

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, below).

CWA Section 404 Protection of Jurisdictional Waters

Section 404 of the CWA prohibits the discharge of fill material into waters of the United States, including many wetlands, except as permitted under separate regulations by the U.S. Army Corps of Engineers (USACE) and EPA. To discharge dredged or fill material into waters of the United States, including wetlands that come within the definition of that term, Section 404 requires projects to receive authorization from the Secretary of the Army, acting through USACE. Waters of the United States are generally defined as “waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; territorial seas and tributaries to such waters.”

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 the 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 1-percent chance of flooding in 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

California Porter-Cologne 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. SWRCB and the RWQCBs have the authority and responsibility to adopt plans and policies, regulate discharges to surface water and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substances, sewage, or oil or petroleum products.

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 includes a comprehensive list of water bodies within the region and detailed language about the components of applicable WQOs. The Basin Plan recognizes natural water quality, existing and potential beneficial uses, and water quality problems associated with human activities throughout the region. Through the Basin Plan, each RWQCB executes its regulatory authority to enforce the implementation of TMDLs, and to ensure compliance with surface WQOs. The Basin Plan includes both narrative, and numerical WQOs designed to provide protection for all designated and potential beneficial uses in all its principal streams and tributaries. Applicable beneficial uses include municipal and domestic water supply, irrigation, noncontact and contact water recreation, groundwater recharge, freshwater replenishment, hydroelectric power generation, and preservation and enhancement of wildlife, fish, and other aquatic resources.

The RWQCB also administers the adoption of waste discharge requirements (WDRs), manages groundwater quality, and adopts projects within its boundaries under the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit).

NPDES Construction General Permit for Stormwater Discharges Associated with Construction Activity

SWRCB adopted the statewide NPDES General Permit 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 storm water pollution prevention plan (SWPPP) must be developed and implemented for each site covered by the permit. The 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.

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. 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.

Waste Discharge Requirements for Composting Operations

SWRCB establishing the general WDRs for composing operations in 2015 (Order WQ 2015-0121-DWQ). Prior to the issuance of this statewide general order, regulation of composting operations by the RWQCBs had included individual WDRs or conditional waivers. The order applies to operations that store at least 500 cubic yards of materials and separates facilities into two regulatory tiers based on allowable types of feedstocks, the volume of material processed, and the degree of groundwater separation. The general order requires composting wastewater to be contained on-site and include detention ponds to contain runoff from a 25-year, 24-hour peak storm event. In addition, certain high-risk wastes (such as animal carcasses, medical wastes, and sludges) are prohibited. Annual monitoring and reporting are required.

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 AB 3030 and has since been modified in 2002 by SB 1938, in 2011 by AB 359, and in 2014 by the Sustainable Groundwater Management Act of 2014 (SGMA) (SB 1168, SB 1319, and AB 1739). The intent of the acts is to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions 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 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 o h ow the groundwater sustainability plan may affect those plans.

In January 2019, DWR released SGMA 2019 Basin Prioritization Phase 1 for 458 of the 515 basins that were not affected by 2018 Basin Boundary Modifications. The results from the basin boundary modifications were released in February 2019. Basin boundary modifications are expected to be finalized in early summer 2019 (DWR 2019).

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 5 years. At the time of preparation of this Draft EIR, the 2017 Update to the CVFPP was in preparation but had not been adopted.

State Plan of Flood Control

Section 9110(f) of the California Water Code defines the SPFC 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 SPFC 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 associated with implementation of SB 1383 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.

3.10.2. Environmental Setting

Hydrology and Drainage

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, sub-arctic, Mediterranean, steppe, and desert (USGS 1995). The average annual precipitation across all California climate types is approximately 23 inches and approximately 75 percent of the state's annual precipitation falls between November and March, primarily in the form of rain, with the exception of high mountain elevations (DWR 2003:20). Average annual precipitation ranges from more than 100 inches in the mountainous areas within the Smith River in Del Norte County to less than 2 inches in Death Valley, illustrating the extreme differences in precipitation levels within the state (Mount 1995:359). Overall, northern California is wetter than southern California and the majority of the state's annual precipitation occurs in the northern coastal region.

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. The average annual runoff from these systems generates 71 million acre-feet (DWR 1998). Northern portions of the state receive substantially more precipitation than southern portions and the snowpack in the Sierra Nevada and the southern Cascades serves as a significant reservoir for water storage. Snowpack accumulates over the winter and early spring months and gradually melts in the late spring and summer, feeding surface flows, filling reservoirs, and recharging groundwater. Captured snowmelt, especially east and north of the Central Valley, is highly managed and is release from reservoirs to supply regional agriculture and urban needs and for export to other areas of the state. Federal, State, and local engineered water projects, aqueducts, canals, and reservoirs serve as the primary conduits of surface water sources to areas that have limited surface water resources. Most of the surface water storage is transported for agricultural, urban, and rural residential needs to the San Francisco Bay Area and to cities and areas extending to southern coastal California. Surface water is also transported to southern inland areas, including Owens Valley, Imperial Valley, and Central Valley areas.

In recent decades, California's natural and engineered water systems have come under increasing demand pressure to meet urban, agricultural, industrial, and environmental water requirements. Reductions in allocated water supplies have been required in recent droughts.

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 cover approximately 40 percent of the geographic extent of the state (DWR 2003:20). 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 located in broad alluvial valleys flanking mountain ranges, such as the Cascade Range, Coast Ranges, Transverse Ranges, and the Sierra Nevada.

There are 250 major groundwater basins that serve approximately 30 percent of California's urban, agricultural, and industrial water needs, especially in southern portion of San Francisco Bay, the Central Valley, greater Los Angeles area, and inland desert areas where surface water is limited. On average, more than 15 million acre-feet of groundwater are extracted each year in the state, of which more than 50 percent is extracted from 36 groundwater basins in the Central Valley.

Groundwater overdraft has been a problem in California for many decades. Overdraft occurs where the average annual amount of groundwater extraction exceeds the long-term average annual supply of water to the basin. Over an extended period of time, extensive groundwater overdraft can result in irreversible land subsidence as depleted aquifers compact. Areas of significant land subsidence are characterized by reduced aquifer capacity and sinking land surfaces. Roughly 4 percent of California's groundwater basins are in a condition of critical overdraft (DWR 2016), meaning that the continuation of present water management practices within these basins would result in significant adverse environmental, social, or economic effects.

In compliance with SGMA, California's 515 groundwater basins are classified into one of four categories: high-, medium-, low-, or very low-priority. The current draft boundaries and prioritization levels indicate that medium- and high-priority basins are located throughout the State, particularly within the Central Valley where the majority of critically overdraft basins/subbasins have been identified (DWR 2019). As required by SGMA, a groundwater sustainability plan must be developed and implemented for each medium- or high-priority basin (see additional detail related to SGMA under Section 3.10.1, "Regulatory Setting"). Basin boundaries and prioritization are expected finalized in summer 2019 (DWR 2019).

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.

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 (EPA 1993). 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 man-made chemicals 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. Salt and nitrite contamination is the most common groundwater pollution and affects 10 to 15 percent of California's wells, mostly through various agricultural activities (Harter 2003). 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. 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 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.

In general, naturally occurring erosion and sedimentation occurs from weathering of bedrock or saturation of soils in erosion prone areas causing landslides, earthflows, debris flows, and other mass wasting-related processes; lateral channel migration resulting in bank erosion; channel downcutting and incision; and surface erosion cause by precipitation, runoff and wind on bare soil surfaces. Sporadically occurring natural events such as flooding caused by heavy and prolonged precipitation and rain events following soon after wildfire can generate high levels of sedimentation and erosion. Some human activities that result in erosion and sedimentation include road building, construction activities, agriculture (including some timber harvesting) and grazing, and recreation. Agriculture, mining, and other land disturbing activities often result create bare soil areas, which are prone to higher levels of surface runoff. Increased runoff can result in sheet, rill, and gully erosion, and landslides.

3.10.3. Environmental Impacts and Mitigation Measures

Methodology

Evaluation of potential hydrologic and water quality impacts is based on a review of existing documents and studies that address water resources in the vicinity of the project. 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 the project would comply with relevant federal, State, and local laws, ordinances, and regulations.

Thresholds of Significance

An impact on hydrology or water quality would be significant if implementation of the proposed regulation 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, siltation, or flooding 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; or
  - impede or redirect flood flows; or
- in flood hazard, tsunami, or seiche zones, risk release of pollutants as a result of project inundation.

Issues Not Discussed Further

No issues related to hydrology and water quality are dismissed from the analysis.

Environmental Impacts and Mitigation Measures

Impact 3.10-1: Violation of Any Water Quality Standards or Waste Discharge Requirements or Conflict with the Implementation of a Water Management Plan through Construction of New Organic Waste Recovery Facilities

The proposed regulation would stimulate the development of new organic waste recovery facilities. Site grading and construction of these facilities would create ground disturbance and potentially accelerate soil erosion. Soils exposed during rain events could generate sediment that could be carried in runoff into storm drains and surface waters, adversely affecting water quality. However, the existing regulatory environment includes robust protections for water quality during construction activities. 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**.

The proposed regulation would stimulate the development of new organic waste recovery facilities in California. Site grading and construction of composting, AD, or other facilities could require grading, excavation, and stockpiling of soils. These activities would create ground disturbance that could accelerate soil erosion. 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 BMPs that are managed and monitored by personnel trained and certified through SWRCB. All future projects that disturb more than 1 acre would be required to comply with the statewide NPDES General Construction Permit (Order No. 2010-0014 DWQ) (Construction NPDES). This permit requires the development of a site-specific SWPPP that would comply with established regulatory standards and include site-specific BMPs 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 Construction NPDES permit SWPPP and would reduce the potential of directly and indirectly affecting water quality through construction-related hazardous material spills. The SWPPP would be prepared by a Qualified SWPPP Practitioner and would be designed to meet the stormwater control needs of the project. 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 regulation 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 for this impact.

Impact 3.10-2: Violation of Any Water Quality Standards or Waste Discharge Requirements or Conflict with the Implementation of a Water Management Plan through Operation of New Organic Waste Recovery Facilities

The composting process releases water that may contain nutrients, metals, salts, pathogens, and oxygen-reducing compounds. 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. Because these regulatory protections are in place, this impact would be **less than significant**.

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 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 2015).

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 (Composting WDRs) to efficiently support the redirection of organic waste from landfills to composting operations while providing requirements to protect water quality.

The Composting WDRs 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 I facilities. Feedstocks allowed at Tier I facilities include agricultural materials, green materials, paper materials, vegetative food materials, anaerobic digestate, and residentially co-collected food and green materials. Feedstocks allowed at Tier II facilities include all the Tier I feedstocks, as well as nonvegetative food materials, biosolids, manure, and digestate from AD facilities.

The following water quality protection measures are included in the Composting WDRs:

- *Prohibit composting operations within 100 feet of the nearest surface water body or water supply well.* 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 WDRs 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 WDRs. 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 II 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 WDRs employ a two-tiered approach to regulating composting operation based on the type and volume of feedstocks, additives, and amendments. Tier I 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 WDRs. Tier II 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 WDRs require working surfaces to be designed and constructed to be sloped to prevent ponding and to convey wastewater to an approved wastewater management system. Tier II 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.

- *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 II 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.

SWRCB has determined that the following composting-related activities are unlikely to degrade water quality and are therefore exempt from the composting general order (SWRCB 2015):

- *Agricultural operations*: Composting that occurs as part of materials or nutrient management at agricultural operations is exempt as long as agricultural WDRs or water quality protections under other general orders are in place.
- *Chipping and grinding facilities*: CalRecycle requires that chip and grind material not be on-site for more than 48 hours or up to 7 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 also is exempt. Anerobic digestion is the most common form of in-vessel composting; however, self-contained aerobic systems are sometimes used in urban environments.
- *Small composting operations*: Composting operations that receive, process, and store less than 500 cubic yards of allowable materials at a time are generally exempt. Composting operations of less than 5,000 cubic yards of allowable materials per year are generally exempt when materials are completely covered during storm events and water application is managed to reduce the generation of wastewater.

Facilities that are exempt from coverage under the Composting WDRs may need to operate under the NPDES General Permit for Storm Water Discharges Associated with Industrial Activities, Order 2014-0057-DWQ (Industrial NPDES). The Industrial NPDES requires a SWPPP, including implementation of industrial process and stormwater management BMPs, preventive maintenance, spill and leak prevention and response, and regular monitoring and reporting.

Facilities that process high-risk feedstocks, such as animal carcasses, medical wastes, sludge, hazardous wastes, and wood containing lead-based paint or preservatives, are not covered by the Composting WDRs and would require individual WDRs issued through the appropriate RWQCB.

Conclusion

In California, SWRCB regulates composting and organic waste recovery operations through Composting WDRs to protect water quality. This approach includes a rigorous suite of protections to ensure that composting facilities and other organic waste management facilities manage 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 for this impact.

Impact 3.10-3: Violation of Any Water Quality Standards or Waste Discharge Requirements or Conflict with the Implementation of a Water Management Plan through Land Application of Uncomposted Organic Materials

The proposed regulation limits the volume of organic waste that can be sent to landfills, which could result in increased land application of materials that are difficult to compost. When properly managed, land application can be accomplished without adversely affecting water quality. However, illegal land application has been documented as a threat to water quality and could increase with implementation of the proposed regulation. Because the proposed regulation could indirectly result in an increase in illegal land application of organic wastes, this impact would be **potentially significant**.

The organic waste disposal reduction goals of the proposed regulation could result in an increase in land application of organic waste. Land application is the spreading of uncomposted organic materials on land such as rangeland and cropland. These materials are often reduced in size before spreading and may include grass clippings from curbside green waste collection, leaves, garden waste, plant trimmings, bark, and agricultural plants. Uncomposted organic materials may contain contaminants such as metals, pathogens, nutrients (e.g., nitrate), salts, or other waste constituents, and they may harbor damaging insects. In addition, uncomposted organic materials from sources such as materials from curbside waste collection programs (such as material collected in single- or two-bin collection programs) may include contaminants such as trash, plastics, glass, metals, pet waste, and other materials. If not conducted appropriately, the application of uncomposted organic materials to land may affect surface water and groundwater.

Land application of uncomposted organic materials may be considered a discharge of waste to land and may be regulated by the RWQCB through the Irrigated Lands Regulatory Program. This may include grower-specific WDRs. The application of green waste to agricultural lands must be accounted for in a grower's nutrient management plan. The WDRs require implementation of BMPs, requirements for irrigation and nutrient application to agricultural land, and conditions requiring water quality monitoring of receiving waters and corrective action when impairment is found.

Inappropriate and unregulated land application can threaten water quality. Since 2015, nine sites of potentially illegal application of uncomposted organic material to land were documented that may pose a threat to water quality and beneficial uses that have been identified by RWQCB staff (SWRCB 2018). Violations include the disposal of several thousand tons of "overs" (large-diameter pieces of organic waste usually containing glass, film, plastic, or paper products) in a ravine. Because overs are a difficult material to handle and the proposed regulation limits the volume of organic material that can be sent to landfills, SWRCB anticipates that these practices could become more common (SWRCB 2018).

The organic waste disposal reduction goals of the proposed regulation could result in an increase in direct land application of uncomposted organic materials. When properly managed, land application can be accomplished without adversely affecting water quality. However, because a potential increase in illegal land application could degrade water quality, this impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.10-3: Develop Land Application Enforcement Strategy

Cal Recycle shall require Local Enforcement Agencies (LEAs) to develop an enforcement strategy for identification of illegal land application sites. This strategy includes regulatory requirements that specify that operators that send material for land application keep records of sites where compostable material is land applied, and requirements for LEAs to review the records, inspect a statistically significant number of sites, and inform the appropriate LEA of land application occurring within their jurisdiction. LEAs enforcement strategies may additionally include encouragement of secondary processing to reduce the volume of compost overs, community outreach regarding the potential adverse effects of illegal land application, identification of sites (such as remote canyons) that may be more at risk for illegal dumping of organic wastes, development of avenues of anonymous public communication, and coordination with adjacent LEAs and RWQCB enforcement staff.

Significance after Mitigation

Implementation of Mitigation Measure 3.10-3 would reduce potentially significant impacts to water quality from improper and illegal application of organic wastes by requiring LEAs to develop a strategy to combat illegal land application activities. For solid waste facility operators subject to an LEA permit that are sending material to land application, this impact would be reduced to a less-than-significant level. However, for individual projects that are reasonably foreseeable under the proposed regulation, but not subject to LEA permits, CalRecycle does not have the authority to require local implementing agencies to adopt the above mitigation measures, and it is ultimately the responsibility of a lead agency with land use authority to determine and adopt mitigation. Therefore, although it is reasonably anticipated that impacts to hydrologic resources would be less than significant as a result of local government actions and increased enforcement, for projects not subject to an LEA permit, CalRecycle does not have authority to enforce provisions on local governments. Thus, for purposes of the good faith disclosure required by CEQA, water quality impacts from illegal organic material application to land could be **potentially significant and unavoidable**.

Impact 3.10-4: 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 recovery 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, the proposed regulation would not be expected to substantially affect recharge or cause overdraft conditions and this impact would be **less than significant.**

The proposed regulation could spur the development of more than 100 new composting facilities and other organic waste recovery facilities. Some of these facilities could be co-located at existing solid waste-handling facilities or wastewater treatment plants. Others may be constructed as independent facilities at locations zoned for industrial 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. Other facilities (such as chip and grind operations or AD facilities) may require the use of water for dust suppression or solid waste sorting. Groundwater is expected to be supplied by local providers, subject to SGMA requirements, rather than small on-site wells.

As discussed in the environmental setting, DWR is in the process of assessing groundwater basins throughout the State. Groundwater sustainability plans must be developed for medium- and high-priority basins, in compliance with SGMA (see Section 3.10.1, “Regulatory Setting” 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. 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 proposed regulation 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 for this impact.

Impact 3.10-5: Substantial Alteration of the Existing Drainage Pattern of the Site or Area

Organic waste recovery 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 organic waste recovery 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 and site-specific environmental review. Because these existing regulatory protections are in place, this impact would be **less than significant**.

Composting and organic waste recovery facilities require impervious surfaces and water drainage and collection systems to comply with required SWRCB NPDES permits. 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. Composting facility stormwater detention ponds, if used, 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 would control site drainage and prevent new organic waste management 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 and site-specific environmental review. Because these existing regulatory protections are in place, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.10-6: Release of Pollutants as a Result of Project Inundation

Stockpiles of organic wastes and detention ponds placed in floodplains or other areas are subject to inundation. Organic wastes and water from the detention ponds could be carried with floodwaters, resulting in the release of nutrients and pollutants into state waters. The Composting WDRs contain inundation prevention requirements for composting facilities, and any operations located within a 100-year floodplain may be subject to additional local land use restrictions and permits. Additionally, all projects implemented in response to the proposed regulation would be subject to project-level environmental review. Therefore, this impact would be **less than significant**.

Organic waste may contain 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 WDRs contain 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. Finally, all projects implemented in response to the proposed regulation would be subject to project-level environmental review. Because existing regulations are in place to protect organic waste management 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 for this impact.

This page intentionally left blank.

3.11. Land Use and Planning

This land use analysis evaluates consistency of the proposed regulation with applicable land use plans and policies. The physical environmental effects associated with the project, many of which pertain to issues of land use compatibility (e.g., noise, wildfire, aesthetics, air quality), are evaluated in other sections of Chapter 3 of this Draft EIR.

No comments received on the notice of preparation were related specifically to land use compatibility or land use and planning.

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 Law (California Government Code Section 65000-66037)

Division 1, Chapter 3, Article 5 of the State Planning and Zoning Law (California Government Code Section 65300 et seq.) requires cities and counties to adopt and implement general plans. General plans are comprehensive documents that describe the framework for the long-range 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 (and, going forward, environmental justice). In addressing these topics, a general plan typically identifies the goals, objectives, policies, principles, standards, and plan proposals that support the city's or county's vision for the area. A general plan is a long-range document that typically addresses the land use, development policies, and desired resource characteristics of a jurisdiction over a 20-year period or longer (although housing elements must be updated every 8 years). Although a general plan serves as a road map for future development and identifies the overall vision for the planning area to which it applies, it remains general enough to allow for flexibility in the approach taken to achieve the plan's goals.

A city or county may also provide land use planning by developing community or specific plans for smaller, more specific areas within its jurisdiction. These more localized plans provide for focused guidance on developing a specific area, with development standards tailored to the area, as well as systematic implementation of the general plan. Specific and community plans are required to be consistent with the city or county's general plan.

Division 1, Chapter 4, Article 1 of the State Planning and Zoning Law also establishes that zoning ordinances, which are laws that define allowable land uses in a specific zone district, are generally required to be consistent with the applicable general plan and any applicable specific plans (California Government Code Section 65860 et seq.).

The city or county zoning code is the set of detailed requirements that implement the general plan policies at the level of the individual parcel. The zoning code presents standards for different uses and identifies which uses are allowed in the various zoning districts of the jurisdiction. Zoning ordinances generally also set forth standards for development of land, use of hazardous materials, and noise generation.

The proposed regulation covers land owned by local jurisdictions, special districts, nonprofit organizations, and private landowners in multiple counties with multiple cities. Each of these counties and cities has local regulations and general plans with unique goals and policies related to land use and planning.

Subdivision Map Act (California Government Code Section 66410-66499.58)

In general, land cannot be divided in California without local government approval. The primary goals of the Subdivision Map Act (Government Code Section 66410 et seq.) are threefold: to encourage orderly community development by regulating subdivision design and improvements while considering the relationship to adjoining areas, to ensure that the areas within the subdivision that are dedicated for public purposes will be properly improved by the subdividing entity so that they will not become an undue burden on the community, and to protect the public and individual transferees from fraud and exploitation. Dividing land for sale, lease, or financing is regulated by local ordinances based on the state Subdivision Map Act.

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 may include general plan policies and ordinances protective of these resources. This EIR assumes that the reasonably foreseeable compliance responses associated with implementation of SB 1383 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.

3.11.2. Environmental Setting

In California, the state Planning and Zoning Law provides the primary legal framework that cities and counties must follow in land use planning and controls. Planned land uses are designated in the city or county general plan, which serves as the comprehensive master plan for the community. Also, city and county land use and other related resource policies are defined in the general plan. The primary land use regulatory tool provided by the California Planning and Zoning Law is the zoning ordinance adopted by each city and county. Planning and Zoning Law requirements are discussed in the “Regulatory Setting” section, above.

When approving land use development, cities and counties must comply with CEQA, which requires that they consider the significant environmental impacts of their actions

and the adoption of all feasible mitigation measures to substantially reduce the level of impacts if a project would cause significant or potentially significant effects on the environment. In some cases, building permits may be ministerial, and therefore exempt from CEQA, but most land use development approval actions by cities and counties require CEQA compliance.

Land use decisions in California are also be governed by state agencies, such as the California Coastal Commission, California State Lands Commission, and California Department of Parks and Recreation, when the state has land ownership or permitting authority with respect to natural resources or other state interests.

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 facilities on these factors relating to land use. Potential impacts were assessed based on the development of facilities that would result from implementing the proposed regulation.

Thresholds of Significance

An impact on land use would be significant if implementation of the proposed regulation would:

- physically divide an established community; or
- cause a significant environmental impact from 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

Facilities developed under the proposed regulation could be located near communities and cities; however, they would be located in areas that are already zoned for industrial or solid waste-handling uses. These facilities would be co-located with existing waste management sites or wastewater treatment plants, or located on undeveloped sites contiguous to sites with similar land uses. Therefore, they 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: Significant Environmental Impact from a Conflict with a Land Use Plan, Policy, or Regulation Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect

The proposed regulation would result in development of facilities on lands owned and managed by various entities, including private landowners, cities, counties, and state agencies. In general, facilities 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 implement facilities 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**.

The proposed regulation would require broad actions to reduce methane emissions from landfills, including reductions in organic waste disposal, edible food recovery, implementation of food recovery programs, and identification of markets for the byproducts generated from activities associated with the regulation. Specific actions associated with these objectives would involve development of facilities to manage organic waste, including compost facilities, AD facilities, chipping and grinding facilities, recycling facilities, biomass conversion facilities, and other, as-yet-undefined technologies for the recovery of organic waste. Development of these facilities would generally involve either expansion of existing waste management sites or development of new sites in areas zoned for industrial or solid waste-handling uses.

Most developments associated with the proposed regulation would occur on lands owned or managed by private owners, cities, counties, or special districts, and generally would be required to comply with applicable city and county general plans and other local policies and ordinances. Development of facilities on state-owned and -managed lands would be subject to plans that have been adopted by the subject agency.

Organic waste recovery facilities would be reasonably expected to co-locate with existing, permitted solid waste facilities or wastewater treatment plants or locate in areas zoned for industrial or solid waste–handling activities and are thus anticipated to comply with land use planning and zoning requirements. However, if a proposed facility includes acquisition and development of undisturbed areas to expand the existing footprint, or development of a greenfield site, then compliance with applicable land use plans, policies, and regulations would need to be analyzed at the project level.

Projects proposed to implement the regulation would be reviewed by the local lead agency for consistency with local plans, policies, and ordinances. The environmental impacts that could result from implementation of the proposed regulation are assessed throughout this EIR, and mitigation is identified to reduce significant and potentially significant impacts; thus, this EIR addresses, to the extent applicable to the proposed

regulation, potential conflicts with any land use plan, policy, or regulation developed to avoid or mitigate an environmental effect. Additionally, project proponents would be required to complete a project-specific analysis that would evaluate projects implemented under the proposed regulation to determine whether the activities and environmental effects are addressed within the scope of this EIR, consistent with Section 15168 of the State CEQA Guidelines for later activities consistent with a program and its EIR.

Facilities developed under the proposed regulation that are within the jurisdiction of local governments would adhere to local plans, policies, and ordinances to the extent the project is subject to them, and facilities developed on state-owned and -managed lands would be developed to be consistent with applicable state plans. Further, the environmental impacts of the proposed regulation are evaluated throughout this Draft EIR; mitigation measures are identified to avoid or reduce impacts and ensure consistency with land use plans, policies, and regulations pertinent to resources considered in this EIR and adopted for the purpose of avoiding or mitigating effects on these resources. For these reasons, implementation of the proposed regulation would not cause a significant environmental impact from a conflict with a land use plan, policy, or regulation. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

This page intentionally left blank.

3.12. Noise

This section includes a summary of applicable regulations related to noise and vibration, a description of ambient-noise conditions, and an analysis of potential short-term construction and long-term operational-source noise impacts associated with the proposed regulation. Mitigation measures are recommended as necessary to reduce significant noise impacts.

No comments received on the notice of preparation were related to noise.

3.12.1. Acoustic Fundamentals

Prior to discussing the regulatory or environmental noise setting for the project, background information about sound, noise, vibration, and common noise descriptors is needed to provide context and a better understanding of the technical terms referenced throughout this section.

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 the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determines the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Frequency

Continuous sound can be described by frequency (pitch) and amplitude (loudness). 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.

Sound Pressure Levels and Decibels

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-Pascals (mPa). One mPa is approximately one hundred billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 mPa. Because of this large range of values, sound is rarely expressed in terms of mPa. Instead, a logarithmic scale is used to describe sound pressure level (SPL) in terms of decibels (dB).

Addition of Decibels

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 sound under the same conditions. 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 the range of audible frequencies as well as in the way it perceives the SPL in that range. 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 A-weighted decibels) can be computed based on this information.

The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgment correlates well with the A-scale sound levels of those sounds. Thus, noise levels are typically reported in terms of A-weighted decibels. All sound levels discussed in this section are expressed in A-weighted decibels. Table 3.12-1 describes typical A-weighted noise levels for various noise sources.

Table 3.12-1 Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dB)	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

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
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 2013b: Table 2-5

Human Response to Changes in Noise Levels

The doubling of sound energy results in a 3-dB increase in the sound level. However, given a sound level change measured with precise instrumentation, the subjective human perception of a doubling of loudness will usually be different from what is measured.

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 2013b: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 2013b: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.

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 peak particle velocity (PPV) or root-mean-square (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 2006:7-5, Caltrans 2013b: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 vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration (FTA 2006:7-4; Caltrans 2013a: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 (FTA 2006:7-8; Caltrans 2013a:27).

Typical outdoor sources of perceptible ground vibration are construction equipment, steel-wheeled trains, and traffic on rough roads (assuming a receptor is near enough to the road to feel the vibration). If a roadway is smooth, the ground vibration is rarely perceptible. Vibrations generated by construction activity can be transient, random, or continuous. Transient construction vibrations are typically generated by more vibration-intensive construction activities and equipment such as blasting, impact pile driving, and wrecking balls. Continuous vibrations are typically generated by more vibration-intensive construction activities and equipment such as vibratory pile drivers, large pumps, and compressors. Random vibration can result from jackhammers, pavement breakers, and heavy construction equipment.

Table 3.12-2 summarizes the general human response to different ground vibration-velocity levels.

Table 3.12-2 Human Response to Different Levels of Ground Noise and Vibration

Vibration-Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

Notes: VdB = vibration decibels referenced to 1 μ inch/second and based on the root mean square (RMS) velocity amplitude.

Source: FTA 2006:7-8

Common Noise Descriptors

Noise in our daily environment fluctuates over time. Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise descriptors used throughout this section.

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 2013b: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 Caltrans and Federal Transit Agency (FTA) (Caltrans 2013b:2-47; FTA 2006:2-19).

Maximum Sound Level (L_{max}): L_{max} is the highest instantaneous sound level measured during a specified period (Caltrans 2013b:2-48; FTA 2006:2-16).

Day-Night Level (L_{dn}): L_{dn} is the energy average of A-weighted sound levels occurring over a 24-hour period, with a 10-dB "penalty" applied to sound levels occurring during nighttime hours between 10:00 p.m. and 7:00 a.m. (Caltrans 2013b:2-48; FTA 2006:2-22).

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-dB penalty applied to sound levels occurring during the nighttime hours between 10:00 p.m. and 7:00 a.m. and a 5-dB penalty applied to the sound levels occurring during evening hours between 7:00 p.m. and 10:00 p.m. (Caltrans 2013b:2-48). Many agencies and local jurisdictions in California often have established noise standards using the CNEL metric.

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

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.

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., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), additional 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 dB of noise reduction (Caltrans 2013b:2-41; FTA 2006:5-6, 6-25). Barriers higher than the line of sight provide increased noise reduction (FTA 2006:2-12). 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 2006:2-11).

3.12.2. Regulatory Setting

Federal

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at more local levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were largely transferred to state and local governments. However, documents and research completed by the EPA Office of Noise Abatement and Control continue to provide value in the analysis of noise effects.

Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under Title 40 Code of Federal Regulations (CFR), Part 205, Subpart B. The federal truck pass-by noise standard is 80 dB at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers.

Federal Occupational Safety and Health Administration (OSHA) regulations also OSHA regulations also protect workers from excessive occupational noise exposure (29 CFR Section 1910.95).

State

The California Department of Health Services' Office of Noise Control studied the correlation of noise levels and their effects on various land uses and published land use compatibility guidelines for the noise elements of local general plans. The guidelines are the basis for most noise element land use compatibility guidelines in California.

The State of California also establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the State pass-by standard is consistent with the federal limit of 80 dB at 15 meters. The State pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dB at 15 meters from the centerline. These standards are implemented through controls on vehicle manufacturers and by legal sanction of vehicle operators by State and local law enforcement officials.

California General Plan Guidelines for Noise Elements

The State of California General Plan Guidelines 2017, published by the California Governor's Office of Planning and Research (OPR 2017), 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. These guidelines are presented in Table 3.12-3. Citing EPA materials and the State Sound Transmissions Control Standards, the State's general plan guidelines

recommend interior and exterior CNELs of 45 and 60 dB for residential units, respectively (OPR 2017:378). For commercial land uses, the guidelines recommend an exterior CNEL of up to 65 dB for multi-family residential building and hotels, 70 dB for office buildings, schools, libraries and churches, and 75 dB for industrial, agricultural, and recreational land uses.

Table 3.12-3 General Plan Community Noise Exposure Guidance by Land Use

Land Use Category	Normally Acceptable[1]	Conditionally Acceptable[2]	Normally Unacceptable[3]	Clearly Unacceptable[4]
Single-family residential, duplexes, mobile homes	<60	55-70	70-75	>75
Multi-family residential	<65	60-70	70-75	>75
Hotels and motels	<65	60-70	70-80	>80
Schools, Libraries, Churches, Hospitals, Nursing Homes	<70	60-70	70-80	>80
Playgrounds, Neighborhood Parks	<70	67-75	>73	Undefined
Office Buildings	<70	67-77	>75	Undefined
Industrial & Manufacturing	<75	70-80	>75	Undefined

Notes: CNEL = Community Noise Equivalent Level; dB = decibels.

1. For conventional construction, without any special noise insulation design features.
2. For construction with noise reduction features and/or conventional construction with permanently closed windows.
3. Unacceptable unless noise insulation features have been included in the design and noise reduction requirements in place.
4. Incompatible with construction and development.

Source: OPR 2017

California Building Standards Code

Title 24, Part 2, Section 1207 of the California Building Standards Code establishes a uniform minimum noise insulation performance standard to protect persons within hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family dwellings from the effects of excessive noise, including hearing loss or impairment and interference with speech and sleep. Title 24 states that interior noise levels attributable to exterior sources are not to exceed 45 dB in any habitable room. The noise metric must be either the L_{dn} or CNEL, consistent with standards in the noise element of the local general plan.

Under California Public Resources Code Section 25402.1(g), all cities and counties in the state are required to enforce the adopted California Building Standards Code, including these noise insulation performance standards.

California Department of Transportation

In 2013, the California Department of Transportation (Caltrans) published the Transportation and Construction Vibration Manual (Caltrans 2013a). 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.

Table 3.12-4 Caltrans Recommendations Regarding Levels of Vibration Exposure

PPV (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: PPV= Peak Particle Velocity; in/sec = inches per second

Source: Caltrans 2013a.

Local

When state agencies, including CalRecycle, are conducting governmental activities under the authority of state law or the State Constitution they are exempt from local government plans, policies, and ordinances (unless a constitutional provision or statute directs otherwise). Nonetheless, state agencies, including CalRecycle, voluntarily seek to operate consistently with local governance to the extent feasible. Given its statewide extent and the possible number of local and regional responsible agencies, this EIR does not identify potentially applicable local government plans, policies, and ordinances.

Cities and counties establish general plan noise elements and/or noise ordinance standards that provide land use compatibility guidelines and locally acceptable standards to reduce noise conflicts between land uses. The State of California General Plan Guidelines 2017 described above are used as a guide for local government when developing these thresholds.

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

general plan policies and ordinances protective of these resources. This EIR assumes that the reasonably foreseeable compliance responses associated with implementation of SB 1383 would be consistent with local plans, policies, and ordinances to the extent that anticipated organic waste recovery infrastructure projects are subject to them.

3.12.3. Environmental Setting

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, transient lodging, historic sites, cemeteries, 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.

Existing Noise Environment

The noise near organic waste recovery facilities would be expected to be typical of solid waste facilities such as landfills, compost facilities, material recovery facilities (MRFs), and industrial areas among others. These sites normally include indoor and outdoor heavy-duty equipment operation.

Another important noise source at organic waste recovery and other solid waste facilities is the noise along local access routes from trucks entering and exiting solid waste facilities. As shown in Table 3.12-1 the normal acceptable decibel range in industrial areas (including solid waste facilities) would be up to 75 dB CNEL and the conditionally acceptable decibel range would be up to 80 dB CNEL.

3.12.4. Environmental Impacts and Mitigation Measures

Methodology

Construction of new or expanded organic waste recovery facilities would generate noise during construction activities. To assess potential short-term (construction-related) noise and vibration impacts, sensitive receptors and their relative exposure were identified. Reference levels for noise and vibration emissions for specific equipment or activity types are well documented and the usage thereof common practice in the field of acoustics. Due to the programmatic nature of this Draft EIR and the uncertainty surrounding the location, size, intensity, and magnitude of future construction activities, short-term construction noise effects are discussed qualitatively.

Operation of new or expanded organic waste recovery facilities implemented in response to the proposed regulation would result in long-tern noise effects. Due to the

programmatic nature of the proposed regulation, the level of activity at a future organic waste recovery facility is unknown at the time of writing this Draft EIR. As a result, long-term noise effects are assessed qualitatively.

Thresholds of Significance

A noise impact would be significant if implementation of the proposed regulation would:

- generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- generate excessive groundborne vibration or groundborne noise levels; or
- for a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport of public use airport, expose people residing or working in the project area to excessive noise.

Issues Not Discussed Further

There are no issues related to noise that are dismissed from analysis.

Environmental Impacts and Mitigation Measures

Impact 3.12-1: Short-Term Construction-Related Noise Effects

Implementation of the proposed regulation would result in the construction of new or expanded waste recovery facilities and related infrastructure that would generate temporary construction-related noise. Based on noise emissions levels from typical types of equipment used during construction and accounting for typical usage factors of individual pieces of equipment activities and attenuation, on-site construction could result in construction noise that exceeds noise standards established in local general plans and noise ordinances or that are substantially greater than the ambient noise environment. Thus, implementation of reasonably foreseeable compliance responses could result in the generation of short-term construction 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**.

Reasonably foreseeable compliance responses that could result from implementation of the proposed regulation could include construction of new or expanded organic waste recovery facilities (such as composting, anaerobic digestion, and chip and grind facilities, among others) and related infrastructure at: existing waste management sites (e.g., landfills, compost facilities, MRFs); existing wastewater treatment plants (WWTPs); or near dairies (for manure composting only); or new standalone sites in areas zoned for industrial or solid waste-handling facilities. The proposed regulation could also include development of community-scale compost facilities and edible food recovery facilities in urban areas. Edible food recovery infrastructure could include the

development of new, or reuse of existing, buildings or warehouses to support the collection, storage, preparation, and distribution of edible food. Edible food can be collected and transported by food recovery vehicles.

Construction noise levels that could result from reasonably foreseeable compliance responses 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 of the 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 tasks in a recurring manner (e.g., loaders, graders, dozers). Stationary equipment operates in a given location for an extended period of time to perform continuous or periodic operations. Operational characteristics of heavy construction equipment are additionally typified by short periods of full-power operation followed by extended periods of operation at lower power, idling, or powered-off conditions.

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 and activities include 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 can range from approximately 74 to 94 dB at 50 feet.

Based on this information and accounting for typical usage factors of individual pieces of equipment and activity types, on-site construction could result in hourly average noise levels of 87 dB L_{eq} at 50 feet and maximum noise levels of 90 dB L_{max} at 50 feet from the simultaneous operation of heavy-duty equipment and blasting activities, if deemed necessary. Based on these and standard attenuation rates, exterior noise levels at noise-sensitive receptors located within thousands of feet from project sites could exceed typical standards established in local general plans and noise ordinances (e.g., 50/60 dB L_{eq}/L_{max} during daytime hours and 40/50 dB L_{eq}/L_{max} during nighttime hours).

Additionally, construction activities may result in varying degrees of temporary groundborne noise and vibration, depending on the specific construction equipment used and activities involved. Groundborne noise and vibration levels caused by various types of construction equipment and activities (e.g., bulldozers, blasting) range from 58 to 109 VdB and from 0.003 to 0.089 in/sec PPV at 25 feet. Similar to the above discussion, although a detailed construction equipment list is not currently available, based on the types of facilities that would be constructed it is expected that the primary sources of groundborne vibration and noise would include bulldozers and trucks.

According to the FTA, levels associated with the use of a large bulldozer and trucks are 0.89 and 0.076 in/sec PPV (87 and 86 VdB) at 25 feet, respectively. With respect to the prevention of structural damage, construction-related activities would not exceed recommended levels (e.g., 0.2 in/sec PPV). However, based on FTA's recommended procedure for applying a propagation adjustment to these reference levels, bulldozing and truck activities could exceed recommended levels with respect to the prevention of human disturbance (e.g., 80 VdB) within 275 feet.

Thus, implementation of reasonably foreseeable compliance responses could result in the generation of short-term construction noise in excess of applicable standards or a substantial increase in ambient levels at nearby sensitive receptors, and exposure to excessive vibration levels.

Short-term construction-related impacts on noise associated with the construction of organic waste recovery facilities would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.12-1: Implement Noise-Reduction Measures during Project Construction

As described in Section 1.2, "Purpose of this EIR," the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant construction-related noise. Mitigation measures to reduce construction-related noise impacts can and should be implemented by local jurisdictions with land use authority. Site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.

The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize impacts related to construction noise:

- Proponents of new facilities constructed under the reasonably foreseeable compliance responses would coordinate with local or State land use agencies to seek entitlements for development including the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must comply with applicable regulations and would approve the project for development.
- Based on the results of project level environmental review, project proponents would implement all feasible mitigation identified in the environmental document to reduce or substantially lessen the environmental impacts of the project The definition of actions required to mitigate potentially significant noise impacts may include the following; however, any mitigation specifically required for a new or modified facility would be determined by the local lead agency.
- Ensure noise-generating construction activities (including truck deliveries, pile driving, and blasting) are limited to the least noise-sensitive times of day (e.g., weekdays during the daytime hours) for projects near sensitive receptors.
- Consider use of noise barriers, such as berms, to limit ambient noise at property lines, especially where sensitive receptors may be present.
- Ensure all project equipment has sound-control devices no less effective than those provided on the original equipment.
- All construction equipment used would be adequately muffled and maintained.
- Consider use of battery-powered forklifts and other facility vehicles.
- Ensure all stationary construction equipment (i.e., compressors and generators) is located as far as practicable from nearby sensitive receptors or shielded.
- Properly maintain mufflers, brakes and all loose items on construction and operation related vehicles to minimize noise and address operational safety issues. Keep truck operations to the quietest operating speeds. Advise about downshifting and vehicle operations in sensitive communities to keep truck noise to a minimum.
- Use noise controls on standard construction equipment; shield impact tools.
- Consider use of flashing lights instead of audible back-up alarms on mobile equipment.
- Install mufflers on air coolers and exhaust stacks of all diesel and gas- driven engines.
- Equip all emergency pressure relief valves and steam blow-down lines with silencers to limit noise levels.

- Contain facilities within buildings or other types of effective noise enclosures.
- Employ engineering controls, including sound-insulated equipment and control rooms, to reduce the average noise level in normal work areas.

Significance after Mitigation

Implementation of Mitigation Measure 3.12-1 would reduce construction noise and vibration impacts because it would require project sponsors to implement best practices at construction sites to minimize these effects. However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, this EIR discloses, for CEQA-compliance purposes, that short-term, construction-related noise impacts resulting from the development of new facilities associated with the proposed regulation could be **potentially significant and unavoidable**.

Impact 3.12-2: Long-Term Operation Effects on Noise

Implementation of the proposed regulation would result in the operation of new or expanded waste recovery facilities and related infrastructure that would generate on-going 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, implementation of reasonably foreseeable compliance responses 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**.

Reasonably foreseeable compliance responses that could result from implementation of the proposed regulation could include: operation of new or expanded organic waste recovery facilities (such as composting, anaerobic digestion, and chip and grind facilities, among others) at: existing waste management sites (e.g., landfills, compost facilities, MRFs); existing WWTPs; near dairies (for manure composting only); or new standalone sites in areas zoned for industrial or solid waste handling facilities. The proposed regulation would also involve operation of biogas facilities and local community-scale compost and edible food recovery facilities.

The types of equipment that process and handle material at these facilities (such as tub grinders and off-road heavy duty trucks) can emit high levels of noise. Similarly, flares used at AD facilities to dispose of methane vapors are notably loud. However, flares at digesters would not be expected to operate except for emergency purposes. Flares installed as a result of implementation of the proposed regulation would not substantially affect noise levels. Depending on the proximity to existing noise-sensitive receptors, equipment and regular operations at new or expanded organic waste recovery facilities could generate noise levels of a similar magnitude as those described for typical construction equipment in Impact 3.12-1, above, that could exceed applicable noise standards and result in a substantial increase in ambient noise levels, and exposure to excessive vibration levels.

Long-term operational noise impacts associated with implementation of the proposed regulation could be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.12-2: Implement Noise-Reduction Measures during Project Operation

CalRecycle shall require LEAs to incorporate the following conditions into permits, as appropriate, based on the facts at the proposed facility site, before approving a solid waste facility permit or registration permit for organic waste recovery projects developed to comply with the proposed regulation. For individual projects not under the jurisdiction of LEAs, site-specific, project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.

Recognized practices that can and should be required to avoid and/or minimize noise include:

- All powered equipment shall be used and maintained according to manufacturer's specifications.
- Public notice of activities shall be provided to nearby noise-sensitive receptors of potential noise-generating activities.
- All motorized equipment shall be shut down when not in use.
- Idling of equipment or trucks shall be limited to 5 minutes.
- All heavy equipment and equipment operation areas shall be located as far as possible from nearby noise-sensitive land uses (e.g., residential land uses, schools, hospitals, places of worship, recreation resources).
- To achieve an interior noise level less than 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.

Significance after Mitigation

Implementation of Mitigation Measure 3.12-2 would reduce operational noise and vibration impacts because it would require project sponsors to implement best practices at organic waste recovery facilities to minimize these effects. For projects subject to an LEA permit, these impacts would be reduced to a less-than-significant level. However, for individual projects that are reasonably foreseeable under the proposed regulation, but not subject to LEA permits, CalRecycle does not have the authority to require local implementing agencies to adopt the above mitigation measures, and it is ultimately the responsibility of a lead agency with land use authority to adopt the mitigation described herein, which it can and should do, or consider and adopt other feasible mitigation measures. Therefore, although it is reasonably anticipated that operational noise and vibration impacts would be less than significant as a result of local government land use approvals, CalRecycle does not have the authority to enforce provisions on local governments where there is no LEA permit, so for purposes of the good faith disclosure required by CEQA, operational noise impacts could be **potentially significant and unavoidable**.

Impact 3.12-3: Expose People Residing or Working Within Two 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 the equivalent) to discourage incompatible land uses within the vicinity of the airport. It is possible that with implementation of the proposed regulation that new or expanded organic waste recovery facilities could be located within the vicinity (e.g., within 2 miles) of a public or private airport. Implementation of the proposed regulation would not result in the development of new residential land uses that could be exposed to excessive noise. 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. However, 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**.

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 145 public and private airports (Airport Authority 2019) 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 (FAR) 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 CNEL 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 implementation of the proposed regulation that new or expanded organic waste recovery facilities could be located within the vicinity (e.g., within 2 miles) of a public or private airport. 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 6 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.

Implementation of the proposed regulation would not result in the development of new residential land uses that could be exposed to excessive noise. 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. 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 for this impact.

Governor's Office of Planning and Research. 2017 (August). *State of California General Plan Guidelines*. Sacramento, CA. Available: http://opr.ca.gov/docs/OPR_COMPLETE_7.31.17.pdf. Accessed May 14, 2019.

OPR. *See* Governor's Office of Planning and Research.

3.13. Transportation

This section describes the existing transportation system in California and evaluates the potential impacts on the system associated with implementation of the project. Roadway, transit, bicycle, and pedestrian components of the overall transportation system are included in the analysis. Impacts are evaluated under near-term (present-day) conditions with and without the project, and cumulative (year 2036) conditions with project. Consistent with State CEQA Guidelines amendments adopted in 2018, vehicle miles traveled (VMT) are discussed. The traffic analysis focuses on a specific project study area for transportation and circulation, which is defined in Section 3.13.2, "Environmental Setting," below.

Comments received in response to circulation of the notice of preparation expressed concerns related to the potential for increased VMT. This topic is addressed in the discussion of Impact 3.13-4, below.

3.13.1. 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 follow 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 Manual on Uniform Traffic Control Devices

This *California Manual on Uniform Traffic Control Devices*, published by Caltrans, issued to adopt uniform standards and specifications for all official traffic control devices in California. TTC applies when the normal function of the roadway, or a private road open to public travel, is suspended and is intended to provide for the reasonably safe and effective movement of road users through or around TTC zones while reasonably protecting road users, workers, responders to traffic incidents, and equipment. TTC planning provides for continuity of the movement of motor vehicle, bicycle, and pedestrian traffic (including accessible passage); transit operations; and access to property and utilities. TTC plans should be prepared by persons knowledgeable about the fundamental principles of TTC and work activities to be performed, and the design, selection, and placement of TTC devices for a TTC plan should be based on engineering judgment (Caltrans 2019).

Transportation Management Plan Guidelines

The Caltrans *Transportation Management Plan Guidelines* (2015) identify the processes, roles, and responsibilities for preparing and implementing transportation management plans (TMPs), as well as useful strategies for reducing congestion and managing work zone traffic impacts. TMP strategies are required for all planned construction, maintenance, and encroachment permit activities within the Caltrans right-of-way and requires a Caltrans encroachment permit. A TMP encompasses activities that are implemented to minimize traffic delays that may result from lane restrictions or closures in a work zone. TMP strategies are designed to improve mobility, as well as safety for the traveling public and highway workers.

Senate Bill 743

SB 743, passed in 2013, required the Governor's Office of Planning and Research (OPR) to develop new CEQA guidelines that address traffic metrics under CEQA. As stated in the legislation, upon adoption of the new guidelines, "automobile delay, as described solely by LOS [level of service] or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any."

The California Natural Resources Agency finalized and Office of Administrative Law approved a comprehensive regulatory update to the State CEQA Guidelines in December 2018. It included the addition of requirements related to analyzing transportation impacts pursuant to SB 743. The update identified VMT as the primary metric used to identify significant transportation impacts. Also in December 2018, OPR published the most recent version of the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR 2018), which provides non-regulatory guidance

for VMT analyses. Lead agencies have a discretionary opt-in period until July 1, 2020 to implement the updated guidelines, after which the VMT guidance becomes mandatory.

As noted in the updated guidelines, agencies are directed to choose metrics that are appropriate for their jurisdiction to evaluate the potential impacts of a project in terms of VMT. The guidance provided thus far relative to VMT significance criteria is focused on residential, office, and retail uses which would not apply to organic waste recovery activities that would occur with implementation of the proposed regulation. For rural land uses, OPR guidance states that projects in rural areas outside of a metropolitan planning organization territory have fewer options available for reducing VMT and significance thresholds may be best determined on a case-by-case basis.

Mandatory Commercial Organic Waste Recycling Law

In October 2014 Governor Brown signed AB 1826 Chesbro (Chapter 727, Statutes of 2014), 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 that consist of five or more units (please note, however, that multifamily dwellings are not required to have a food waste disposal reduction program). Organic waste (also referred to as organics throughout this resource) means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste. This law phases in the mandatory recycling of commercial organics over time, while also offering an exemption process for rural counties.

Local

Given its statewide extent and the possible number of local responsible agencies, this EIR does not identify individual, potentially applicable local government plans, policies, and ordinances. Types of local regulations relevant to transportation and traffic may include general plan policies and ordinances protective of these resources. This EIR assumes that the reasonably foreseeable compliance responses associated with implementation of SB 1383 would need to 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 would be conditioned upon such consistency.

3.13.2. Environmental Setting

This section describes the existing transportation system, identifies applicable regulatory requirements, and evaluates impacts to traffic operations, bicycle, pedestrian, and transit facilities, roadway hazards and obstructions, and emergency access resulting from implementation of the proposed regulation.

Roadway System

The three basic types of roadways in California are interstate highways, state routes, and local roadways. Roadways are generally classified according to FHWA Functional Classification Guidelines and the designed level of mobility and land access. Local roadways provide the greatest access to adjacent land via driveways and other roadways and are consequently generally smaller than interstate highways and state routes. Other roadway types include arterials and collectors. Arterials emphasize a high level of mobility for through movement and consequently have higher capacity and speed with relatively little accessibility to adjacent land. Collectors offer a combination of both functions.

Public Transit

Public transit service is provided by various agencies throughout the state. Local and regional transit organizations offer a variety of transit options, including buses, subways, ferries, and light rail. Service is provided with varying frequency and cost.

Bikeways and Pedestrian Circulation

The bicycle and pedestrian network and the 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, described as follows:

- **Class I bikeways** are 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** are bike lanes established along streets and are defined by pavement striping and signage to delineate a portion of a roadway for bicycle travel.
- **Class III bikeways** are shared routes for bicyclists on streets with motor traffic not served by dedicated bikeways to provide continuity to the bikeway network.

3.13.3. Environmental Impacts and Mitigation Measures

This section describes the analysis techniques, assumptions, and results used to identify potential significant impacts of the proposed regulation on the transportation system. Transportation impacts are described and assessed, and mitigation measures are recommended for impacts identified as significant or potentially significant.

Methodology

The analysis of transportation impacts related to implementation of the proposed regulation includes qualitative analysis of temporary traffic operations, the potential for new or expanded organic waste recovery facilities to result in a transportation hazard (such as a sharp curve or a dangerous intersection) or inadequate emergency access,

and statewide VMT. The analysis is based on the construction and operational characteristics of the types of facilities that could be built, the equipment used during construction and operation of these facilities, and methods of transporting organic waste.

Methodology for Determining VMT Threshold of Significance

Section 15064.3 was added to the State CEQA Guidelines effective December 28, 2018, as part of a comprehensive guidelines update. The section addresses the determination of significance for transportation impacts, which requires that the analysis be based on VMT instead of a congestion metric (such as LOS). The change in the focus of transportation analysis is the result of legislation (SB 743, Statutes of 2013) and is 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 in analysis may be implemented now and is mandated to be addressed beginning July 1, 2020. Because the proposed regulation would be implemented after the date on which VMT is required to be considered, it is included in the analysis in this EIR.

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 proposed regulation include development and operation of new facilities, the proposed regulation would not drive development of urban areas, residential development, major employment generation, or transportation projects.

State CEQA Guidelines Section 15064.3(b)(3) states that a qualitative analysis is appropriate if existing models or methods are not available to estimate VMT. It is not feasible to quantify the estimated change in VMT for various reasons. The primary issue related to attempts to quantify VMT is that the location of potential future compost facilities, anaerobic digestors, or other organic waste recovery facilities cannot be known at this time. This is compounded by various operational unknowns, such as local agreements that jurisdictions have with haulers providing disposal and/or recycling services, and agreements that haulers have with disposal companies. The proposed regulation would allow jurisdictions to pursue a variety of compliance options to meet organic waste collection goals. Depending on the existing collection scheme and how a jurisdiction complies with the proposed regulation, VMT could increase, decrease, or not change substantially. For these reasons, the VMT analysis is not quantified and is presented in a way that provides a general discussion of how solid waste trips may change throughout the state.

Given the absence of a quantitative method or applicable Technical Advisory scenario, this EIR relies on fundamental CEQA principles for defining a qualitative threshold of significance for VMT. The statutory and regulatory definition of "significant effect on the environment" provides the fundamental principle applicable to thresholds of significance. A significant effect on the environment is defined in CEQA as a "substantial or potentially substantial adverse change in the environment" (PRC Section 21068). For purposes of PRC Section 21100, governing actions for proposed state projects, subpart (a) limits significant effects on the environment to "substantial or potentially substantial adverse changes in physical conditions…." This definition of significant effect on the environment is repeated in Section 15002(g) in Article 1, General, under Section 15002, General Concepts, and Section 15382 in Article 20, Definitions. Based on these provisions, this EIR considers whether an adverse change in physical conditions would occur.

In the case of VMT, an adverse change would be an increase in VMT, because statutory environmental policy seeks to decrease VMT. Consequently, a qualitative threshold of no net increase in VMT is used in this EIR to determine significance of implementing the proposed regulation. Thus, a relative increase in VMT due to implementation of the proposed regulation is determined to result in a significant effect on the environment (see listing under "Thresholds of Significance," below).

Thresholds of Significance

An impact on transportation and traffic would be significant if implementation of the proposed regulation would:

- conflict with a program, plan, ordinance, or policy addressing roadway facilities;
- conflict with a program, plan, ordinance, or policy addressing bicycle, pedestrian, or transit facilities;
- result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- substantially increase hazards from a geometric design feature or incompatible uses;
- result in inadequate emergency access; or
- result in a net increase in VMT.

Issues Not Discussed Further

Implementation of the reasonably foreseeable compliance responses associated with the proposed regulation 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 proposed regulation. Due to the nature of the project, primarily construction and

operation of organic waste recovery facilities and edible food recovery programs and infrastructure, the proposed regulation would not generate demand for transit, bicycle, or pedestrian facilities. Therefore, the proposed regulation would not create any 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, transit, bicycle, and pedestrian facilities are not evaluated further.

Environmental Impacts and Mitigation Measures

Impact 3.13-1: Construction-Related Traffic Impacts

Reasonably foreseeable compliance responses associated with the proposed regulation include development of new and expanded facilities to process organic waste, including compost, anaerobic digestion, and chip and grind facilities, among others. 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**.

Reasonably foreseeable compliance responses associated with the proposed regulation include development of new and expanded facilities to process organic waste, including compost, anaerobic digestion, and chip and grind facilities, among others. 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**.

Reasonably foreseeable compliance responses associated with the proposed regulation include development of new and expanded facilities to process organic materials, including compost, anaerobic digestion, and chip and grind facilities, among others. Although detailed information about specific construction activities is not available, facility construction resulting from implementation of the proposed regulation would be anticipated to result in short-term construction traffic (primarily motorized) from worker commute trips and material delivery–related trips. 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 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**.

Mitigation Measures

Mitigation Measure 3.13-1: Prepare a Transportation Construction Plan

As described in Section 1.2, “Purpose of this EIR,” the authority of CalRecycle and LEAs is statutorily limited. They do not have authority to require implementation of mitigation measures that would reduce potentially significant construction-related transportation impacts. Mitigation measures to reduce construction-related transportation impacts can and should be implemented by local jurisdictions with land use authority. Site-specific,

project impacts and mitigation would be identified during a project's local review process. A proposed project would be approved by a local government and potentially another permitting agency that can apply conditions of approval.

The following mitigation measures can and should be required by agencies with project approval authority to avoid or minimize construction traffic impacts:

Prepare a transportation construction plan for all phases of construction.

- 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.
- 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 3.13-1 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 reduce

the impacts from construction activities on the transportation system and traffic. However, adoption and implementation of these mitigation measures are beyond the authority of CalRecycle and LEAs.

The authority to review site-specific, project-level impacts and require project-level mitigation lies primarily with local land use and/or permitting agencies for individual projects. Consequently, although 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. Therefore, this EIR discloses, for CEQA-compliance purposes, that short-term, construction-related traffic impacts resulting from the development of new and expanded facilities associated with the proposed regulation could be **potentially significant and unavoidable**.

Impact 3.13-2: Substantial Increase in Hazards from a Geometric Design Feature (e.g., Sharp Curves or Dangerous Intersection) or Incompatible Uses

Development of new or expanded organic waste recovery facilities 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 process, 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.**

Development of new or expanded organic waste recovery facilities built in response to the proposed regulation could require or result in new internal access roads; driveways to facilitate ingress and egress of vehicles; or minor alterations to existing roadways, such as striping. Major alterations to existing roadways are not anticipated as part of the proposed regulation. However, potential circulation improvements, including roadway improvements/modifications, that may be identified during review of individual organic waste recovery facilities are unknown at this time. Future development under the proposed regulation could 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 composting, anerobic digestion, chip and grind, or other facilities related to implementation of the proposed regulation would be required to undergo the local jurisdictions' discretionary review process, 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 3.13-3: Inadequate Emergency Access

Development of new or expanded facilities associated with the proposed regulation could impede on-site emergency access or interrupt the flow of emergency vehicles on nearby roadways if not regulated properly. All future development would be regulated through the local jurisdictions' discretionary review process, which would require consistency 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**.

Development of new or expanded facilities associated with the proposed regulation could include compost, anerobic digestion, and chip and grind facilities, among others. 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 process, 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 proposed regulation 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 do not obstruct or impede emergency access. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.13-4: Reasonably Anticipated Increase in VMT

Under the proposed regulation, the amount of organic waste delivered to landfills would be reduced through changes to the way food waste and other organic materials are collected and handled. Organic waste would be transported to a qualifying recovery facility, such as a food recovery center, compostable material handling facility, AD facility, a recycling center, or a biomass conversion facility. In some cases, material produced at recovery facilities would be delivered to customers for use as a soil amendment or for direct land application after chipping and grinding. A greater quantity of edible food would also be collected and distributed to people rather than being disposed in a landfill. While collection modifications would not substantially change the amount of travel needed, the post-recovery activities would be reasonably expected to increase vehicle trips within the state and, therefore, vehicle miles traveled (VMT). There is uncertainty in predicting the location of new and expanded organic waste recovery facilities and the locations where rescued food and finished compost would be distributed. Thus, recognizing the expectation of increased travel and uncertainty in future predictions, to meet CEQA's mandate of good-faith disclosure and to not risk understating potential future VMT impacts in light of the uncertainties, this impact is classified as **potentially significant**.

Within California, 506 of the 541 local government jurisdictions have reported providing curbside green waste collection and curbside recycling collection services for their residents (Brady, pers. comm., 2019). Most jurisdictions do not currently collect food waste for recycling at the curb. Under the proposed regulation, 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 qualifying organic waste recovery facility, such as a compost or AD facility, and the material produced at these facilities would be used as a soil amendment or for direct land application. A greater quantity of edible food would also be collected and distributed to people rather than disposed in a landfill.

The influence of the proposed regulation on changes to transportation would vary across the state, depending on the nature of new and existing disposal reduction programs and the location of new or expanded organic waste recovery facilities relative to their current route of travel. Generally, targeted materials would no longer be disposed in landfills but would rather be transported to organic waste recovery facilities. In addition, finished compost and recovered edible food would be distributed within economically viable distances from the recovery facilities. The following reasonably foreseeable changes in trips also are associated with food waste collection and handling:

- Under the proposed regulation, commercial and residential generators would separate their food waste from other solid waste. Some commercial generators, such as supermarkets or restaurants, tend to generate high volumes of food waste that would be collected by trucks separate from those used to collect the

rest of their solid waste. While many of the larger commercial generators are already subject to organic waste collection requirements under the Mandatory Commercial Organic Waste Recycling Law described in Section 3.13.1, "Regulatory Setting," the added routes for collection of food waste from commercial generators would result in localized increases in VMT.

- Residential generators that separate green material would likely comply with the proposed regulation by comingling food waste and green material in the same container. For residential areas with weekly green material collection schemes, there would be no changes to pickup routes. However, many jurisdictions provide green material collection services on a bi-weekly basis and they would need to modify their program to provide weekly service to properly manage the putrescible materials associated with food waste. While shifting bi-weekly collection to weekly collection for green waste could increase VMT, the regulations allows jurisdictions to reduce the frequency of gray container (garbage) collection service to bi-weekly with LEA approval. This could reduce or negate potential VMT increases associated with increased green container collection.
- After food waste is collected, either comingled with green material or collected separately, it would be hauled to an organic waste recovery facility (and possibly an interim processing and/or transfer facility) instead of to a landfill for disposal. It is unknown whether the distance to the organic waste recovery processing facility would be greater or less than the distance to the landfill. Because both organic waste recovery facilities and landfills can be sources of objectionable odors, they are often intentionally located outside of urban areas, but close enough to sources to adequately hold down travel costs. Some organic waste recovery facilities are located at or near existing landfills; the proposed regulation would require new or expanded landfills to include these facilities (27 CCR Section 20750.1). Any attempt to quantify the change in VMT associated with these trips would be speculative, particularly because new facilities may be constructed at currently unknown locations to accommodate food waste processing.
- The proposed regulation would result in an increase in the quantity of edible food that is directed to food recovery services and food recovery organizations for distribution. This would result in changes to the hauling of edible food from retail grocers, distribution centers, and other generators to feeding agencies. Feeding agencies are generally located in the urban areas they serve. Recovery of edible food through distribution to food recovery services and organizations can result in fewer trips to haul food waste to more distant landfills for disposal. Because edible food recovery facilities banks tend to be located closer to commercial edible food generators than landfills, a net reduction in VMT could occur with implementation of the proposed regulation even though processing of edible food may also require additional trips that would otherwise not be included with landfill disposal routes.

- Finished products from organic waste recovery facilities would be hauled to different types of end uses. For example, a recent CalRecycle study indicated that finished compost is sold primarily to the agriculture market (approximately 65 percent), followed by the landscape and nursery markets (17 and 6 percent, respectively), and other end users including Caltrans, and municipal projects (CalRecycle 2019). Adding the transport of products from compost facilities and other organic waste recovery facilities after treatment and processing would increase VMT. Most of the agricultural land in California is located in the Central Valley; thus, transport of compost to these areas may necessitate substantial trip lengths depending on the location of the processing facility.
- Similarly, there could be an increase in VMT associated with the truck transport of biogas products (e.g., renewable natural gas) from AD facilities if the biogas is not processed and combusted on-site to produce electricity or injected into a gas pipeline; however, the number and capacity of such transport is unknown.

Overall, the proposed regulation 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 of 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 OPR's technical advisory, the VMT metric supports statutory goals related to the reduction of 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 proposed regulation. Thus, 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 proposed regulation 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;
- displacement of petroleum-based fuels with renewable natural gas procured at anerobic digestion facilities;
- 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; and

- decreased emissions of volatile organic compounds, oxides of nitrogen, and particulate matter through oxidation of organics during the process as compared to the anaerobic decomposition of organics at landfills.

See Section 3.3, “Air Quality,” and Section 3.8, “Greenhouse Gas Emissions and Climate Change,” for detailed discussion related to the effect of VMT on these resource areas.

In summary, the proposed regulation would likely result in an increase in VMT from new and/or additional transport routes associated with the delivery of byproducts of organic waste recovery facilities (e.g., finished compost, RNG, digestate) built in response to the proposed regulation. Additionally, there is uncertainty in predicting the location of new processing facilities and the locations where rescued food and finished compost and other byproducts of organic waste recovery facilities would be distributed. Thus, recognizing uncertainty in future predictions, to meet CEQA’s mandate of good-faith disclosure and to not risk understating potential future impacts in light of the uncertainties, this impact is classified as **potentially significant**.

Mitigation Measures

Vehicular travel associated with implementation of the proposed regulation is related to changes in the way that organic waste is processed. The distance required to accommodate new trips is related to the location of facilities that would receive and process the waste, as well as the location where processed compost, other byproducts of organic waste recovery facilities, and recovered food would be distributed. According to the SB 743 Technical Advisory, potential mitigation measure 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, are subject to local jurisdictions (PRC 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

As stated above under the pre-mitigation significance determination, 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 **potentially significant and unavoidable**.

3.14. Utilities and Service Systems

This section provides a program-level review of the types of utilities and service systems located within the State. The analysis describes the types of impacts that could occur through implementation of the reasonably foreseeable compliance responses associated with the proposed regulation.

No comments received on the notice of preparation were related to utilities and service systems.

3.14.1. Regulatory Setting

Federal Regulations

Safe Drinking Water Act

Passed in 1974 and amended in 1986 and 1996, the Safe Drinking Water Act gives the U.S. Environmental Protection Agency (EPA) the authority to set drinking water standards. Drinking water standards apply to public water systems, which provide water for human consumption through at least 15 service connections, or regularly serve at least 25 individuals. There are two categories of drinking water standards, the National Primary Drinking Water Regulations (NPDWR) and the National Secondary Drinking Water Regulations. The NPDWR are legally enforceable standards that apply to public water systems. NPDWR standards protect drinking water quality by limiting the levels of specific contaminants that can adversely affect public health and are known or anticipated to occur in water.

State Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act established the State Water Resources Control Board and divided the state into nine regions, each overseen by a regional water quality control board (RWQCB). Each RWQCB region is required to prepare and update a Basin Plan for their jurisdictional area. The RWQCBs also issue waste discharge requirements for discharges of privately- or publicly-treated domestic wastewater to locations other than surface water, such as groundwater basins.

The Water Conservation Act of 2009

These sections of the Water Code, enacted as Senate Bill (SB) X7-7—The Water Conservation Act of 2009, set water conservation targets and efficiency improvements for urban and agricultural water suppliers, Sections 10608.16 and Sections 10608.48, respectively. The legislation establishes a State-wide target to reduce urban per capita water use by 20 percent by 2020. Urban retail water suppliers are required, individually or on a regional basis, to develop an urban water use target by December 31, 2010, to meet their target by 2020, and to meet an interim target (half of their 2020 target) by 2015. Urban water suppliers cannot impose conservation requirements on process water (water used in production of a product) and are required to employ two critical efficient water management practices—water measurement and pricing. Urban retail

water suppliers must include in a water management plan, to be completed by July 2011, the baseline daily per capita water use, water use target, interim water use target, and compliance daily per capita water use.

State Water Resources Control Board and Regional Water Quality Control Boards

The State Water Resources Control Board (SWRCB) issues individual and general National Pollutant Discharge Elimination System (NPDES) permits for wastewater and stormwater through the authorization of EPA. Discharges that may impact surface or groundwater, and which are not regulated by an NPDES permit, are issued a waste discharge requirement (WDR) that serves as a permit under the authority of the California Water Code. The RWQCBs issue Land Disposal WDRs that permit certain solid and liquid waste discharges to land to ensure that wastes do not reach surface water or groundwater. Land Disposal WDRs contain requirements for liners, covers, monitoring, cleanup, and closure. The RWQCBs also permit certain point source discharges of waste to land that have the potential to affect surface or groundwater quality. This category of discharges, known as "Non-15" WDR, are the most diverse and include sewage sludge and biosolids, industrial wastewater from power plants, wastes from water supply treatment plants, treated wastewater for aquifer storage and recovery, treated groundwater from cleanup sites, and many others.

Integrated Waste Management Act of 1989

The Integrated Waste Management Act of 1989 (IWMA) was enacted by the California legislature to reduce dependence on landfills as the primary means of solid waste disposal, and to ensure an effective and coordinated approach to safe management of all solid waste generated within the State. The IWMA establishes a hierarchy of preferred waste management practices: (1) source reduction (waste prevention), to reduce the amount of waste generated at its source; (2) recycling (or reuse) and composting; (3) transformation; and (4) disposal by landfilling. The IWMA required disposal of waste by the local jurisdictions to be cut by 25 percent by 1995 and by 50 percent by 2000. Waste disposal levels from the year 1990 were used as the base, adjusted for population and economic conditions.

The IWMA also requires the preparation of a Countywide Integrated Waste Management Plan (CIWMP), including a Countywide Siting Element that must demonstrate a remaining landfill disposal capacity of at least 15 years to serve all the jurisdictions in the county. The Countywide Siting Element includes a combination of strategies to demonstrate adequate capacity, including existing, proposed, and tentative landfills or expansions; increased disposal reduction efforts; and the export of solid waste for disposal. As part of the CIWMP, the IWMA also requires that each jurisdiction (cities and the county) prepare a Source Reduction and Recycling Element, a Household Hazardous Waste Element, and a Non-Disposal Facility Element.

Title 14, California Code of Regulations

CalRecycle regulations pertaining to nonhazardous waste management in California include minimum standards for solid waste handling and disposal; regulatory

requirements for composting operations; standards for handling and disposal of asbestos containing waste; resource conservation programs; enforcement of solid waste standards and administration of solid waste facility permits; permitting of waste tire facilities and waste tire hauler registration; special waste standards; used oil recycling program; electronic waste recovery and recycling; planning guidelines and procedures for preparing, revising, and amending countywide IWMP; and solid waste cleanup program.

Local

Given its statewide extent and the possible number of local and regional responsible agencies, this EIR does not identify potentially applicable local government plans, policies, and ordinances. Types of local regulations relevant to utilities and service systems may include general plan policies and ordinances protective of these resources. This EIR assumes that the reasonably foreseeable compliance responses associated with implementation of SB 1383 would be consistent with local plans, policies, and ordinances to the extent that anticipated organic waste recovery infrastructure projects are subject to them.

3.14.2. Environmental Setting

Water Supply and Distribution

The principal water supply facilities in California are operated by U.S. Bureau of Reclamation (USBR) and the California Department of Water Resources (DWR). In California, the Mid-Pacific Region of USBR is responsible for the management of the Central Valley Project (CVP). The CVP serves farms, homes, and industry in California's Central Valley as well as the major urban centers in the San Francisco Bay Area.

The State Water Project (SWP) is implemented by DWR. The SWP is a water storage and delivery system of reservoirs, aqueducts, power plants, and pumping plants. Its main purpose is to store water and distribute it to contractors in Northern California, the San Francisco Bay Area, the San Joaquin Valley, the Central Coast, and Southern California.

Local water districts, irrigation districts, special districts, and jurisdictions (e.g., cities and counties) manage and regulate the availability of water supplies and the treatment and delivery of water to individual projects. Depending on their location and the source of their supplies, these agencies may use groundwater, surface water through specific water entitlements, or surface water delivered through the CVP or SWP. In some remote areas not served by a water supply agency, individual developments may need to rely upon the underlying groundwater basin for their water supply. In these cases, the project would be required to secure a permit from the local or State land use authority and seek approval for development of the groundwater well(s).

Wastewater Collection and Treatment

Wastewater discharges to surface waters and groundwater via land discharge is regulated by SWRCB. The SWRCB and nine RWQCBs are responsible for development and enforcement of water quality objectives and implementation plans that protect the beneficial uses of the federal and State waters. The SWRCB also administers water rights in California. The RWQCBs are responsible for issuing permits or other discharge requirements to individual wastewater dischargers and for ensuring that they are meeting the requirements of the permit through monitoring and other controls.

Wastewater collection, treatment, and discharge service for developed and metropolitan areas is typically provided by local wastewater service districts or agencies that may or may not be operated by the local jurisdiction (e.g., city or county). These agencies are required to secure treatment and discharge permits for the operation of a wastewater facility from the RWQCB. Wastewater is typically collected from a specific development and conveyed through a series of large pipelines to the treatment facility where it is treated to permitted levels and discharged to surface waters or the land.

In areas that are remote or that are not served by an individual wastewater service provider, developments would be required to install an individual septic tank or other on-site wastewater treatment system. These facilities would need to be approved by the local or State land use authority and the RWQCB.

Electricity and Natural Gas

The California Public Utility Commission (CPUC) regulates investor-owned electric and natural gas companies located within California. The CPUC's Energy Division develops and administers energy policy and programs and monitors compliance with the adopted regulations.

Locally, energy service is provided by a public or private utility. New development projects would need to coordinate with the local service provider to ensure adequate capacity is available to serve the development.

Solid Waste Collection and Disposal

Statewide, CalRecycle, is responsible for the regulation of the disposal and recycling of all solid waste generated in California. CalRecycle acts as an enforcement agency in the approval and regulation of solid waste disposal and recycling facilities. Local agencies can create Local Enforcement Agencies (LEAs) and, once approved by CalRecycle, they can serve as the enforcement agency for landfills and recycling facilities with their jurisdictions.

Local agencies or private companies own and operate landfill facilities and solid waste is typically hauled to these facilities by private or public haulers. Individual projects would need to coordinate with the local service provider and landfill to determine if adequate capacity exists to serve the project.

3.14.3. Environmental Impacts and Mitigation Measures

Analysis 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.

Thresholds of Significance

An impact on utilities and service systems would be significant if implementation of the proposed regulation would:

- require or result in the relocation or construction of new or expanded water, or 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;
- negatively impact the provision of solid waste services or impair the attainment of solid waste reduction goals; and/or
- comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Issues Not Discussed Further

The proposed regulation would reduce solid waste disposal in the state by increasing organic waste recovery. Small amounts of solid waste generated by employees at facilities constructed to comply with the proposed regulation would be disposed as typical domestic waste, consistent with all federal, state and local statutes and regulations related to solid waste. The proposed regulation supports state and local activities required to comply with programs, including the Short-Lived Climate Pollutant Reduction Strategy and local Climate Action Plans, which aim to reduce organic waste disposal. There would be no adverse impacts related to solid waste, thus this topic is not discussed further.

Environmental Impacts and Mitigation Measures

Impact 3.14-1: Increased Demand for Water Supplies

The reasonably foreseeable compliance responses associated with SB 1383 include construction of new and expanded organic waste recovery facilities, including composting, anaerobic digestion, and chip and grind facilities, among others. New water supplies may be necessary for the processing of materials, such as during the anaerobic digestion process or to retain moisture in compost piles, for domestic use, and fire suppression. New water supplies would be obtained through local water service providers, during project planning, to ensure that adequate supply is available to meet the required demand under all water year conditions. Thus, because sufficiency of water supply and adequacy would need to be demonstrated prior to ground-breaking activities, this impact would be **less than significant**.

Reasonably foreseeable compliance responses that could result from implementation of the proposed regulation could include construction of new or expanded organic waste recovery facilities (such as composting, anaerobic digestion, and chip and grind facilities, among others) and related infrastructure at: existing waste management sites (e.g., landfills, compost facilities, MRFs); existing wastewater treatment plants (WWTPs); near dairies (for manure composting only); or new standalone sites in areas zoned for industrial or solid waste-handling facilities. The proposed regulation could also include development of community-scale compost facilities and edible food recovery facilities in urban areas. Edible food recovery infrastructure could include the development of new, or reuse of existing, buildings or warehouses to support the collection, storage, preparation and distribution of edible food, via vehicle transport.

New water supplies may be necessary for the processing of organic waste (such as tank cleaning at AD facilities or retaining moisture in compost files), for domestic use (employee restrooms), and fire suppression. Organic waste recovery facilities are not particularly water-intensive uses, at least relative to many other industrial uses. Some of the facilities, such as composting facilities, could also use recycled water as their primary water source. Water supply would come from connections to existing municipal water supply systems, onsite wells, or onsite water storage tanks. The water supply infrastructure would be constructed to the standards of the applicable local jurisdiction. As part of the permit approval process for individual organic waste recovery facilities, the project proponent for a proposed facility would need to coordinate with the local water service provider and obtain a will serve letter (or equivalent) that demonstrates that adequate supply is available to meet the required demand under all water year conditions (e.g., drought).

Because the specific location of new or expanded facilities associated with the proposed regulation is unknown, the extent to which additional demand on individual water supply systems cannot be determined at this program-level of review. However, the planning of facility sites would consider sufficiency of water supply and adequacy would need to be demonstrated prior to ground-breaking activities, and therefore the impact on water supply would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.14-2: Increased Demand for Wastewater Treatment

The reasonably foreseeable compliance responses associated with SB 1383 include construction of new facilities, including composting, anaerobic digestion, and chip and grind facilities, among others. Wastewater demands would be associated with employee use and production of digestate at anaerobic digestion facilities. As part of the project approval process, the project proponent would need to receive assurance that wastewater treatment capacity is available to meet project demands or obtain necessary permits for alternate disposal methods from the appropriate federal or State agency. Thus, because sufficient availability of wastewater resources would be determined before the start of construction activities, impacts would be **less than significant.**

Reasonably foreseeable compliance responses that could result from implementation of the proposed regulation could include: operation of new or expanded organic waste recovery facilities (such as composting, anaerobic digestion, and chip and grind facilities, among others) at: existing waste management sites (e.g., landfills, compost facilities, MRFs); existing WWTPs; near dairies (for manure composting only); or new standalone sites in areas zoned for industrial or solid waste handling facilities. The proposed regulation would also involve operation of biogas facilities and local community-scale compost and edible food recovery facilities. Wastewater demands would associated with employee use at new and expanded facilities would be met through on-site septic systems or through municipal services.

In addition, the digestate (liquid and solid waste) produced from the anaerobic digestion facilities would need to be managed. Depending on the feedstocks and process used, the digestate may require additional treatment. A facility operator may choose to send digestate to a wastewater treatment plant, which would require coordination with the wastewater treatment provider. Other options for digestate management including land application to agricultural crops or use as a soil amendment.

The wastewater infrastructure would be constructed to the standards of the applicable local jurisdiction. As part of the permit approval process for individual organic waste recovery facilities, the project proponent for a proposed facility would need to coordinate with the applicable local wastewater service provider and obtain a will serve letter (or equivalent) that demonstrates that adequate treatment capacity is available. If a municipal service is not needed, the project proponent would need to seek regulatory approvals, such as WDRs, consistent with federal and State requirements.

Because the specific location of new or expanded facilities associated with the proposed regulation is unknown, the extent to which additional demand on individual wastewater treatment systems cannot be determined at this program-level of review. However, the planning of facility sites would consider the need for wastewater treatment and available capacity or other permitting requirements would be met prior to the start of construction activities. Thus, impacts associated with sufficient availability of wastewater resources would be **less than significant**.

Mitigation Measures

No mitigation is needed for this impact.

Impact 3.14-3: Expansion of Existing or Construction of New Water, Wastewater Treatment, Stormwater Drainage, Electric Power, Natural Gas, or Telecommunications Facilities

The development of new or expansion of existing facilities related to implementation of SB 1383 could result in the need for expanded infrastructure related to water, wastewater treatment, stormwater drainage, electric power, natural gas, and/or telecommunications facilities. It is reasonable to assume that new facilities would be placed in areas where utility infrastructure is available, such as adjacent to other developed uses and industrial areas. Thus, because utility connections would be expected to be readily available and substantial construction activities would be minimal and entail making minor connections to existing infrastructure, this impact would be **less than significant**.

Reasonably foreseeable compliance responses that could result from implementation of the proposed regulation could include operation of new or expanded organic waste recovery facilities. The proposed regulation would also involve operation of biogas facilities and local community-scale compost and edible food recovery facilities. Operation of facilities would include provisions for water, wastewater treatment, stormwater drainage, electric power, natural gas, and/or telecommunication infrastructure to support employees and equipment needs. If adequate infrastructure is not available at an individual site, the development of new or expansion of existing utility systems would be necessary. New or modified utility installation, connections, and expansion would be subject to the requirements of the applicable utility providers.

In addition, energy supplies generated by digesters (natural gas and electricity) would require connection to the local distribution grids and may require safety equipment and engineering upgrades to local distribution systems. The export or injection of digester-derived biogas into natural gas pipeline systems would require interconnection infrastructure with local utility-owned pipeline systems and may require biogas upgrading to meet the constituency standards and heating values of their pipeline systems.

It is reasonable to assume that new facilities would be placed in areas where utility infrastructure is available, such as adjacent to other developed uses and industrial areas. Connections to existing utility systems would be expected to occur within existing roadways or would consist of minimal activities, such as minor connections to pipelines or overhead wires. Thus, because utility connections would be expected to be readily available and substantial construction activities would be minimal and entail making small connections to existing infrastructure, this impact would be **less than significant.**

Mitigation Measures

No mitigation measures are required for this impact.

3.15. Wildfire

This section evaluates the effects of the proposed regulation on wildfire risk and exposure. The following analysis considers drivers of wildfire risk and the features of the proposed regulation that could add to such risks or expose people or structures to it. This section also provides background and context on wildfire concepts, including wildfire behavior and wildfire management practices, and provides the regulatory backdrop against which the proposed regulation would be implemented.

No comments received on the notice of preparation were related to wildfire.

3.15.1. Regulatory Setting

Federal

No federal plans, policies, regulations, or laws related to wildfire are applicable to the proposed regulation.

State

CAL FIRE

The California Department of Forestry and Fire Protection (CAL FIRE) is dedicated to fire protection within more than 31 million acres of the State Responsibility Area (SRA). It also 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 SRA lands; nonfederal forest-covered, brush-covered, or 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 Sections 4113 and 4125 give CAL FIRE the responsibility for preventing and extinguishing wildland fires within the SRA. The PRC, beginning at 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.

Board of Forestry and Fire Protection

The Board of Forestry and Fire Protection (Board) is a governor-appointed body within 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 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 noncommercial 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.

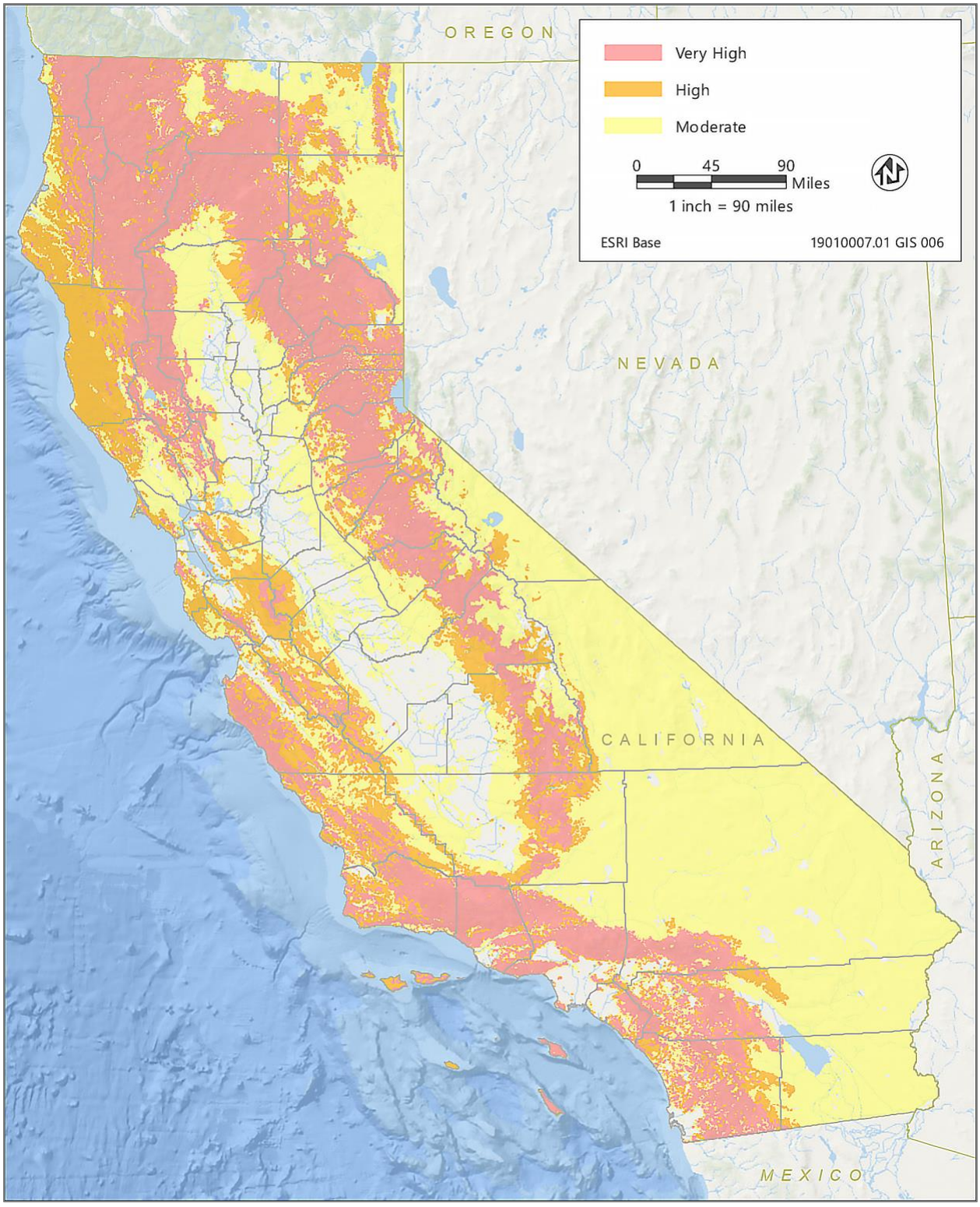
The Board is also responsible for identifying very high fire hazard severity zones (VHFHSZs) in the SRA and within local responsibility areas. Local agencies are required to designate, by ordinance, VHFHSZs and to require landowners to reduce fire hazards adjacent to occupied buildings within these zones (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). Fire hazard severity zones throughout the SRA are depicted in Figure 3.15-1.

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 2018 Strategic Fire Plan for California (see discussion below) 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, which may include areas where projects under the proposed regulation could be developed.

2018 Strategic Fire Plan for California

The 2018 Strategic Fire Plan for California lays out central goals for reducing and preventing the impacts of fire in the state. The goals are meant to establish, through local, State, federal, and private partnerships, a natural environment that is more resilient and human-made assets that are more resistant to the occurrence and effects of wildland fire. The 2018 Strategic Fire Plan has the following goals:

- Improve the availability and use of consistent, shared information on hazard and risk assessment.
- Promote the role of local planning processes, including general plans, new development, and existing developments, and recognize individual landowner/homeowner responsibilities.
- Foster a shared vision among communities and the multiple fire protection jurisdictions, including county-based plans and community-based plans such as Community Wildfire Protection Plans.
- Increase awareness and actions to improve fire resistance of man-made assets at risk and fire resilience of wildland environments through natural resource management.
- Integrate implementation of fire and vegetative fuels management practices consistent with the priorities of landowners or managers.
- Determine and seek the needed level of resources for fire prevention, natural resource management, fire suppression, and related services.
- Implement needed assessments and actions for postfire protection and recovery.



Source: Data downloaded from CAL FIRE in 2018

Figure 3.15-1 California Fire Hazard Severity Zones

Executive Order B-52-18

On May 10, 2018, in response to changing environmental conditions and the increased risks of wildfire, California Governor Brown issued Executive Order B-52-18 to support the state's resilience to wildfire and other climate impacts. The order centers on actions to improve forest and forest fire management in the state, including actions that address extensive tree mortality, increase forests' capacity for carbon capture, and improve overall forest health and resiliency.

Senate Bill 901

Signed into law on September 21, 2018, SB 901 (Dodd, Chapter 626, Statutes of 2018) addresses several issues related to California wildfires and public utilities. The bill contains provisions for cost recovery for electric utilities in the event of a wildfire, enhances portions of the Forest Practice Act to better mitigate the risk of wildfire, provides funding for CAL FIRE fire prevention activities, and expands the requirements of electric utilities' existing wildfire mitigation efforts. Such requirements include wildfire mitigation plans, collaboration with CAL FIRE, and identification and use of a list of independent evaluators that can assess the safety of electrical infrastructure.

Wildfire Mitigation Plans

Under SB 901, utilities must prepare and submit wildfire mitigation plans that describe plans to prevent, combat, and respond to wildfires affecting their service territories. While many utilities have been required to develop wildfire mitigation plans since 2017, SB 901 updated plan requirements by providing greater specificity as to the information included in such plans. The California Public Utilities Commission (CPUC) is tasked with reviewing the plans and modifying them when necessary. After the plans are approved, CPUC adopts them and has authority to pursue enforcement actions for noncompliance.

Emergency Response and Evacuation Plans

The State of California Emergency Plan was adopted on October 1, 2017, and describes how the State government mobilizes and responds to emergencies and disasters in coordination with partners in all levels of government, the private sector, nonprofit organizations, 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 2017).

California Fire Code

Chapter 28 of the California Fire Code sets provisions to prevent fires or explosions; facilitate fire control; and reduce exposures at facilities containing wood and forest products, biomass feedstock, and raw products associated with agro-industrial facilities. Chapter 28 also identifies requirements for active and passive fire protection at such facilities. Chapter 53 of the California Fire Code regulates the storage, use, and handling of compressed gases, including biogas.

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 protective of these resources. This EIR assumes that the reasonably foreseeable compliance responses associated with implementation of SB 1383 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 six counties for fire protection services including wages of suppression crews, lookouts, maintenance of firefighting facilities, fire prevention assistants, prefire 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.

3.15.2. 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 throughout the state is identified in Figure 3.15-1.

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 below), are rapidly changing in California and elsewhere—changes that are producing a fire regime that is increasingly susceptible to fire danger and gradually becoming 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. Annually, since 2000, the average annual acres burned in California has more than doubled the annual average during the 1960s (Board and CAL FIRE 2018). 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, below, 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 of wildfires (Syphard et al. 2007). In California in 2016, more than half of all fires were caused by humans; when miscellaneous and undetermined causes are included in that statistic, it increases to 98 percent (CAL FIRE 2016:35).

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 a more frequent rate 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 proposed regulation. In 2016, the most recent year for which data are available, electrical power and equipment use together accounted for 18 percent of fires in SRAs, or 585 of 3,233 total fires (CAL FIRE 2016).

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. All wildfires (those initiated by both natural and human-made sources) 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—driving an earlier spring snowmelt—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, the 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 3.15-1).

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 1.6 million acres in 2018 (CAL FIRE 2018a, 2018b). In four of the last 12 years (2007, 2008, 2017, and 2018), total burned acreage in California has exceeded 1.0 million acres (CAL FIRE 2018a, 2018b, 2018c). In 2018, there were over 7,500 wildfires in the state during the calendar year (CAL FIRE 2018b).

Table 3.15-1 Largest California Wildfires

Fire Name (cause)	Acres	Date	County
Mendocino Complex (under investigation)	459,123	July 2018	Colusa, Lake, Mendocino, and Glenn
Thomas (powerlines)	281,893	December 2017	Ventura and Santa Barbara
Cedar (human related)	273,246	October 2003	San Diego
Rush (lightning)	271,911 in California, 43,666 in Nevada	August 2012	Lassen
Rim (human related)	257,314	August 2013	Tuolumne
Zaca (human related)	240,207	July 2007	Santa Barbara
Carr (human related)	229,651	July 2018	Shasta and Trinity
Matilija (undetermined)	220,000	September 1932	Ventura
Witch (powerlines)	197,990	October 2007	San Diego
Klamath Theater Complex (lightning)	192,038	June 2008	Siskiyou

Source: CAL FIRE 2019

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* (OPR 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 (OPR 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.

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: well-designed fuel breaks and safe areas
- Defensible space: proper management of vegetation surrounding the home
- Access: good access helps emergency responders arrive in a timely manner
- Evacuation: prepared communities can evacuate safely and effectively
- Built environment: appropriate home construction and maintenance resists 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. 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 for homeowners per PRC Section 4291, to help individual homeowners implement defensible space, as well as implement home hardening techniques.

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 very high fire hazard zones, 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 (OPR 2015). The Governor's Office of Planning and Research 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 2015). 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.

3.15.3. Environmental Impacts and Mitigation Measures

Analysis Methodology

The impact analysis evaluates the effects of the proposed regulation on emergency planning and evacuation in the event of a wildfire, and congruency with existing emergency plans and policies, by comparing likely implementation response against existing wildfire emergency response in likely development areas. It also considers the

potential for organic waste recovery facilities and infrastructure developed under the proposed regulation to result in increased wildfire risk in terms of frequency, intensity, and size of fires, as well as the risk of exposure of people and structures, and considers features of infrastructure development that may increase the likelihood of fire, and weighs this against regulation that may lower that risk. It also considers the risk of postfire natural disasters, such as flooding and landslides, in a similar manner.

Thresholds of Significance

A wildfire impact would be significant if implementation of the proposed regulation 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 on the environment; or
- expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, postfire 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 organic waste recovery facilities developed under the proposed regulation and associated ancillary infrastructure, including electrical transmission facilities, fuel pipelines and storage facilities, and local access roads. 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”).

Impact 3.15-1: Impaired Wildfire Emergency Response Plan or Evacuation Plan

The proposed regulation would result in the development of organic waste recovery facilities either at or near existing waste management facilities or wastewater treatment plants, or in areas zoned for industrial or other appropriate use. In the event of a wildfire, such facilities would be addressed by the appropriate response agency and by 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; therefore, they would not negatively affect emergency response or evacuation route capacity. Therefore, this impact would be **less than significant**.

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 Local Responsibility Areas 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 proposed regulation does not involve actions that would alter existing fire response or evacuation plans. 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. Facilities would 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. Projects implemented under the proposed regulation would not create growth substantial enough to impede emergency response or affect evacuation route capacity. Consequently, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.15-2: Substantially Worsened Wildfire Risk Related to Infrastructure Development

The proposed regulation would involve development of organic waste recovery facilities and associated infrastructure. Such infrastructure developments, including the facilities themselves, could increase the risk of wildfire ignitions. For example, electrical malfunctions could ignite proximal vegetation, thereby starting a wildland fire. However, development standards, safety inspections, and regulatory oversight have become increasingly stringent in recent years. These factors substantially reduce the risk of wildfire ignitions caused by infrastructure, especially electrical infrastructure. Compost and mulch operations can pose a unique fire risk related to the spontaneous combustion of material. 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 reduce these risks. Additionally, developments associated with the proposed regulation would occur only in areas already zoned for development and where development already exists and therefore would not introduce ignition sources in new areas. Consequently, this impact would be **less than significant**.

The proposed regulation would require broad actions to reduce methane emissions from landfills, including organic waste disposal reductions, edible food recovery, implementation of food recovery programs, and identification of markets for the byproducts generated from activities associated with the proposed regulation. Specific steps associated with these actions would involve development of facilities to manage organic waste, including compost facilities, AD facilities, chipping and grinding facilities, recycling facilities, and other facilities that recover organic waste.

Development of these facilities would require either expanding existing waste management sites or developing new sites in areas zoned for industrial or solid waste handling. Such developments may require expanding existing infrastructure or adding new infrastructure to accommodate these facilities. 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.

Most existing AD facilities accepting organic waste in California are standalone facilities. Although there is an opportunity for conversion of wastewater treatment plants to codigestion facilities, it is reasonable to assume, based on the existing dominance of standalone facilities, that many, if not most, of these new facilities would be new standalone facilities. Organic waste processed at AD facilities is converted into biogas, composed primarily of methane. This biogas would potentially be used for on- or off-site electricity generation or cleaned and compressed for use as a natural gas pipeline supplement or as a vehicle fuel. These systems would use a variety of industrial-type

equipment and infrastructure, which could include electricity generator sets, biogas storage tanks and compression and cleaning equipment, pipeline systems, transmission poles and wires, and vehicle-fueling stations. For new standalone facilities, additional infrastructure development could be substantial. The infrastructure required for AD facilities poses a risk of wildfire ignition from biogas storage and transmission infrastructure, equipment malfunction, or electrical combustion sources. Of all the types of facilities that could be developed under the proposed regulation, AD facilities represent the largest new electrical infrastructure demand and consequently likely pose the largest fire ignition risk from that perspective.

New or expanded transfer/processing operations or facilities for decontaminating organic material may be required to accommodate the increase in feedstock for organic materials processing facilities under the proposed regulation. These facilities may require a small amount of new electrical infrastructure for general operation and to power depackaging machines and other decontamination equipment, but such infrastructure development would be insubstantial in terms of overall wildfire ignition risk relative to existing infrastructure.

It is not likely that new chipping and grinding or recycling facilities would be implemented under the proposed regulation. The most likely scenario is one of increased capacity at existing facilities, which would not generate a substantial amount of new electrical support infrastructure that could contribute to wildfire risk. Land application of green material does not require the development of electrical infrastructure.

New aerated static pile and forced-air compost facilities would be constructed under the proposed regulation and would require power connections to operate. While the precise location of future compost facilities is unknown and would be subject to approval by local jurisdictions and the State, it is anticipated that these facilities would potentially be sited near or at existing waste disposal sites or landfills. Consequently, new electrical infrastructure demands would be limited.

Compost and mulch operations can pose a unique fire risk related to the spontaneous combustion of material. Fires at composting and mulching 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. Spontaneous combustion in a compost pile can occur as the result of a chain of reactions where the biological processes create temperatures high enough to sustain heat-releasing chemical reactions (Coker 2019).

Mismanaged compost piles may be prone to spontaneous combustion, which can occur between 200°F and 300°F for organic materials. Compost piles that are too tall, have reduced moisture content or limited air flow, or include a nonuniform 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.

In accordance with 14 CCR Section 17867(a)(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 proposed regulation, there are environmental consequences related to other wildfire risks, including wildfire intensity and size. Under the proposed regulation, chipping and grinding facilities would accommodate increased capacity for woody material, potentially including forest waste from fuels treatment projects implemented by the State or U.S. Forest Service. Products generated by chipping and grinding facilities feed biomass energy production, landfill cover, and landscaping and agricultural markets. Although chipping and grinding facilities would not directly reduce wildfire risk, the additional capacity would provide support for programs of forest health and wildfire risk reduction by creating a downstream receiving source. These programs would specifically and directly reduce fire intensity and size and would help protect high-value resources, such as people and structures, from the effects of wildfire. By contrast, there are places within the state where expanded or new facilities could be built that are in moderate to severe fire hazard rating areas where placement of the facility itself could result in exposure of both workers and structures to fire hazards. It is currently not known where individual facilities would be built or where new electrical support infrastructure would be required; however, the location of existing and planned (grant-funded) composting and AD facilities relative to State-designated fire hazard zones is shown in Figure 3.15-1. This figure does not represent the location of the anticipated 61 AD facilities and 108 compost facilities that are reasonably anticipated to be built in response to the proposed regulation. 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—namely, implementation of wildfire mitigation plans, collaboration between utilities and CAL FIRE, and retention by 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 for this impact.

Impact 3.15-3: Substantial Risks Related to Postfire Flooding or Landslides

Wildfire creates conditions that increase the risk of postfire flooding and mass wasting events. However, the proposed regulation would result in a limited number of new structures and personnel to staff them, which would limit possible exposure during such events. Additionally, new infrastructure, including facilities, 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**.

Moderate- to high-severity wildfire can greatly increase the likelihood of debris flows and other mass wasting events (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.

The proposed regulation does not include new housing, nor would it result in substantial unplanned population growth. 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. 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 for this impact.

4. Cumulative Impacts

4.1. Introduction

The State CEQA Guidelines define “cumulative impacts” as “two or more individual effects which, when considered together, are considerable, or which compound or increase other environmental impacts” (Section 15355). Section 15130 of the State CEQA Guidelines requires that an EIR evaluate potential environmental impacts that are individually limited but cumulatively considerable. These impacts can result from the proposed project alone or from a combination of the proposed project and other projects. The State CEQA Guidelines state: “The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects” (State CEQA Guidelines, Section 15355[b]). A significant cumulative impact occurs when the result of combined individual impacts compounds or increases other overall environmental impacts to lead to a significant adverse outcome (State CEQA Guidelines, Section 15355). In other words, cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. CEQA does not require an analysis of incremental effects that are not cumulatively considerable, nor is there a requirement to discuss impacts that do not result in part from the project evaluated in the EIR.

4.2. Approach to the 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.

4.3. Related Projects

For purposes of disclosure and broad consideration of the project impacts that may result in cumulative effects in combination with the environmental impacts of the proposed regulation, CalRecycle has identified relevant projects that would result in related impacts. These relevant California statewide projects are listed as follows and described below:

- SLCP Reduction Strategy,
- Anaerobic Digestion Initiative (Strategic Directive 6.1),
- California Vegetation Treatment Program (CalVTP),
- Renewables Portfolio Standard (RPS),
- Low Carbon Fuel Standard (LCFS), and
- Healthy Soils Initiative.

4.3.1. Short-Lived Climate Pollutant Reduction Strategy

Under SB 605 (Lara, Chapter 523, Statutes of 2014), the development of the SLCP Reduction Strategy included coordination with local and State agencies, academic experts, businesses, organizations, and other stakeholders. Through mandatory and voluntary measures, incentives, and other policies and plans, the SLCP Reduction Strategy aims to identify a statewide strategy to encourage reductions in emissions of black carbon, methane, and hydrofluorocarbons (HFCs) in the state. The SB 1383 Regulations would help achieve the goals of the SLCP Reduction Strategy. The following summarizes measures identified in the SLCP Reduction Strategy to reduce black carbon, methane, and HFCs.

Black Carbon

Implementation of black carbon reduction measures includes increased installation of gas fireplaces and U.S. Environmental Protection Agency–certified devices. In addition, black carbon reduction measures would direct a series of research projects pertaining to forest management activities in the state. Research goals would seek to understand GHG emissions of forest management practices that reduce wildfire risk, the extent of achievable wildfire risk reduction, effects on the magnitude of black carbon emissions from future wildfires, and the net radiative forcing of the emissions.

Methane

Implementation of the methane reduction measures under the SLCP Reduction Strategy could include changes to manure management systems and practices at dairies (e.g., installing scrape manure systems or using equipment such as manure vacuums, digesters, storage silos and tanks, and facilities to support pasturing of cattle); the development of organic waste recovery facilities, such as compost or AD facilities that would convert organic wastes diverted from landfills (e.g., green material, food waste) into finished materials and/or biogas; development of new, or modification of existing, wastewater treatment plants to operate anaerobic digesters that would be

equipped for codigestion with solid wastes to produce biogas (which may include electricity generator sets, biogas storage tanks and compression and cleaning equipment, aboveground pipeline systems, transmission poles and wires, and vehicle fueling stations); and the collection and reduction of methane emissions from oil and gas facilities (which may include modifications to existing facilities, pipeline replacement or reconstruction activities, inspection and monitoring, and disposal of methane vapors).

Hydrofluorocarbons

The SLCP Reduction Strategy contains actions to reduce HFC emissions within the state. These strategies could require replacing high-global warming potential (GWP) HFCs used as refrigerants, foam expansion agents, aerosol propellants, and, to a lesser extent, solvents and fire suppressants with low-GWP compounds, such as ammonia, carbon dioxide (CO_2), hydrocarbons, lower-GWP HFCs, and hydrofluoro-olefins (HFOs). These replacements could require minor to moderate modifications to existing facilities. The low-GWP replacements considered in the SLCP Reduction Strategy are already being conducted on a large scale within the United States or internationally with the exception of HFOs. A reasonably foreseeable compliance response to implementation of the HFC reduction measures would be the construction of new HFO manufacturing facilities.

4.3.2. Anaerobic Digestion Initiative

Under Strategic Directive 6.1, CalRecycle seeks to reduce the amount of organic waste disposed of in the state's landfills by 2020 by 50 percent. In addition to helping conserve limited landfill capacity, this CalRecycle policy recognizes that organic wastes are a resource, not just solid wastes that must be disposed of. Organic wastes have an energy value that can be captured and used and are also a necessary component of compost, soil amendments, and other useful byproducts. Strategic Directive 6.1 also encompasses one of CalRecycle's actions to help California substantially reduce its generation of GHGs. AD facilities use organic wastes as a feedstock from which they produce biogas (which is captured and contains a high percentage of methane). Typically, the methane gas produced by the anaerobic digestion process is converted to liquefied natural gas, compressed natural gas, or electricity (using internal combustion engines or fuel cells) for on-site energy needs and export to the energy grid. The development of AD facilities is one of CalRecycle's charges under the AB 32 Climate Change Scoping Plan and is one of the methane reduction measures included as part of the SLCP Reduction Strategy, discussed above. CalRecycle evaluated the environmental impacts associated with implementation of Strategic Directive 6.1 in the *Statewide Anaerobic Digester Facilities for the Treatment of Municipal Organic Solid Waste EIR*, prepared in 2011.

4.3.3. California Vegetation Treatment Program

The CalVTP is a proposed statewide program of the California Board of Forestry and Fire Protection that would reduce fire fuel. The California Department of Forestry and Fire Protection (CAL FIRE) would have the primary responsibility to implement CalVTP. The intent of this program is to reduce wildfire risk in order to diminish or avoid the harmful effects of wildfire on people, property, and natural resources. Full

implementation of the program is anticipated to occur in 2024. The program would expand upon some vegetation treatment occurring under CAL FIRE's existing Vegetation Management Program and introduce new treatment methods and a broader range of treatment areas. Vegetation treatment activities proposed include manual and mechanical treatments in the wildland-urban interface area that could potentially result in increased generation of woody biomass. The disposition of woody biomass from CalVTP is anticipated to occur in proportions similar to those of the current treatment program, with 70 percent of the material processed (chipped) and redistributed within the project area, 25 percent pile burned, and 5 percent sent to biomass facilities. Under current practices, CAL FIRE does not dispose of waste in landfills, and this practice is not anticipated to change with CalVTP. Interactions between CalVTP and the SB 1383 Regulations could occur because the programs have similar timeframes and will create organic waste feedstock materials capable of being processed at biomass energy generation, through composting, and at other organic waste recovery facilities.

4.3.4. Senate Bill 100: California Renewables Portfolio Standard Program

The RPS is a statewide regulatory program requiring retail electricity producers to procure a percentage of power from renewable energy sources by specific target years. SB 100 (DeLeón, Chapter 312, Statutes of 2018) accelerated targets set by previously enacted RPS-related legislation to require that all California retail electricity producers supply 44 percent of retail sales from renewable resources by December 31, 2024, 50 percent by December 31, 2026, 52 percent by December 31, 2027, and 60 percent by December 31, 2030. The law requires that eligible renewable energy resources and zero-carbon resources supply 100 percent of retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045. Under the State's RPS guidelines, power plants that produce electricity using biomethane derived from anaerobic digestion may qualify for RPS eligibility. The biomethane can be produced on- or off-site and must be delivered through a dedicated or common carrier pipeline to the facility where electricity is produced (California Energy Commission 2017). The SB 1383 Regulations support achievement of RPS targets by including provisions for procurement of renewable gas (in the form of transportation fuel, electricity, heating applications, or pipeline injection) and electricity from biomass conversion.

4.3.5. Low Carbon Fuel Standard

In January 2007, Executive Order S-01-07 established an LCFS in California. The executive order called for a statewide goal to be established in order to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 and called for an LCFS for transportation fuels to be established for California. The LCFS, which went into effect on January 1, 2016, applies to all refiners, blenders, producers, and importers ("providers") of transportation fuels in California, including fuels used by off-road construction equipment. The LCFS is measured on the total fuel cycle and may be met through market-based methods. For example, providers exceeding the performance required by an LCFS receive credits that may be applied to future obligations or traded to providers not meeting the LCFS. The standards require providers of transportation fuels to report on the mix of fuels they provide and

demonstrate they meet the LCFS intensity standards annually. This is accomplished by ensuring that the number of "credits" earned by providing fuels with a lower carbon intensity than the established baseline (or obtained from another party) is equal to or greater than the "deficits" earned from selling higher-intensity fuels. Biogases that are refined and used directly or as an additive to other fuels can be eligible for credits under the LCFS program. Fuels produced through anaerobic digestion include a range of different types that vary by the organic waste feedstocks available, and credits are assigned based upon the carbon intensity of the fuels. The SB 1383 Regulations support achievement of LCFS goals by including provisions for procurement of renewable gas as a transportation fuel.

4.3.6. 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. 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, a collaboration of State agencies and departments to promote the development of healthy soils on California's farmlands and ranchlands.

The HSP has two 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 GHG emissions. The HSP Demonstration Projects showcase California farmers and rancher's implementation of HSP practices. The SB 1383 Regulations support the California Healthy Soils Initiative by facilitating the development of organic waste recovery facilities that produce byproducts (such as finished compost) that would be used to improve the health of the state's soils. Healthy soils reduce GHG emissions (a primary objective of SB 1383); improve crop yields, drought and flood tolerance, and air and water quality; and reduce water demand.

4.4. Cumulative Effects of the Proposed Regulation

The following analysis examines the cumulative effects of the proposed regulation. The potential cumulative effects of the proposed regulation are summarized qualitatively below for each of the topics analyzed in Chapters 3 of this Draft EIR.

4.4.1. Aesthetics

Implementation of the statewide programs listed above 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. 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 resources present in those areas.

The aesthetic resources that could be affected by construction and operation of the new facilities would depend on the specific location of the facilities and the environmental setting of those sites. Harmful impacts 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, and result in substantial new sources of light and glare, and facilities located in agricultural or undeveloped areas not previously developed for other solid waste, agricultural, or wastewater treatment facilities could degrade the visual character or quality of public views of the site.

Implementation of reasonably foreseeable compliance responses associated with the proposed regulation (SB 1383) could also require construction and operational activities associated with new or modified facilities or infrastructure. There is uncertainty as to the specific location of these new facilities and the extent that existing facilities would be modified. Construction and operation of these facilities might also 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 site. Furthermore, implementation of reasonably foreseeable compliance responses 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.

Applicable mitigation measures are described in detail in Section 3.1, “Aesthetics”:

- Mitigation Measure 3.1-1: Implement Aesthetic Resource Protection Measures during Construction of New or Modified Facilities in Response to the Proposed Regulation
- Mitigation Measure 3.1-2: Implement Aesthetic Resource Protection Measures during Operation of New or Modified Facilities in Response to the Proposed Regulation
- Mitigation Measure 3.1-4: Implement Light and Glare Reduction Measures during Operation of New or Modified Facilities in Response to the Proposed Regulation

To the extent that an individual project adopts and implements all feasible mitigation measures listed above, the impact would be less than significant with mitigation. However, adoption and implementation of these mitigation measures are subject to local land use and/or permitting agencies for individual projects. Therefore, although it is

reasonably anticipated that cumulative aesthetic impacts would be less than significant as a result of siting factors and local government land use approvals, CalRecycle does not have the authority to enforce provisions on local governments. Thus, the proposed regulation **could result in a considerable contribution to a significant cumulative impact on aesthetic resources**.

4.4.2. Agricultural and Forestry Resources

Implementation of the statewide programs listed above 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. 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 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.

The agricultural and forestry resources that could be affected by construction and operation of the new facilities would depend on the specific location of the facilities and the environmental setting of those sites. Harmful impacts could include conversion of Farmland to nonagricultural uses; conversion of forestland or timberland to nonforest uses; and activities that could adversely affect the viability of surrounding agricultural or forest uses, resulting in the indirect conversion of those lands.

Implementation of reasonably foreseeable compliance responses associated with the proposed regulation (SB 1383) could also require construction and operational activities associated with new or modified facilities or infrastructure. There is uncertainty as to the specific location of these new facilities and the extent that existing facilities would be modified. Construction might result in disturbance of lands containing agricultural and forestry uses through such activities 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.

Applicable mitigation measures are described in detail in Section 3.2, “Agricultural and Forestry Resources”:

- Mitigation Measure 3.2-1: Implement Agricultural Resource Protection Measures during Construction and Operation of New or Modified Facilities Built in Response to the Proposed Regulation
- Mitigation Measure 3.2-2: Implement Forest Resource Protection Measures during Construction and Operation of New or Modified Facilities Built in Response to the Proposed Regulation

- Mitigation Measure 3.2-3: Implement Agricultural and Forestry Resource Protection Measures during Construction and Operation of New or Modified Facilities Built in Response to the Proposed Regulation

To the extent that an individual project adopts and implements all feasible mitigation measures listed above, the impact would be less than significant with mitigation. However, adoption and implementation of these mitigation measures are subject to local land use and/or permitting agencies for individual projects. Therefore, although it is reasonably anticipated that cumulative agricultural and forestry impacts would be less than significant as a result of siting factors and local government land use approvals, CalRecycle does not have the authority to enforce provisions on local governments. Thus, the proposed regulation **could result in a considerable contribution to a significant cumulative impact on agricultural and forestry resources**.

4.4.3. Air Quality

Implementation of the statewide programs listed above 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. 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 reasonably foreseeable compliance responses associated with the proposed regulation (SB 1383) could also require construction activities that may result in emissions of criteria air pollutants and toxic air contaminants (TACs), as well as generate unpleasant odors that could affect sensitive receptors. These emissions would be temporary and occur intermittently depending on the intensity of construction on a given day. Although detailed construction information is not available at this time, based on the types of activities that could be conducted, it would be expected that the primary sources of construction-related emissions include soil disturbance– and equipment-related activities (e.g., use of backhoes, bulldozers, excavators, and other related equipment). Construction activities could result in nitrogen oxide (NO_x) emissions and emissions of particulate matter with an aerodynamic diameter of 10 micrometers or less (PM_{10}) and particulate matter with an aerodynamic diameter of 2.5 micrometers or less ($PM_{2.5}$), which may exceed general mass emissions limits of a local or regional air quality management district depending on the location of the emissions.

In addition, there is uncertainty related to operational emissions associated with organic waste recovery facilities, including AD and composting facilities, built in response to the proposed regulation. Although reductions of reactive organic gas, NO_X, PM_{10}, and $PM_{2.5}$ emissions would be associated with the diversion of organic waste from landfills to organic waste recovery facilities, flaring, increased VMT, and other operation-related emissions could result in significant operational criteria air pollutant emissions. Operation of new and expanded organic waste recovery facilities could also generate objectional odors.

Applicable mitigation measures are described in detail in Section 3.3, “Air Quality”:

- Mitigation Measure 3.3-1: Implement All Feasible On- and Off-Site Mitigation Measures to Reduce Construction-Generated Air Pollutants to Below a Lead Agency–Approved Threshold of Significance
- Mitigation Measure 3.3-2: Implement All Feasible On- and Off-Site Mitigation Measures to Reduce Operation-Related Air Pollutants to Below a Lead Agency–Approved Threshold of Significance
- Mitigation Measure 3.3-4: Conduct a Health Risk Assessment and Implement On-Site TAC-Reducing Mitigation Measures
- Mitigation Measure 3.3-5a: Comply with Appropriate Local Land Use Plans, Policies, and Regulations
- Mitigation Measure 3.3-5b: Prepare an Odor Impact Minimization Plan or Odor Management Plan

To the extent that an individual project adopts and implements all feasible mitigation measures listed above, the impact would be less than significant with mitigation. However, adoption and implementation of these mitigation measures are subject to local land use and/or permitting agencies for individual projects. Therefore, although it is reasonably anticipated that cumulative air quality impacts would be less than significant as a result of siting factors and local government land use approvals, CalRecycle does not have the authority to enforce provisions on local governments. Thus, the proposed regulation **could result in a considerable contribution to a significant cumulative impact on air quality**.

4.4.4. Archaeological, Historical, and Tribal Cultural Resources

Implementation of the statewide programs listed above 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. 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 cultural resources that could potentially 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.

Implementation of the proposed regulation could result in earth-moving activities that could affect cultural resources. There is uncertainty as to the specific location of these new organic waste recovery facilities and the extent that existing facilities would be modified. Construction activities could require disturbance of undeveloped area, 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 cultural resources that could potentially 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.

Applicable mitigation measures are described in detail in Section 3.4, “Archaeological, Historical, and Tribal Cultural Resources”:

- Mitigation Measure 3.4-1: Survey and Redesign or Avoid Significant Historical Resources
- Mitigation Measure 3.4-2: Avoid Potential Effects on Archaeological Resources

To the extent that an individual project adopts and implements all feasible mitigation measures listed above, the impact would be less than significant with mitigation. However, adoption and implementation of these mitigation measures are subject to local land use and/or permitting agencies for individual projects. Therefore, although it is reasonably anticipated that cumulative archaeological, historical, and tribal cultural resources impacts would be less than significant as a result of siting factors and local government land use approvals, CalRecycle does not have the authority to enforce provisions on local governments. Thus, the proposed regulation **could result in a considerable contribution to a significant cumulative impact on archaeological, historical, and tribal cultural resources**.

4.4.5. Biological Resources

Implementation of the statewide programs listed above 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 facilities to be located at or near existing landfills 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 facilities associated with the proposed regulation would not occupy substantial natural landscape. There is uncertainty as to the specific location of these new facilities and to the extent that the modification of existing facilities would be needed to achieve program directives. 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 that reside and sensitive habitats that are present in those areas.

The biological resources that could be affected by construction and operation of the new or expanded facilities would depend on the specific location of the facilities and the environmental setting of those sites. Harmful impacts could include modifications to existing habitat, including removal, degradation, and fragmentation of riparian systems,

wetlands, or other sensitive natural wildlife habitat and plan communities, and loss of special-status species.

Implementation of reasonably foreseeable compliance responses associated with the proposed regulation (SB 1383) could also require construction and operational activities associated with new or modified facilities or infrastructure. There is uncertainty as to the specific location of these new facilities and the extent that existing facilities would be modified. Construction might result in disturbance of undeveloped areas through such activities 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.

Applicable mitigation measures are described in detail in Section 3.5, “Biological Resources”:

- Mitigation Measure 3.5-1: Incorporate Avoidance and Minimization Measures Consistent with Resource Agency Regulatory Requirements
- Mitigation Measure 3.5-2: Avoid or Minimize Impacts, or Compensate for Unavoidable Loss of Sensitive Habitat

To the extent that an individual project adopts and implements all feasible mitigation measures listed above, the impact would be less than significant with mitigation. However, adoption and implementation of these mitigation measures are subject to local land use and/or permitting agencies for individual projects. Therefore, although it is reasonably anticipated that cumulative biological resources impacts would be less than significant as a result of siting factors and local government land use approvals, CalRecycle does not have the authority to enforce provisions on local governments. Thus, the proposed regulation **could result in a considerable contribution to a significant cumulative impact on biological resources**.

4.4.6. Energy

Implementation of the statewide programs under the proposed regulation 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. AD facilities would produce biogas that could be used for electricity generation, providing heat for industrial processes or refined into renewable natural gas with a higher methane content for use in vehicles and building appliances. The combustion of biogas and renewable natural gas in engines would result in some CO_2 emissions, which are classified as a GHG requiring reduction under the state’s Global Warming Solutions Act of 2006 (AB 32). However, methane in the atmosphere has a GWP 28 times that of CO_2 over a 100-year timeframe (IPCC 2018). Capturing methane from the decomposition of organic waste and using it as fuel, which would occur more often under the proposed regulation, would have the added effect of reducing the GWP of methane. The result would be an environmentally preferable pathway that is compatible with the state’s SLCP Reduction Strategy.

Biofuels generated at AD facilities could be used in lieu of fossil fuels, such as natural gas, diesel, and gasoline. These fossil fuel sources, which are commonly used for

powering vehicles, buildings, and electricity generation, require extraction and conveyance via wells and pipelines from in-state and out-of-state sources. Increasing the state's supply of biofuel may offset some demand for fossil fuels, which could in turn reduce the need for additional wells and pipelines. Biofuel production from AD facilities could also reduce the distances needed to transport fossil fuels. In contrast to oil and gas production, which occurs in limited geographic areas, AD facilities can be sited closer to organic waste feedstocks and locations where refined fuels would ultimately be marketed to businesses and consumers. When the life cycle of fuels is considered, biofuels typically have a lower well-to-wheel carbon intensity than comparable fossil fuels, which is consistent with the goals of the LCFS to reduce the carbon intensity of transportation fuels.

The expansion of organic waste recovery facilities that would occur in response to the proposed regulation would happen concurrently with increases in statewide supplies of woody biomass generated by the CalVTP. Woody biomass generated from CALFIRE vegetation treatment activities for wildfire fuels reduction are not disposed of in California landfills and therefore are not part of the year 2014 baseline of organic waste disposal upon which SB 1383 requires reductions. The composting facilities constructed in response to the proposed regulation would be designed to handle woody biomass from urban landscaping, which is included in the baseline. It is therefore foreseeable that some of the increased capacity for composting resulting from SB 1383 could additionally be used to process woody biomass generated from the CalVTP. The integration of these feedstocks would depend on the location of the composting facility. Energy implications of increased volumes of feedstock from additional sources would be analyzed in project-level environmental analyses.

AD facilities constructed in response to the proposed regulation would not be used to process woody biomass from either the CalVTP or the woody waste associated with urban landscaping, because these feedstocks contain a naturally occurring polymer called lignin that cannot be broken down into biofuels. If these materials are not used in composting, they could alternatively be used in biomass facilities that convert lignocellulosic material into biofuels using torrefaction, gasification, or pyrolysis. These processes can result in the production of biogas that would be used in a manner similar to that used for AD-produced biogas, which is combusted to produce renewable electricity meeting the goals of RPS requirements or further refined into transportation fuels to meet the state's LCFS. An additional byproduct of the production of biofuels from woody biomass using pyrolysis is a biochar product that can be applied to soils for crop enhancement and carbon sequestration, which would support the advancement of the state's Healthy Soils Initiative.

The diversion of organic waste and construction of facilities to process this material that would occur under the proposed regulation would be compatible with numerous statewide programs aimed at the sustainable management of energy resources; therefore, the proposed regulation **would not result in cumulatively considerable energy resources impacts**.

4.4.7. Geology and Soils

Implementation of the statewide programs listed above 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. 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. 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).

The applicable mitigation measure is described in detail in Section 3.7, "Geology and Soils":

- Mitigation Measure 3.7-6: Survey and Redesign or Avoid Significant Paleontological Resources

To the extent that an individual project adopts and implements all feasible mitigation measures listed above, the impact would be less than significant with mitigation. However, adoption and implementation of these mitigation measures are subject to local land use and/or permitting agencies for individual projects. Therefore, although it is reasonably anticipated that cumulative impacts related to paleontological resources would be less than significant due to survey, redesign, and avoidance measures, CalRecycle does not have the authority to enforce provisions on local governments. Thus, the proposed regulation **could result in a considerable contribution to a significant cumulative impact on geology and soil resources**.

4.4.8. Greenhouse Gas Emissions and Climate Change

Implementation of the statewide programs listed above 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.

Implementation of reasonably foreseeable compliance responses associated with the proposed regulation could require construction activities associated with new or modified facilities or infrastructure. 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 commute trips.

The applicable mitigation measure is described in detail in Section 3.8, "Greenhouse Gas Emissions and Climate Change":

- Mitigation Measure 3.8-2: Implement All Feasible On- and Off-Site Mitigation Measures to Reduce Greenhouse Gas Emissions to below a Lead Agency–Approved Threshold of Significance

As discussed for Impact 3.8-3, various aspects of the proposed regulation would affect GHG emissions. In summary, increases to GHG emissions could be related to VMT and increased energy demand for operations of new or expanded organic waste recovery facilities. However, the proposed regulation would decrease statewide GHG emissions in a variety of ways, including avoidance of landfill emissions of methane; use of renewable natural gas, which would displace petroleum-based fuel demand; improved soil health and carbon sequestration potential; and reductions in the use of petroleum-based fertilizer with compost produced through diverted food waste. Combustion of methane would generate emissions of CO_2; however, methane is a highly potent GHG with a much greater global warming potential than CO_2 (see additional discussion in Section 3.3, "Air Quality"). Conversion of methane to CO_2 equivalent would ultimately result in less of a contribution to global climate change compared to existing conditions. Thus, although GHG emissions would be emitted from increased VMT and operation of organic waste recovery facilities, overall emissions of GHGs would be reduced for the reasons stated above. Therefore, the proposed regulation **would not make a considerable contribution (i.e., would be beneficial) such that a significant cumulative GHG emissions and climate change impact would occur.**

4.4.9. Hazards and Hazardous Materials

Implementation of the statewide programs listed above 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. 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 substant 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 the new facilities would depend on the specific location of the facilities and the environmental setting of those sites.

Applicable mitigation measures are described in detail in Section 3.9, "Hazards and Hazardous Materials":

- Mitigation Measure 3.9-2: Identify and Avoid Known Hazardous Waste Sites during Construction of New or Modified Facilities Built in Response to the Proposed Regulation
- Mitigation Measure 3.9-5: Reduce Safety Hazards from Siting an Organic Waste–Handling Facility within 5 Miles of an Airport

- Mitigation Measure 3.9-6: Implement Measures during Construction Activities to Avoid Impairment of an Emergency Response Plan or Emergency Evacuation Plan

To the extent that an individual project adopts and implements all feasible mitigation measures listed above, the impact would be less than significant with mitigation. However, adoption and implementation of these mitigation measures are subject to local land use and/or permitting agencies for individual projects. Therefore, although it is reasonably anticipated that cumulative hazards and hazardous materials impacts would be less than significant as a result of siting factors and local government land use approvals, CalRecycle does not have the authority to enforce provisions on local governments. Thus, the proposed regulation **could result in a considerable contribution to a significant cumulative impact related to hazards and hazardous materials**.

4.4.10. Hydrology and Water Quality

The cumulative projects listed above would require the construction and operation of new facilities throughout the state in addition to increased processing of organic waste materials. Implementation of the proposed regulation would also stimulate the development of new organic waste recovery facilities and modification of existing facilities in various parts of the state. Construction and operation of facilities implemented through the cumulative projects and the proposed regulation would involve ground disturbance and could cause an increase in sediment, nutrients, and other contaminants in adjacent surface waters. Leachate or process water from organic waste management 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.

Existing regulations in California include strong water quality protections related to the siting, construction, and operation of facilities that may adversely affect water quality. These regulations are discussed in detail in Section 3.10, “Hydrology and Water Quality.” The cumulative projects and the reasonably foreseeable projects implemented in response to the proposed regulation would be required to comply with the water quality protections included in NPDES permits administered by SWRCB and regional water quality control boards. The rigorous water quality protections included in these permits, coupled with required monitoring and reporting, would control the risk of cumulative adverse water quality effects from construction and operation of new or expanded facilities. However, SWRCB has identified an enforcement gap related to inappropriate land application of difficult to process organic wastes (SWRCB 2018). It is reasonable to assume that the landfill diversion requirements of the proposed regulation would result in an increased occurrence of inappropriate land application of organic wastes that facilities find difficult to process.

Applicable mitigation measures are described in detail in Section 3.10, “Hydrology and Water Quality”:

- Mitigation Measure 3.10-3: Develop Land Application Enforcement Strategy

Although impacts to water quality management plans could be reduced through improved organic waste processing and enforcement of existing regulations, CalRecycle does not have the authority to implement these measures where there is no LEA permit. Therefore, although it is reasonably anticipated that cumulative water quality and hydrology impacts would be less than significant as a result of implementation of the feasible mitigation measures listed above, CalRecycle does not have the authority to enforce provisions on local governments. Thus, the proposed regulation **could result in a considerable contribution to a significant cumulative impact on hydrology and water quality**.

4.4.11. Land Use and Planning

Implementation of the statewide programs listed above 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. Nevertheless, development of these facilities would occur on lands owned and managed by various entities, including State agencies, private owners, special districts, nonprofit organizations, cities, and counties. These development would be required to comply with applicable city and county general plans and other local policies and ordinances. Development of facilities on State-owned and -managed lands would be subject to plans that have been adopted by the subject agency.

During implementation of projects under the proposed regulation, proponents would be required to review consistency with local plans, policies, and ordinances. The cumulative environmental impacts that could result from implementation of the proposed regulation are assessed throughout this chapter, and mitigation is identified to reduce significant and potentially significant impacts; thus, this EIR addresses, to the extent applicable to the proposed regulation, potential cumulative issues resulting in a conflict with any land use plan, policy, or regulation developed to avoid or mitigate an environmental effect. The proposed regulation **would not result in a considerable contribution to a significant cumulative impact on land use and planning**.

4.4.12. Noise

Implementation of the statewide programs listed above 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.

Implementation of reasonably foreseeable compliance responses associated with the proposed regulation (SB 1383) could also require construction and operational activities associated with new or modified facilities or infrastructure. Construction activities could

include noise and vibration associated with various types of construction equipment and activities (e.g., bulldozers, blasting). Operation of organic waste recovery facilities associated with the proposed regulation could require equipment that processes and handles material at these facilities (such as tub grinders and off-road heavy-duty trucks) that can emit high levels of noise.

Applicable mitigation measures are described in detail in Section 3.12, “Noise”:

- Mitigation Measure 3.12-1: Implement Noise-Reduction Measures during Project Construction
- Mitigation Measure 3.12-2: Implement Noise-Reduction Measures during Project Operation

To the extent that an individual project adopts and implements all feasible mitigation measures to reduce construction-related noise, the impact would be less than significant with mitigation. However, adoption and implementation of construction-related noise mitigation measures are subject to local land use and/or permitting agencies for individual projects. Mitigation measures that reduce operational noise impacts could be implemented by CalRecycle/LEAs; however, CalRecycle does not have the authority to require local implementing agencies to adopt operational noise mitigation measures for projects that are not subject to LEA permits. Therefore, although it is reasonably anticipated that cumulative noise impacts would be less than significant as a result of the feasible mitigation measures listed above, CalRecycle does not have the authority to enforce provisions on local governments. Thus, the proposed regulation **could result in a considerable contribution to a significant cumulative noise impact**.

4.4.13. Transportation

Implementation of the statewide programs listed above 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 location of these new facilities and to 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. 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 facilities, implementation of these statewide programs could conflict with applicable programs, plans, ordinances, and policies (e.g., performance standards, congestion management, VMT goals).

Implementation of reasonably foreseeable compliance responses associated with the proposed regulation could require construction and operations of new or modified organic waste recovery facilities or infrastructure. Although detailed information about potential specific construction activities is not currently available, some of the potential compliance responses could 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.

The applicable mitigation measure is described in detail in Section 3.13, "Transportation":

- Mitigation Measure 3.13-1: Prepare a Transportation Construction Plan

To the extent that an individual project adopts and implements all feasible mitigation measures listed above, the impact would be less than significant with mitigation. However, adoption and implementation of these mitigation measures are subject to local land use and/or permitting agencies for individual projects. Therefore, although it is reasonably anticipated that these cumulative construction-related transportation impacts would be less than significant through preparation of a transportation construction plan, CalRecycle does not have the authority to enforce provisions on local governments.

In addition to construction-related traffic, the proposed regulation would affect VMT for both worker commute trips and material deliveries. There is uncertainty related to where and how trips could increase or decrease, and consideration of potential differences is speculative. Because statewide VMT is likely to increase as a result of implementation of the proposed regulation, impacts would be considered to be significant for the purposes of CEQA. Thus, the proposed regulation could result in significant construction and operational transportation impact and therefore **could result in a considerable contribution to a significant cumulative impact on transportation**.

4.4.14. Utilities and Service Systems

Implementation of the statewide programs listed above 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. Development of new facilities could require increased provisions of water, wastewater, and stormwater drainage systems, electric power, natural gas, and telecommunications facilities. These activities would have the potential to adversely require expansion of existing infrastructure.

Implementation of reasonably foreseeable compliance responses associated with the proposed regulation (SB 1383) could also require construction and operational activities associated with new or modified facilities or infrastructure. Project proponents would seek appropriate assurances, such as will-serve letters, from utility companies to provide service to projects during design activities. Generally, individual organic waste recovery facilities would be located in existing developed areas where utility infrastructure is available, and connections would be easily made without adverse environmental effects. Overall, impacts on utilities would less than significant. Thus, the proposed regulation **would not result in a considerable contribution to a significant cumulative impact on utilities and service systems.**

4.4.15. Wildfire

Implementation of the statewide programs listed above 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. In the event of a wildfire, such facilities would be addressed by the appropriate response agency based on the geographic location where the site is located 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 reasonably foreseeable compliance responses associated with the proposed regulation (SB 1383) could also require construction and operational activities associated with new or modified facilities or infrastructure. The proposed regulation does not involve actions that would alter existing fire response or evacuation plans. 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. Thus, the proposed regulation **would not result in a considerable contribution to a significant cumulative impact on wildfire risk**.

This page intentionally left blank.

5. Alternatives

5.1. Introduction

CCR Section 15126.6(a) (State CEQA Guidelines) requires EIRs 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 reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.

This section of the State CEQA Guidelines also provides guidance regarding what the alternatives analysis should consider. Subsection (b) further states that 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 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 information about each alternative sufficient to allow meaningful evaluation, analysis, and comparison with the proposed project. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative 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, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in State CEQA Guidelines Section 15126.6(a). Although, as noted above, EIRs must contain a discussion of "potentially feasible" alternatives, the ultimate determination as to whether an alternative is feasible is made by the lead agency's decision-making body, here CalRecycle's Director. (See PRC Sections 21081.5, 21081[a][3].)

5.2. Considerations for Selection of Alternatives

5.2.1. Attainment of Project Objectives

The major implementation objectives of the proposed regulation are as follows:

1. Reduce the level of statewide disposal of organic waste to 50 percent of the 2014 levels by 2020 and 75 percent by 2025.
2. By 2025, recover 20 percent of the amount of edible food currently disposed of so it can be used for human consumption.

Achieving these targets is essential to achieving the GHG emission reductions identified in the SLCP Reduction Strategy, as well as the State's larger 2030 climate change goals.

The discussion of alternatives below describes whether or not each alternative could accomplish these basic project objectives.

5.2.2. Environmental Impacts of the SB 1383 Regulations

Sections 3.1 through 3.15 of this Draft EIR address the environmental impacts of implementing the proposed SB 1383 Regulations. Potentially feasible alternatives were developed with consideration of avoiding or lessening the significant, and potentially significant, adverse impacts of the project, as identified in Chapter 3 of this Draft EIR and summarized below. If an environmental issue area analyzed in this Draft EIR is not addressed below, it is because no significant impacts were identified for that issue area. Significant and unavoidable environmental impacts were identified in the following resource areas:

- aesthetics;
- agricultural and forestry resources;
- air quality;
- archaeological, historical, and tribal cultural resources;
- biological resources
- geology and soils;
- greenhouse gas emissions and climate change;
- hazards and hazardous materials;
- hydrology and water quality;
- noise; and
- transportation.

5.3. Alternatives Considered but Not Evaluated Further

State CEQA Guidelines Section 15126.6(c) states that the range of potential alternatives for the 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 project purpose need not be addressed in detail in an EIR (*In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* [2008] Cal.4th 1143, 1165–1167).

In determining what alternatives should be considered in the EIR, it is important to acknowledge the objectives of the project, the project's 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 noted above, EIRs must contain a discussion of "potentially feasible" alternatives, the ultimate determination as to whether an alternative is feasible is made by lead agency decision makers. (See PRC Section 21081[a][3].)

At the time of action on the project, the decision makers may consider evidence beyond that found in this EIR in addressing such determinations. The decision makers, for example, may conclude that a particular alternative is infeasible (i.e., undesirable) from a policy standpoint and may reject an alternative on that basis provided that the decision makers adopt a finding, supported by substantial evidence, to that effect, 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 rejected during the planning or scoping process and briefly explain the reasons underlying the lead agency's determination.

The following alternatives were considered by CalRecycle but are not evaluated further in this Draft EIR.

5.3.1. Undersink Disposer Alternative

With this alternative, the proposed regulation would be revised to require use of undersink disposers as a mechanism to redirect food waste that otherwise would be disposed in solid waste facilities. Disposal in undersink disposers would direct the food waste to wastewater treatment facilities. This alternative takes advantage of existing wastewater infrastructure and treatment capabilities (wastewater conveyance pipelines and wastewater treatment plants [WWTPs]) to transport and treat food waste.

This alternative could reduce transportation costs and related statewide vehicle miles traveled (VMT) associated with the proposed regulation. It is anticipated that this alternative would reduce the number of new or expanded organic waste recovery facilities that would be needed and the associated impacts on the state's natural landscape. It would also be expected to reduce the potential for additional people to be exposed to odors related to new facility development.

This alternative was rejected for several reasons. First, some studies have shown that homes with undersink disposers already use them for about 50 percent of their food waste; hence, the effect on eliminating food waste from refuse would be minimal. Further, there are infrastructure challenges with this alternative. Undersink disposers are used in more than 50 percent, but not all, of U.S. homes (Roth 2019). In areas of California where undersink disposers are not commonplace, it is likely that the wastewater system is not designed to accommodate the volume of material that would be associated with installation and use of undersink disposers. Some of the wastewater collection system infrastructure is aging or at capacity. Additionally, if the wastewater treatment system serving a particular community does not include an anaerobic digestion facility, the ultimate end use of the organic waste handled through this method may not be handled in a way that meets the regulatory standard of recovery.

Use of undersink disposers can also be harmful to the state's water supply. The nitrogen in food waste can be harmful to downstream marine and plant life (Roth 2019). California is also known for its water supply challenges, particularly in drought years. Use of undersink disposers can be water-intensive (Roth 2019), which would exacerbate these challenges.

Methane emissions associated with wastewater lines would increase commensurate with increases in organic materials passing through the system. An increase in methane emissions could conflict with the objectives of the SLCP Reduction Strategy.

Finally, as noted above, although food waste makes up a substantial portion of the organic waste stream, reducing food waste disposal is not the sole objective of the

statute. Eighty percent of organic waste disposed in 2014 is material other than food that cannot be handled through an undersink disposal system. These materials are generated by commercial and residential households and would be left unaddressed by this alternative.

For these reasons, this alternative was dismissed from further consideration.

5.3.2. Landfill Gas Collection Efficiency Alternative

This alternative could change the nature of the proposed regulation to focus on requiring more efficient landfill gas collection systems that increase the capture of methane emissions at existing landfills. The goal of this alternative would be to require landfill gas collection systems to have nearly 100-percent collection efficiency. This alternative was rejected in part because it is unclear whether landfill gas collection systems can be feasibly designed to achieve efficiencies of this magnitude; there is currently little information available to support these efficiencies. This alternative would also likely result in the closure of landfills where installing costly landfill gas collection systems would be infeasible. Finally, this alternative was rejected because it does not meet CalRecycle's basic objective to reduce the level of statewide disposal of organic waste.

5.3.3. Co-Locate Organic Waste Recovery Facilities Only at Existing Solid Waste–Handling Facilities and WWTPs Alternative

With this alternative, the proposed regulation would include all the regulatory requirements of the proposed regulation but would additionally require that new organic waste recovery facilities developed in response to the proposed regulation be sited only at existing solid waste–handling facilities and WWTPs. This alternative would reduce the impact on the state's natural landscape. It would also be expected to reduce the potential for additional people to be exposed to odors related to new facility development. It could, however, exacerbate impacts at existing solid waste–handling facilities and could make achieving the basic project objectives to reduce organic waste disposal more challenging (i.e., there may not be enough capacity to meet the disposal reduction objectives).

It is not clear that CalRecycle would have legal authority to pursue this alternative—in particular, because several of the activities and end uses that constitute organic waste recovery do not require a solid waste facility permit. For the activities that do require a solid waste facility permit, PRC Section 40059 states that aspects of solid waste handling are of local concern, including, but not limited to, frequency of collection; means of collection and transportation; level of services; charges and fees; and nature, location, and extent of providing solid waste–handling services. For these reasons, it is not clear that CalRecycle could dictate the location of organic waste recovery facilities developed in response to the proposed regulation. Therefore, this alternative was eliminated from further consideration.

5.3.4. Prohibit Mixed (Single- and Two-Container) Organic Waste Collection Programs Alternative

Article 3 (Section 18984) of the proposed regulation specifies minimum standards for organic waste collection services provided by jurisdictions, including specific container coloring and labeling requirements, and record keeping, to reduce container contamination. The regulations require generators to subscribe to services and require jurisdictions to provide services and ensure compliance. The article allows jurisdictions to provide a variety of organic waste collection services, including a three-container (green/blue/gray) collection service (a fourth container [brown] can be used for food waste if a jurisdiction wishes to source-separate green material and food waste), two-container (green/gray or blue/gray) collection service, and an unsegregated single-container (gray) collection service. Each service is subject to state minimum standards. Container colors and labels dictate what waste is intended for collection.

With this alternative, Article 3 would be revised to exclude the option for single- and two-container organic waste collection services. The collected organic waste stream would be far cleaner with this alternative, which would likely result in fewer processing facilities and less demand for energy and related resources to remove contaminants.

This alternative was eliminated from further consideration largely because it is not expected to avoid or lessen the severity of the environmental impacts associated with the proposed regulation (identified in Chapter 3 of this Draft EIR). With respect to some environmental resource topics, such as VMT, this alternative could require additional collection routes, which would exacerbate the severity of the statewide impact.

5.4. Alternatives Evaluated in Detail

The following alternatives are evaluated in this Draft EIR:

- **Alternative 1: No Project Alternative** assumes that the proposed regulation would not be adopted.
- **Alternative 2: Limit the Types of Facilities, Operations, and Activities that Process or Use Organic Waste in a Way that Constitutes a Reduction of Landfill Disposal.** This alternative would limit Article 2 (14 CCR Section 18983.1[b]) of the proposed regulation to include only compost facilities, AD facilities, and recycling centers as the types of facilities, operations, and activities that would constitute a reduction in landfill disposal or recovery.
- **Alternative 3: Expand List of Targeted Commercial Edible Food Generators.** This alternative would expand the list of targeted commercial edible food generators in Article 10 (14 CCR 18991.3) of the proposed regulation with the intent of increasing the volume of edible food recovered (potentially reducing the overall food insecurity rate in California) and reducing the amount of material that needs to be managed as waste.

Further details on these alternatives, and an evaluation of environmental effects relative to the proposed project, are provided below.

5.4.1. Alternative 1: No Project Alternative

Consistent with the State CEQA Guidelines, an EIR must include an evaluation of the No Project Alternative. As noted in the State CEQA Guidelines, "[t]he purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project" (Section 15126.6[e][1]). The No Project Alternative also provides an important point of comparison to understand the potential environmental benefits and impacts of the other alternatives.

Under the No Project Alternative, no regulation would be adopted. Organic waste would not be diverted from landfills beyond that which occurs under existing conditions or planned programs, and the methane reduction goals of the SLCP strategy, and by extension the State's overall climate change targets, would not be met. It is not clear that CalRecycle has the legal authority to pursue the No Project Alternative. CalRecycle is legislatively mandated to develop regulations designed to reach the SB 1383 statewide disposal reduction and edible food recovery targets (Lara, Chapter 395, Statutes of 2016).

Impact Discussion

Under the No Project Alternative, the proposed regulation would not be adopted and there would therefore not be any changes to how compostable materials are collected, transported, and managed. Thus, because there would be no new development or other physical changes related to regulation, there would be no impacts under the No Project Alternative.

However, without implementation of the proposed regulation, many of the benefits would not occur. As described in more detail in Section 2.7, "Anticipated Benefits of SB 1383 Regulations," diverting organic waste from landfills and into beneficial uses in accordance with the proposed regulation is expected to result in benefits to food insecurity, soil health, and availability of biogas and reduce landfill disposal. In terms of environmental impacts, the No Project Alternative would not result in the methane emission or other air quality emission reductions that would occur through the reduction of organic waste disposal associated with the proposed regulation.

5.4.2. Alternative 2: Limit the Types of Facilities, Operations, and Activities that Process or Use Organic Waste in a Way that Constitutes a Reduction of Landfill Disposal

Article 2 (14 CCR Section 18983.1[b]) of the proposed regulation distinguishes what constitutes landfill disposal and recovery for the purposes of organic waste handling. Organic waste recovery involves redirecting organic waste that otherwise would be disposed of in a landfill to activities or facilities with processes that reduce GHGs in accordance with the proposed regulation (14 CCR Section 18983.2).

With Alternative 2, Article 2 of the proposed regulation would be revised to include only compost facilities, AD facilities, and recycling centers as the types of facilities,

operations, and activities that would constitute a reduction in landfill disposal or recovery. Article 2 would be revised to exclude references to biomass conversion facilities; material used as a soil amendment for erosion control, revegetation, slope stabilization, or landscaping at a landfill; land application; animal feed; and other operations. The edible food recovery targets and requirements included in the proposed regulation would be the same as under the proposed regulation.

Alternative 2 would continue to target the largest components (an estimated 70 percent) of the recoverable organic waste stream (food, paper, and green materials); thus, it is anticipated that the project objectives related to reductions in landfill disposal could be accomplished with implementation of this alternative. Alternative 2 could also include a revision to the definition of organic waste in the proposed regulation (Section 18982[a][46]) to exclude carpet and textiles, which are not suitable for handling at compost facilities, AD facilities, or traditional paper recycling facilities.

Impact Discussion

Under Alternative 2, implementation of the regulation would require the development and operation of a similar number and type of new and expanded facilities to support management of compostable materials. Impacts associated with construction of new facilities under Alternative 2 would be similar to those that would occur under the proposed regulation and would consist of impacts related to aesthetics; agricultural and forestry resources; air quality; archeological, historical, and tribal cultural resources; biological resources; energy; geology and soils; hazards and hazardous materials; land use and planning; noise; transportation; utilities and service systems; and wildfire.

Under Alternative 2, the management of compostable materials would be different than under the proposed regulation. By excluding biomass conversion facilities; material used as a soil amendment for erosion control, revegetation, slope stabilization, or landscaping at a landfill; land application; animal feed, and other operations, this alternative would avoid water quality impacts associated with land application.

Alternative 2 could increase VMT because the array of management options available to regulated entities would be limited. Limiting the number of existing activities that constitute recovery would increase the likelihood that material would need to travel greater distances to be managed at the smaller number of qualifying facilities. For example, use of a nearby animal feed opportunity, biomass conversion facility, or property for land application would not count as recovery, so the material may need to be hauled to a more distant compost facility. Implementing Alternative 2 would ultimately increase the cost of compliance for regulated entities because it would limit the potential marketplace of viable recovery options. This type of limitation would not directly impede the state's ability to achieve the purpose of the regulations, but it could increase the cost of compliance, which may delay when compliance is achieved.

5.4.3. Alternative 3: Expand List of Targeted Commercial Edible Food Generators

Article 10 (Section 18991 et seq.) of the proposed regulation requires jurisdictions to implement and oversee an edible food recovery program. In addition, commercial edible food generators must establish documented arrangements with food recovery organizations or services and meet record-keeping requirements to support their compliance with Article 10.

With Alternative 3, the Article 10 list of targeted commercial edible food generators (14 CCR 18991.3) would be expanded. Section 18982(a)(73) of the proposed regulations defines a Tier One commercial edible food generator as a (a) supermarket, (b) grocery store with a total facility size equal to or greater than 10,000 square feet, (c) food service provider, (d) food distributor, or (e) wholesale food vendor. A Tier Two commercial edible food generator (Section 18982[a][74]) is defined as a (a) restaurant with 250 or more seats or a total facility size equal to or greater than 5,000 square feet, (b) hotel with an on-site food facility and 200 or more rooms, (c) health facility with an on-site food facility and 100 or more beds, (d) large venue, (e) large event, (f) state agency with a cafeteria with 250 or more seats or total cafeteria facility size equal to or greater than 5,000 square feet, or (g) local education agency with an on-site food facility.

With Alternative 3, the Article 10 definition of targeted commercial edible food generators would be expanded to target all restaurants, all hotels and health facilities with on-site food facilities, and all state agencies with a cafeteria, regardless of their size. By expanding the list of targeted generators, Alternative 3 would be expected to increase the volume of edible food recovered and potentially reduce the overall food insecurity rate in California, as well as the amount of food that must be managed as waste.

Impact Discussion

Alternative 3 would potentially reduce the number of new or expanded organic waste recovery facilities constructed to meet compostable materials disposal reduction goals. The level of impact associated with the construction of new facilities under Alternative 3 would be less than described for the proposed regulation for the following issue areas: aesthetics; agricultural and forestry resources; air quality; archaeological, historical, and tribal cultural resources; biological resources; hazards and hazardous materials; hydrology and water quality; noise; transportation; and utilities and service systems. Impacts associated with Alternative 3 that would be similar to those that would occur under the proposed regulation consist of impacts related to: air quality, energy, geology and soils, GHG emissions and climate change, land use and planning; and wildfire.

Under Alternative 3, there could be less long-haul transport of compostable materials diverted from landfills and postprocessed materials distributed throughout the state for land application. However, VMT may not decrease depending on the location of available food in relation to food recovery services and organizations. In addition, with fewer compost and AD facilities, localized odor impacts would decrease.

The additional sources that would be subject to the food recovery requirements are smaller entities that generate less food per day than the large sources subject to the proposed regulation. Although the cost of compliance may be similar for these entities, the costs would be disproportionately higher because the smaller entities typically have smaller revenue streams than the larger entities that would be subject to the regulation (e.g., hotels, supermarkets).

The proposed regulation phases in the requirements on larger entities to target the entities that would contribute the most to the food recovery target. Further, by targeting the entities in the proposed regulation, the project allows those entities to pilot recovery methods and technology to help bring innovation in this sector to market. Including smaller entities under Alternative 3 would increase the cost of the project without necessarily increasing the likelihood of achieving the food recovery target. These entities could be phased in at a later date as a part of a subsequent regulation, when compliance may be cheaper as more efficient recovery methods are established by larger entities. CalRecycle did not pursue this alternative, because it is not necessary to subject these entities to an additional cost to achieve the purpose of the statute.

5.5. Environmentally Superior Alternative

Because the No Project Alternative (described above in Section 5.4.1) would avoid all adverse impacts resulting from construction and operation of the reasonably foreseeable compliance responses associated with the proposed regulation, it would be the environmentally superior alternative, although it would not achieve the objectives of the proposed regulation. When the environmentally superior alternative is the No Project Alternative, the State CEQA Guidelines (Section 15126.6[e][2]) require selection of an environmentally superior alternative from among the other alternatives evaluated.

As illustrated in Table 5-1, below, if avoidance of significant impacts is viewed as the compelling criterion, the environmentally superior alternative would be Alternative 2 because it avoids hydrology and water quality impacts that would occur under the proposed regulation. Alternative 2 would avoid potentially significant hydrology and water quality impacts by excluding authorization of land application in the regulation. However, Alternative 2 is worse than the proposed regulation as it relates to GHG emission reduction. Alternative 2 would, therefore, be less likely to meet the project objectives associated with reducing the level of statewide disposal of organic waste and reductions in methane emissions than the proposed regulation. In addition, Alternative 2 could increase statewide costs for implementing the proposed regulation because the least costly recovery options (mulch and land application) would be excluded from the organic waste recovery program.

Table 5-1 Summary of Environmental Effects of the Alternatives Relative to the Proposed Regulation

Environmental Topic	Alternative 1: No Project Alternative	Alternative 2: Limit the Types of Facilities, Operations, and Activities that Process or Use Organic Waste in a Way that Constitutes a Reduction of Landfill Disposal	Alternative 3: Expand List of Targeted Commercial Edible Food Generators
Aesthetics	Less (avoids significant impacts)	Similar	Less
Agricultural and Forestry Resources	Less (avoids significant impacts)	Similar	Less
Air Quality	Less (has fewer beneficial impacts, avoids significant impacts)	Similar	Similar
Archaeological, Historical, and Tribal Cultural Resources	Less (avoids significant impacts)	Similar	Less
Biological Resources	Less (avoids significant impacts)	Similar	Less
Energy	Similar	Similar	Similar
Geology and Soils	Similar	Similar	Similar
Greenhouse Gas Emissions and Climate Change	Less (has fewer beneficial impacts)	Less (has fewer beneficial impacts)	Similar
Hazards and Hazardous Materials	Less (avoids significant impacts)	Similar	Less

Environmental Topic	Alternative 1: No Project Alternative	Alternative 2: Limit the Types of Facilities, Operations, and Activities that Process or Use Organic Waste in a Way that Constitutes a Reduction of Landfill Disposal	Alternative 3: Expand List of Targeted Commercial Edible Food Generators
Hydrology and Water Quality	Less (avoids significant impacts)	Less (avoids significant impacts)	Less
Land Use and Planning	Similar	Similar	Similar
Noise	Less (avoids significant impacts)	Similar	Less
Transportation	Less (avoids significant impacts)	Similar	Less
Utilities and Service Systems	Similar	Similar	Less
Wildfire	Similar	Similar	Similar

6. Other CEQA Considerations

This chapter summarizes the significant and unavoidable impacts, growth-inducing impacts, and significant irreversible environmental changes associated with the proposed regulation.

6.1. Significant and Unavoidable Adverse Impacts

State CEQA Guidelines Section 15126.2(c) requires EIRs to include a discussion of the significant environmental effects that cannot be avoided if the proposed project is implemented. As documented throughout Chapter 3 (project-level impacts) and Chapter 4, "Cumulative Impacts," of this Draft EIR, mitigation measures are available to reduce many of the environmental impacts to a less-than-significant level. However, for the majority of potentially significant impacts, CalRecycle does not have the authority to require local implementing agencies to adopt mitigation measures, and it is ultimately the responsibility of a lead agency with land use authority to determine and adopt mitigation. Therefore, although it is reasonably anticipated that many of the potential impacts related to the proposed regulation would be less than significant as a result of siting factors and local government land use approvals, CalRecycle does not have the authority to enforce provisions on local governments. For purposes of the good-faith disclosure required by CEQA, these types of impacts are considered to be significant and unavoidable.

The following potentially significant and unavoidable impacts would occur under the proposed regulation:

- Aesthetics
  - Impact 3.1-1: Short-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 Construction of Facilities in Response to the Proposed Regulation
  - 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 Facilities in Response to the Proposed Regulation
  - Impact 3.1-4: Temporary or Permanent New Sources of Substantial Light or Glare That Would Adversely Affect Day or Nighttime Views in Areas near Project Sites
- Agricultural and Forestry Resources
  - Impact 3.2-1: Conversion of Farmland to Nonagricultural Use or Conflict with a Williamson Act Contract or Zoning for Agricultural Use

- Impact 3.2-2: Conflict with Existing Zoning for Forestland, Timberland, or Timberland Zoned Timberland Production or Loss of Forestland from Conversion to Nonforest Use
- Impact 3.2-3: Changes in the Existing Environment That, Because of Their Location or Nature, Indirectly Result in Conversion of Farmland to Nonagricultural Use or Conversion of Forestland to Nonforest Use

- Air Quality
  - Impact 3.3-1: Short-Term Construction-Related Emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$
  - Impact 3.3-2: Long-Term Operational Emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$
  - Impact 3.3-4: Exposure of Sensitive Receptors to TAC Emissions
  - Impact 3.3-5: Exposure of Sensitive Receptors to Odors
- Archaeological, Historical, and Tribal Cultural Resources
  - Impact 3.4-1: Substantial Adverse Change in the Significance of Built Historical Resources
  - Impact 3.4-2: Disturbance to Unique Archaeological Resources
- Biological Resources
  - Impact 3.5-1: Adverse Effects on Special-Status Species, Either Directly or through Habitat Modifications
  - Impact 3.5-2: Substantial Adverse Effects on Riparian Habitat, Federally Protected Wetlands, or Other Sensitive Natural Communities through Direct Removal, Filling, Hydrological Interruption, or Other Means
- Geology and Soils
  - Impact 3.7-6: Destruction of a Unique Paleontological Resource or Site
- Greenhouse Gas Emissions and Climate Change
  - Impact 3.8-2: Short-Term Construction-Generated GHG Emissions
- Hazards and Hazardous Materials
  - Impact 3.9-2: Significant Hazards to the Public or Environment from Disturbance to Known Hazardous Material Sites
  - Impact 3.9-5: Safety Hazard from Siting an Organic Waste–Handling Facility within 5 Miles of an Airport
  - Impact 3.9-6: Impaired Implementation of or Physical Interference with an Adopted Emergency Response Plan or Emergency Evacuation Plan

- Hydrology and Water Quality
  - Impact 3.10-3: Violation of Any Water Quality Standards or Waste Discharge Requirements or Conflict with the Implementation of a Water Management Plan through Land Application of Uncomposted Organic Materials
- Noise
  - Impact 3.12-1: Short-Term Construction-Related Noise Effects
  - Impact 3.12-2: Long-Term Operation Effects on Noise
- Transportation
  - Impact 3.13-1: Construction-Related Traffic Impacts
  - Impact 3.13-4: Reasonably Anticipated Increase in VMT

6.2. Growth Inducement

State CEQA Guidelines Section 15126.2(e) requires an EIR to evaluate the potential growth-inducing impacts of a proposed project. Specifically, an EIR must 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. Growth can be induced in a number of ways, including by eliminating obstacles to growth and by encouraging or facilitating other activities that could induce growth. Examples of projects likely to have growth-inducing impacts include extensions or expansions of infrastructure systems (such as highways or utilities) beyond what is needed to serve project-specific demand, and development of new residential or commercial uses in areas that are currently only sparsely developed or are undeveloped. The State CEQA Guidelines are clear that although an analysis of growth-inducing effects is required, it should not be assumed that induced growth is necessarily significant or adverse.

Direct growth inducement would result if a project involved construction of new housing. Indirect growth inducement would result, for instance, if implementing a project resulted in:

- substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises);
- substantial short-term employment opportunities (e.g., construction employment) that indirectly stimulates the need for additional housing and services to support the new temporary employment demand; or
- 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).

The State CEQA Guidelines do not distinguish between planned and unplanned growth for purposes of considering whether a project would foster additional growth. Therefore,

for purposes of this EIR, to reach the conclusion that a project is growth-inducing as defined by CEQA, the EIR must find that the project would foster (i.e., promote or encourage) growth in economic activity, population, or housing, regardless of whether the growth is already approved by and consistent with local plans. The conclusion does not determine that induced growth is beneficial or detrimental, consistent with the State CEQA Guidelines (CCR Section 15126.2[e]).

Environmental effects resulting from induced growth fit the CEQA definition of "indirect" effects in the State CEQA Guidelines (CCR Section 15358[a][2]). These indirect or secondary effects of growth may result in significant environmental impacts. 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.

The proposed regulation directs statewide organic waste disposal reduction and edible food recovery targets. The regulation would change the way that organic waste is collected, managed, and processed, and it would apply to approximately 540 jurisdictions in California; millions of households; thousands of businesses; hundreds of haulers and food recovery organizations; hundreds of material recovery facilities, processors, recyclers, and landfills; dozens of local government environmental enforcement agencies; and all schools, federal agencies, and state agencies.

Based on the employment projections described in the State Regulatory Impact Assessment prepared for the proposed regulation, statewide employment would increase by approximately 17,000 jobs during peak construction (in 2024) and then decrease to an additional 11,700 permanent jobs by 2030. This increase in employment may result in localized growth from new construction and organic waste management jobs. However, if these changes are viewed as percent changes over business as usual (i.e., if the proposed regulation is not implemented), the statewide changes to employment levels are essentially 0.04 to 0.07 percent and therefore are minor in the overall economy (CalRecycle 2018). Thus, because this increase in employment levels in the state would be slight, implementing the proposed regulation 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, implementing the proposed regulation would require the construction of new or expanded organic waste recovery facilities and creation of new jobs to support efforts to meet organic waste disposal reduction and edible food recovery targets. 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 effort 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, which have limited service areas based on available infrastructure such as 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.

6.3. Significant Irreversible Environmental Changes

CEQA requires a discussion of the significant irreversible environmental changes that would occur as the result of implementing a project (Section 15126.2[d] of the State CEQA Guidelines). Such a discussion addresses the commitment of current or future uses of nonrenewable resources, potential irreversible environmental damage from accidents associated with the project, and secondary or growth-inducing impacts that commit future generations to similar use.

The construction and operation of new and expanded organic waste recovery facilities built in response to the proposed regulation would involve the commitment of renewable and nonrenewable environmental resources, including land, water resources, construction materials, and fossil fuels. Implementing the proposed regulation also would reduce the rate at which nonrenewable resources are used, such as through the procurement of renewable natural gas, which would reduce reliance on fossil fuels, and the expansion of available waste disposal capacity through the reduction of organic waste sent to landfills.

Irretrievable commitments of nonrenewable resources associated with the proposed regulation would include those described below. 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 new and expanded organic waste recovery facilities is discussed in Chapter 3.6, “Energy.”
- The use of building materials, fossil fuels, and other resources for construction, maintenance, and operation of new and expanded facilities is addressed in Chapter 3.6, “Energy.”
- Degradation of ambient air quality through construction and operation of new and expanded facilities is addressed in Chapter 3.3, “Air Quality.”
- Emission of GHGs that would contribute to global climate change is addressed in Chapter 3.8, “Greenhouse Gas Emissions and Climate Change.”

This page intentionally left blank.

7. Report Preparers

7.1. CalRecycle (Lead Agency)

Ken Decio ..... EIR Contract Manager

Hank Brady ..... SB 1383 Manager

Harllee Branch ..... Legal Counsel

Mark deBie ..... Deputy Director

Christina Files ..... Editor

7.2. Ascent Environmental, Inc. (CEQA Consultant)

Curtis E. Alling, AICP ..... Principal

Nanette Hansel ..... Project Manager, Noise

Marianne Lowenthal ..... Assistant Project Manager; Archaeological, Historical, and Tribal Cultural Resources; Biological Resources; Transportation; Utilities and Service Systems

Jim Merk ..... Technical Editor

Dan Krekelberg ..... Energy

Rachel Kozloski, CPSS ..... Geology and Soils, Hydrology and Water Quality

Jessica Mitchell ..... Aesthetics, Agricultural and Forestry Resources, Hazards and Hazardous Materials

Julia Wilson ..... Air Quality, Greenhouse Gas Emissions and Climate Change

Honey Walters ..... Senior Air Quality, Greenhouse Gas Emissions and Climate Change

Tiffany Lunday ..... Land Use and Planning, Wildfire

Lisa Merry ..... GIS Specialist

Phi Ngo ..... GIS Specialist

Gayiety Lane ..... Publishing Specialist

Michele Mattei ..... Publishing Specialist

Corey Alling ..... Graphic Specialist

7.3. Integrated Waste Management Consulting, LLC (Organics Industry Expert)

Matt Cotton .....Technical Lead

8. References

Executive Summary

California Department of Resources Recycling and Recovery. 2015 (October 6). *2014 Disposal-Facility-Based Characterization of Solid Waste in California.* Sacramento, CA.

———. 2019 (May 16). Email to Nanette Hansel at Ascent Environmental from Hank Brady of CalRecycle dated May 16, 2019—spreadsheet that includes diversion tons allocated by recovery option and potential air basin locations for compost and anaerobic digestion facilities. Sacramento, CA.

Chapter 1, "Introduction"

No sources were cited in this chapter.

Chapter 2, "Project Description"

California Air Resources Board. 2017a (March). *Short-Lived Climate Pollutant Reduction Strategy*. Available: https://www.arb.ca.gov/cc/shortlived/meetings/03142017/final_slcp_report.pdf. Accessed May 17, 2019.

———. 2017b (March). Appendix F, Supporting Documentation for the Economic Assessment of Measures in the SLCP Strategy. *In Short-Lived Climate Pollutant Reduction Strategy*.

California Association of Food Banks. 2017. Hunger Fact Sheet. Available: https://www.cafoodbanks.org/hunger-factsheet. Accessed October 27, 2017.

California Department of Resources Recycling and Recovery. 2011 (June). *Statewide Anaerobic Digestion Facilities for the Treatment of Municipal Organic Solid Waste, Final Program Environmental Impact Report*. Sacramento, CA. Prepared by ESA, Sacramento, CA.

———. 2015 (October 6). *2014 Disposal-Facility-Based Characterization of Solid Waste in California.* Sacramento, CA.

———. 2018a (October 23). Paper Waste Prevention and Recycling. Available: https://www.calrecycle.ca.gov/paper/prevention. Accessed May 17, 2019.

———. 2018b. *Proposed Regulation for Short-Lived Climate Pollutants: Organic Waste Methane Emissions, Standard Regulatory Impact Assessment*. Sacramento, CA.

———. 2019a (May 16). Email to Nanette Hansel at Ascent Environmental from Hank Brady of CalRecycle dated May 16, 2019—spreadsheet that includes tons allocated by recovery option and potential air basin locations for compost and anaerobic digestion facilities. Sacramento, CA.

———. 2019b (April 12). Email to Nanette Hansel at Ascent Environmental from Hank Brady of CalRecycle dated April 12, 2019—spreadsheet that includes active organics grants program grants.

———. 2019c (April 29). *SB 1383 Infrastructure and Market Analysis.* Sacramento, CA. Prepared by Integrated Waste Management Consulting, Nevada City, CA.

———. 2019d (May 15). Email to Nanette Hansel at Ascent Environmental from Hank Brady of CalRecycle dated May 15, 2019—summary of end uses for biosolids in 2018.

———. 2019e (May 15). Email to Nanette Hansel at Ascent Environmental from Hank Brady of CalRecycle dated May 15, 2019—spreadsheet that includes SB 498 biomass report totals.

California Energy Commission. 2019. Biomass. Available: https://www.energy.ca.gov/biomass/. Accessed May 22, 2019.

CalRecycle. *See* California Department of Resources Recycling and Recovery.

CARB. *See* California Air Resources Board.

Integrated Waste Management Consulting. 2019a. Compost flow chart. Nevada City, CA. Received by Ascent Environmental on April 26, 2019.

———. 2019b. Compost impacts. Nevada City, CA. Received by Ascent Environmental on April 27, 2019.

———. 2019c. Biogas flow chart. Nevada City, CA. Received by Ascent Environmental on May 23, 2019.

IWMC. *See* Integrated Waste Management Consulting.

Mill Valley Refuse Service. 2019. *Dual-Stream Pilot Recycling Program, Program Summary & Evaluation.* Available: https://www.millvalleyrefuse.com/pdfs/MVRS%20Dual-Stream%20Pilot%20Report%20032119.pdf. Accessed May 21, 2019.

Paben, J. 2019 (May 14). Experts Duel Over Dual-Stream's Merits. In Resource Recycling, Inc. news. Available: https://resource-recycling.com/recycling/2019/05/14/experts-duel-over-dual-streams-merits/. Accessed May 21, 2019.

Pyzyk, K. 2018 (September 4). Lake Worth, Florida Reverting to Dual-Stream Collection Next Month. Available: https://www.wastedive.com/news/lake-worth-florida-dual-stream-collection/531504/. Accessed June 12, 2019.

Scott Equipment. 2016. Why Choose the Turbo Separator? Available: http://www.scottequipment.com/turborecycling/. Accessed May 29, 2019.

Southern California Gas Company. 2016 (September 19). SoCalGas Commends Governor Brown and Senator Ricardo Lara for SB 1383. Available: https://www.prnewswire.com/news-releases/socalgas-commends-governor-brown-and-senator-ricardo-lara-for-sb-1383-300330363.html. Accessed May 28, 2019.

State Water Resources Control Board. 2019. GeoTracker Map of Tier II General Order Composting Facilities. Available: http://geotracker.waterboards.ca.gov/map/?compost=True. Accessed May 20, 2019.

Staub, C. 2019 (May 14). Why the U.S. Paper Recovery Rate Rose Last Year. In Resource Recycling, Inc. news. Available: https://resourcerecycling.com/recycling/2019/05/14/why-the-u-s-paperrecovery-rate-rose-last-year/. Accessed May 21, 2019.

SWRCB. *See* State Water Resources Control Board.

Toto, D. 2019 (May 23) Taking Sides on Single- or Dual-Stream Recycling. Recycling Today. Available: https://www.recyclingtoday.com/article/wasteexpo-2019-dual-stream-vs-single-stream/. Accessed June 12, 2019.

USDA. *See* U.S. Department of Agriculture

U.S. Department of Agriculture. 2018 (September 4). Definitions of Food Security. Available: https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security/. Accessed May 29, 2019.

WHO. *See* World Health Organization.

World Health Organization. 2019. Reducing Global Health Risks through Mitigation of Short-Lived Climate Pollutants. Available: http://www.who.int/phe/health_topics/outdoorair/climate-reducing-health-risks-faq/en/. Accessed May 17, 2019.

Chapter 3, "Environmental Impacts and Mitigation Measures"

California Department of Resources Recycling and Recovery. 2018. *Proposed Regulation for Short-Lived Climate Pollutants: Organic Waste Methane Emissions, Standard Regulatory Impact Assessment*. Sacramento, CA.

CalRecycle. *See* California Department of Resources Recycling and Recovery

Section 3.1, "Aesthetics"

California Department of Transportation. 2017. Scenic Highways – Frequently Asked Questions. Available: http://www.dot.ca.gov/design/lap/livability/scenic-highways/faq.html. Accessed May 13, 2019.

Caltrans. *See* California Department of Transportation.

Section 3.2, "Agricultural and Forestry Resources"

CAL FIRE. *See* California Department of Forestry and Fire Protection.

California Department of Conservation. 2016 (December). *The California Land Conservation Act of 1965 2016 Status Report*. Available: https://www.conservation.ca.gov/dlrp/wa/Documents/stats_reports/2016%20LCA%20Status%20Report.pdf.

California Department of Fish and Wildlife. 2019. Wildlife Habitats - California Wildlife Habitat Relationships System. Available: https://www.wildlife.ca.gov/Data/CWHR/Wildlife-Habitats. Accessed May 23, 2019.

California Department of Forestry and Fire Protection. 2018 (August). *California's Forests and Rangelands: 2017 Assessment*. Available: https://frap.fire.ca.gov/media/3180/assessment2017.pdf. Accessed May 23, 2019.

CDFW. *See* California Department of Fish and Wildlife.

DOC. *See* California Department of Conservation.

University of California, Division of Agriculture and Natural Resources. 2019. California Forests. Available: https://ucanr.edu/sites/forestry/California_forests/. Accessed May 23, 2019.

Section 3.3, "Air Quality"

BAAQMD. *See* Bay Area Air Quality Management District.

Bay Area Air Quality Management District. 2017. *California Environmental Quality Act Air Quality Guidelines*. Available: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed May 2019.

Buyuksonmez, F., and J. Evans. 2007. Biogenic Emissions from Green Waste and Comparison to the Emissions Resulting from Composting Part II: Volatile Organic Compounds (VOCs). *Compost Science & Utilization* 15(3):191–199. Available: https://www.calrecycle.ca.gov/docs/cr/Organics/Air/BiogenicEmis.pdf. Accessed April 2019.

California Air Resources Board. 2000 (October). *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. Available: https://www.arb.ca.gov/diesel/documents/rrpFinal.pdf. Accessed March 8, 2017.

———. 2003. *HARP User Guide.* Sacramento, CA.

———. 2013. *California Almanac of Emissions and Air Quality—2013 Edition*. Available: http://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm. Accessed January 4, 2017.

———. 2016 (May 4). Ambient Air Quality Standards. Available: https://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed January 4, 2017.

California Air Resources Board, California Air Pollution Control Officers Association, and California Department of Resources Recovery and Recycling. 2018 (August). *Composting in California: Addressing Air Quality Permitting and Regulatory Issues for Expanding Infrastructure*. Available: https://www2.calrecycle.ca.gov/PublicNotices/Documents/9215. Accessed May 2019.

California Department of Resources Recovery and Recycling. 2018a (November 20). Odor Impact Minimization Plan. Available: https://www.calrecycle.ca.gov/swfacilities/compostables/odor/oimp. Accessed April 2019.

———. 2018b (November). *Proposed Regulation for Short-Lived Climate Pollutants: Organic Waste Methane Emissions—Standardized Regulatory Impact Assessment (SRIA)*. Available: http://www.dof.ca.gov/Forecasting/Economics/Major_Regulations/Major_Regulations_Table/documents/Final_Sria_11-16%20.pdf. Accessed June 2019.

———.2019 (July 10) Spreadsheet allocating air quality emission reductions by air basin in the year 2030. Emailed to Nanette Hansel at Ascent Environmental from Hank Brady of CalRecycle dated July 10 2019. Sacramento, CA.

CalRecycle. *See* California Department of Resources Recovery and Recycling.

CARB. *See* California Air Resources Board.

CARB, CAPCOA, and CalRecycle. *See* California Air Resources Board, California Air Pollution Control Officers Association, and California Department of Resources Recovery and Recycling.

EPA. *See* U.S. Environmental Protection Agency.

OEHHA. *See* Office of Environmental Health Hazard Assessment.

Office of Environmental Health Hazard Assessment. 2015 (February). *Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments*. Available: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf. Accessed May 2019.

Roorda-Knape, M. C., N. Hansen, J. de Hartog, P. Van Vliet, H. Harssema, and B. Brunekreef. 1999. Traffic Related Air Pollution in City Districts near Motorways. *Science of the Total Environment* 235:339–341.

Sacramento Metropolitan Air Quality Management District. 2016. Operational Criteria Air Pollutant and Precursor Emissions. Available: http://www.airquality.org/LandUseTransportation/Documents/Ch4OperationalFINAL8-2016.pdf. Accessed July 2019.

SMAQMD. *See* Sacramento Metropolitan Air Quality Management District.

U.S. Environmental Protection Agency. 2004. A Manual for Developing Biogas Systems at Commercial Farms in the United States: AgSTAR Handbook. Available: https://www.epa.gov/sites/production/files/2014-12/documents/agstar-handbook.pdf. Accessed July 2019.

———. 2012 (April). 2008 Ground-Level Ozone Standards: Region 9—Final Designations. Available: https://www3.epa.gov/region9/air/ozone/index.html. Accessed January 4, 2017.

———. 2018 (March). Criteria Air Pollutants. Available: https://www.epa.gov/criteria-air-pollutants#self. Last updated March 8, 2019. Accessed May 2019.

Zhu, Y., W. C. Hinds, S. Kim, S. Shen, and C. Sioutas. 2002. Study of Ultrafine Particles Near a Major Highway with Heavy-Duty Diesel Traffic. *Atmospheric Environment* 36:4323–4335.

Section 3.4, "Archaeological, Historical, and Tribal Cultural Resources"

Arnold, J. E., and A. P. Graesch. 2004. The Later Evolution of the Island Chumash. In *Foundations of Chumash Complexity*, ed. J. E. Arnold, 3–4. Los Angeles: Costen Institute of Archaeology, University of California, Los Angeles.

Bean, L. J. 1978. Social Organization. In *California*, ed. R. F. Heizer, 673–674. Volume 8, Handbook of North American Indians, gen. ed. W. G. Sturtevant. Washington, DC: Smithsonian Institution.

Bean, L. J., and S. Brakke Vane. 1978. Cults and Their Transformations. In *California*, ed. R. F. Heizer, 662–669. Volume 8, Handbook of North American Indians, gen. ed. W. G. Sturtevant. Washington, DC: Smithsonian Institution.

Bean, L. J., and C. R. Smith. 1978. Gabrielino. In *California*, ed. R. F. Heizer, 538. Volume 8, Handbook of North American Indians, gen. ed. W. G. Sturtevant. Washington, DC: Smithsonian Institution.

Beck, W. A., and Y. D. Haase. 1974. *Historical Atlas of California*. Norman, OK: University of Oklahoma Press.

California Department of Transportation. 2008. *A Historical Context and Archaeological Research Design for Mining Properties in California*. Division of Environmental Analysis. Sacramento, CA. Available:

http://www.dot.ca.gov/ser/downloads/cultural/work_camps_final.pdf. Accessed September 2016.

Caltrans. *See* California Department of Transportation

Castillo, E. D. 1978. The Impact of Euro-American Exploration and Settlement. In *California*, ed. R. F. Heizer, 99–109. Volume 8, Handbook of North American Indians, gen. ed. W. G. Sturtevant. Washington, DC: Smithsonian Institution.

Cook, S. A. 1976. *The Population of California Indians: 1769–1970*. Berkeley: University of California Press.

———. 1978. Historical Demography. In *California*, ed. R. F. Heizer, 91–98. Volume 8, Handbook of North American Indians, gen. ed. W. G. Sturtevant. Washington, DC: Smithsonian Institution.

d'Azevedo, W. (ed.). 1986. Handbook of North American Indians, Volume 11, *Great Basin*, ix. Washington, DC: Smithsonian Institution.

Erlandson, J. M., T. C. Rick, T. L. Jones, and J. F. Porcasi. 2007. One If by Land, Two If by Sea: Who Were the First Californians? In *California Prehistory: Colonization, Culture, and Complexity*, ed. T. L. Jones and K. A. Klar, 53–62. Lanham, MD: AltaMira Press.

Gilreath, A. J. 2007. Rock Art in the Golden State: Pictographs and Petroglyphs, Portable and Panoramic. In *California Prehistory: Colonization, Culture, and Complexity*, ed. T. L. Jones and K. A. Klar, 273–278. Lanham, MD: AltaMira Press.

Governor's Office of Planning and Research. 2005. *Tribal Consultation Guidelines: Supplement to General Plan Guidelines*. Available: http://opr.ca.gov/docs/011414_Updated_Guidelines_922.pdf. Accessed September 2016.

Heizer, R. F. 1978. Trade and Trails. In *California*, ed. R. F. Heizer, 690–693. Volume 8, Handbook of North American Indians, gen. ed. W. G. Sturtevant. Washington, DC: Smithsonian Institution.

Hoover, M. B., H. E. Rensch, E. G. Rensch, and W. N. Abeloe. 2002. *Historic Spots in California*. Fifth edition. Revised by D. E. Kyle, xiii, xiv, 105–106, 302. Palo Alto, CA: Stanford University Press.

Hughes, R. E., and R. Milliken. 2007. Prehistoric Material Conveyance. In *California Prehistory: Colonization, Culture, and Complexity*, ed. T. L. Jones and K. A. Klar, 259–271. Lanham, MD: AltaMira Press.

Jones, T. L., and K. A. Klar (eds.). 2007. *California Prehistory: Colonization, Culture, and Complexity*, 299–301, 303, 305, 306–307, 313. Lanham, MD: AltaMira Press.

Kroeber, A. L. 1922. Elements of Culture in Native California. *University of California Publications in American Archaeology and Ethnology* 13(8):278.

———. 1925. *Handbook of the Indians of California*. Bulletin 78, Bureau of American Ethnology, Smithsonian Institution, back cover, front cover. Washington, DC.: Government Printing Office. Reprinted 1976 by Dover Publications, New York.

Moratto, M. J. 1984. *California Archaeology*. New York: Academic Press.

National Park Service. 2017. *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings.* Revised by A. E. Grimmer. Available: https://www.nps.gov/tps/standards/treatment-guidelines-2017.pdf. Accessed June 3, 2019.

Ortiz, A. 1983. Key to Tribal Tributaries. In *Southwest*, ed. R. F. Heizer, viii–ix. Volume 10, Handbook of North American Indians, gen. ed. W. G. Sturtevant. Washington, DC.: Smithsonian Institution.

OPR. *See* Governor's Office of Planning and Research.

Rolle, W. F. 1969. *California: A History*. Second edition. Pages 74, 218–220, 252–253, 258–259. Thomas Y. Crowell Company.

Rondeau, M. F., J. Cassidy, and T. L. Jones. 2007. Colonization Technologies: Fluted Projectile Points and the San Clemente Island Woodworking/Microblade Complex. In *California Prehistory: Colonization, Culture, and Complexity*, ed. T. L. Jones and K. A. Klar, 63–70. Lanham, MD: AltaMira Press.

Schuyler, R. L. 1978. Indo-Euro-American Interaction: Archeological Evidence from Non-Indian Sites. In *California*, ed. R. F. Heizer, 69, 75. Volume 8, Handbook of North American Indians, gen. ed. W. G. Sturtevant. Washington, DC: Smithsonian Institution.

Shipley, W. F. 1978. Native Languages of California. In *California*, ed. R. F. Heizer. Volume 8, Handbook of North American Indians, gen. ed. W. G. Sturtevant, 80–81. Washington, DC: Smithsonian Institution.

Staniford, E. F. 1975. *The Pattern of California History*. San Francisco: Canfield Press.

Section 3.5, "Biological Resources"

California Department of Fish and Wildlife. 2015 (September). *California State Wildlife Action Plan: A Conservation Legacy for Californians*. 2015 Update. Ed. A. G. Gonzales and J. Hoshi. Prepared with assistance from Ascent Environmental, Sacramento, CA.

———. 2018. Natural Communities. Available: https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities#sensitive%20natural%20communities. Accessed January 9, 2018.

CDFW. *See* California Department of Fish and Wildlife.

Faber-Langendoen, D., J. Nichols, L. Master, K. Snow, A. Tomaino, R. Bittman, G. Hammerson, B. Heidel, L. Ramsay, A. Teucher, and B. Young. 2012. *NatureServe Conservation Status Assessments: Methodology for Assigning Ranks*. Arlington, VA: NatureServe.

McCreary, D. D. 2009. *Regenerating Rangeland Oaks in California*. University of California Agriculture and Natural Resources Publication 21601e. Oakland, CA.

State Water Resources Control Board. 2019 (March 22). State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State.

Technical Advisory Team. 2012. California Wetland and Riparian Area Protection Policy. Technical Memorandum No. 2: Wetland Definition. Produced by San Francisco Estuary Institute and Aquatic Science Center. Richmond, CA.

U.S. National Vegetation Classification. 2017. United States National Vegetation Classification Database, V2.01. Federal Geographic Data Committee, Vegetation Subcommittee, Washington DC. Available: http://usnvc.org/overview/. Accessed January 3, 2019.

USNVC. *See* U.S. National Vegetation Classification.

VegCAMP. 2018. *Survey of California Vegetation Classification and Mapping Standards*. Available: https://www.wildlife.ca.gov/Data/VegCAMP/Publications-and-Protocols. Accessed January 4, 2018.

Section 3.6, "Energy"

AFDC. *See* Alternative Fuels Data Center.

Agency for Toxic Substances and Disease Registry. 2001. Chapter 2, Landfill Gas Basics. In *Landfill Gas Primer: An Overview for Environmental Health Professionals*. Available: https://www.atsdr.cdc.gov/HAC/landfill/html/intro.html. Accessed May 19, 2019.

Alternative Fuels Data Center. 2019. California Transportation Data for Alternative Fuels and Vehicles. Available: https://afdc.energy.gov/states/ca. Accessed May 19, 2019.

ATSDR. *See* Agency for Toxic Substances and Disease Registry.

Cai, H., A. Burnham, M. Wang, W. Hang, and A. Vyas. 2015 (October). The GREET Model Expansion for Well-to-Wheels Analysis of Heavy-Duty Vehicles. Argonne National Laboratories, Energy Systems Division. Available: https://greet.es.anl.gov/publication-heavy-duty. Accessed May 15, 2019.

California Air Resources Board. 2008. Facts about the California Air Resources Board's Waste Collection Vehicle Regulation. Available: https://www.arb.ca.gov/msprog/swcv/trashtruck.pdf. Accessed June 5, 2019.

———. 2016. *California's Advanced Clean Cars Program.* Available: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program. Accessed May 20, 2019.

———. 2018. Truck and Bus Regulation Compliance Overview. Available: https://www.arb.ca.gov/msprog/onrdiesel/documents/fsregsum.pdf. Last updated November 30, 2018. Accessed May 17, 2019.

California Energy Commission. 2017. Total System Electric Generation in Gigawatt Hours. Available: https://www.energy.ca.gov/almanac/electricity_data/total_system_power.html. Accessed May 30, 2019.

———. 2018a (March). 2019 Building Energy Efficiency Standards (frequently asked questions). Available: http://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf. Accessed August 20, 2018.

———. 2018b (June 21). 2017 Total System Electric Generation in Gigawatt Hours. Available: http://www.energy.ca.gov/almanac/electricity_data/total_system_power.html. Accessed July 23, 2018.

———. 2019a (January). Renewable Energy – Overview. Available: https://www.energy.ca.gov/renewables/tracking_progress/documents/renewable.pdf. Accessed May 19, 2019.

———. 2019b. Biomass. Available: https://www.energy.ca.gov/biomass/. Accessed May 19, 2019.

California Energy Commission and California Air Resources Board. 2003 (August). *Reducing California's Petroleum Dependence*. Joint Agency Report. Available: https://www.arb.ca.gov/fuels/carefinery/ab2076final.pdf. Accessed May 20, 2019.

CARB. *See* California Air Resources Board.

CEC. *See* California Energy Commission.

CEC and CARB. *See* California Energy Commission and California Air Resources Board.

EESI. *See* Environmental and Energy Study Institute.

EIA. *See* U.S. Energy Information Administration.

Environmental and Energy Study Institute, 2017 (October). Fact Sheet—Biogas: Converting Waste to Energy. Available: https://www.eesi.org/papers/view/fact-sheet-biogasconverting-waste-to-energy. Accessed May 17, 2019.

EPA. *See* U.S. Environmental Protection Agency.

San Joaquin Valley Air Pollution Control District. 2013 (May 14). *Greenwaste Compost Site Emissions Reduction from Solar-Powered Aeration and Biofilter Layer*. Available: http://www.valleyair.org/grant_programs/TAP/documents/C-15636-ACP/C-15636_ACP_FinalReport.pdf. Accessed May 16, 2019.

SJVAPCD. *See* San Joaquin Valley Air Pollution Control District.

U.S. Energy Information Administration. 2019. Biomass Explained: Landfill Gas and Biogas. Available: https://www.eia.gov/energyexplained/index.php?page=biomass_biogas. Accessed May 17, 2019.

U.S. Environmental Protection Agency. 2016 (February). *Documentation for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM)*. *Background Chapters*. Available: https://www.epa.gov/sites/production/files/2016-03/documents/warm_v14_background.pdf. Accessed May 19, 2019.

———. 2019 (February). Landfill and project level data (Excel table). Available: https://www.epa.gov/lmop/landfill-technical-data. Accessed May 19, 2019.

Section 3.7, "Geology and Soils"

Bryant, W. A., and E. W. Hart. 2007. Fault Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps. Special Publication 42. California Geological Survey.

California Department of Water Resources. 2003. *California's Groundwater*. Bulletin 118 Update 2003 Report. Available: https://water.ca.gov/Programs/Groundwater-Management/Bulletin-118. Accessed November 17, 2011.

California Energy Commission. 2006 (April). *California Crude Oil Production and Imports.* Available: https://ww2.energy.ca.gov/2006publications/CEC-600-2006-016/CEC-600-2006-016.PDF. Accessed October 27, 2011.

———. 2019a. Supply and Demand of Natural Gas in California. Available: https://ww2.energy.ca.gov/almanac/naturalgas_data/overview.html. Accessed May 2, 2019.

———. 2019(b). Geothermal Energy in California. Available: http://www.energy.ca.gov/geothermal/background.html. Accessed July 11, 2019.

California Public Utilities Commission. 2011. Appendix I: Background Information on the Structures and Functioning of the Natural Gas Production and Delivery Systems That Serve California and the U.S. In *Natural Gas Market Study Report to Senator Escutia*. Available: http://docs.cpuc.ca.gov/published/REPORT/54261.htm. Accessed October 27, 2011.

CPUC. *See* California Public Utilities Commission.

Gius, F. W. 2016. California's Non-Fuel Mineral Production. California Geological Survey. Available: https://www.conservation.ca.gov/cgs/minerals/mineral-production. Accessed May 1, 2019.

CEC. *See* California Energy Commission.

DWR. *See* California Department of Water Resources.

Harden, D. 1997. *California Geology*. Englewood Cliffs, NJ: Prentice Hall.

Independent Petroleum Association of America. 2019. The Story of California Crude. Available: http://oilindependents.org/the-story-of-california-crude/. Accessed May 2, 2019.

IPAA. *See* Independent Petroleum Association of America.

Mount, J. F. 1995. *California Rivers and Streams: The Conflict between Fluvial Process and Land Use*. Berkeley: University of California Press.

State Water Resources Control Board. 1999. Appendix D: Soils, Hydrology, and Water Quality Technical Appendix. In *Draft Statewide Program Environmental Impact Report: General Waste Discharge Requirements for Biosolids Land Application*.

SWRCB. *See* California State Water Resources Control Board.

UCMP. *See* University of California Museum of Paleontology.

University of California Museum of Paleontology. 2019. Searchable online database of cataloged specimens. Available: https://ucmpdb.berkeley.edu/. Accessed May 14, 2019.

U.S. Geological Survey. 1995. Groundwater Atlas of the United States: California, Nevada. HA 730-B. Denver, CO. Available: http://pubs.usgs.gov/ha/ha730/ch_b/index.html. Accessed November 17, 2011.

———. 2004. Landslide Types and Processes. Fact Sheet 2004-3072. Available: http://pubs.usgs.gov/fs/2004/3072/fs-2004-3072.html. Accessed November 17, 2011.

USGS. *See* U.S. Geological Survey.

Section 3.8, "Greenhouse Gas Emissions and Climate Change"

Black, C., Y. Tesfaigzi, J. A. Bassein, and L. A. Miller. 2017. Wildfire Smoke Exposure and Human Health: Significant Gaps in Research for a Growing Public Health Issue. *Environmental Toxicology and Pharmacology*:186–195.

CalEPA. *See* California Environmental Protection Agency.

California Air Resources Board. 2016a (October). *2016 ZEV Action Plan.* Available: https://www.gov.ca.gov/wp-content/uploads/2017/09/2016_ZEV_Action_Plan.pdf. Accessed June 2019.

———. 2016b. *Facts about the Advanced Clean Cars Program.* Available: https://www.arb.ca.gov/msprog/zevprog/factsheets/advanced_clean_cars_eng.pdf. Accessed June 2019.

———. 2017a (November). *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target*. Available: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed June 2019.

———. 2017b (March). *Short-Lived Climate Pollutant Reduction Strategy*. Available: https://www.arb.ca.gov/cc/shortlived/meetings/03142017/final_slcp_report.pdf. Accessed June 2019.

———. 2018a. *SB 375 Regional Greenhouse Gas Emissions Reduction Targets*. Approved by the California Air Resources Board March 22, 2018. Available: https://www.arb.ca.gov/cc/sb375/finaltargets2018.pdf. Accessed June 2019.

———. 2018b (July 11). California Greenhouse Gas Emission Inventory. 2018 edition. Available: https://www.arb.ca.gov/cc/inventory/data/data.htm?utm_medium=email&utm_source=govdelivery. Accessed June 2019.

———. 2018c (July 11). *California Greenhouse Gas Emissions for 2000 to 2016: Trends of Emissions and Other Indicators*. Available: https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2016/ghg_inventory_trends_00-16.pdf. Accessed June 2019.

California Air Resources Board and California Environmental Protection Agency. 2017. Method for Estimating Greenhouse Gas Emission Reductions from Diversion of Organic Waste From Landfills to Compost Facilities. Available: https://www.arb.ca.gov/cc/waste/cerffinal.pdf. Accessed June 2019.

CalRecycle 2019a. *Initial Statement of Reasons for Short-lived Climate Pollutants (SLCP) Organic Waste Reductions Proposed Regulation Text. January 2019* Sacramento, CA

———. 2019b Email to Nanette Hansel at Ascent Environmental from Hank Brady of CalRecycle dated May 16, 2019 —summary of organic waste emission reduction factors

California Energy Commission. 2018 (March). *2019 Building Energy Efficiency Standards: Frequently Asked Questions*. Available: http://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf. Accessed June 2019.

California Environmental Protection Agency, California Natural Resources Agency, California Department of Food and Agriculture, California Air Resources Board, and California Strategic Growth Council. 2019 (January). *January 2019 Draft California 2030 Natural and Working Lands Climate Change Implementation Plan*. Available: https://www.arb.ca.gov/cc/natandworkinglands/draft-nwl-ip-1.7.19.pdf. Accessed June 2019.

California Natural Resources Agency. 2018 (January). *Safeguarding California Plan: 2018 Update.* Available: http://resources.ca.gov/docs/climate/safeguarding/update2018/safeguarding-california-plan-2018-update.pdf. Accessed June 2019.

CARB. *See* California Air Resources Board.

CEC. *See* California Energy Commission.

CNRA. *See* California Natural Resources Agency.

Cotton, Matt. Integrated Waste Management Consulting, Nevada City, CA. May 14, 2019—email regarding vehicle miles traveled to Nanette Hansel of Ascent Environmental.

EPA. *See* U.S. Environmental Protection Agency.

European Commission Joint Research Center. 2018 (March). Climate Change Promotes the Spread of Mosquito and Tick-Borne Viruses. *Science News.* Available: https://www.sciencedaily.com/releases/2018/03/180316111311.htm. Accessed June 2019.

Governor's Office of Planning and Research, California Energy Commission, and California Natural Resources Agency. 2018 (August 27). *California's Changing*

Climate: A Summary of Key Findings from California's Fourth Climate Change Assessment. Available: http://www.climateassessment.ca.gov/state/docs/20180827-SummaryBrochure.pdf. Accessed June 2019.

Intergovernmental Panel on Climate Change. 2013. Chapter 6, Carbon and Other Biogeochemical Cycles. Pages 465–570 in *Climate Change 2013: The Physical Science Basis*. Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Available: http://www.climatechange2013.org/images/report/WG1AR5_ALL_FINAL.pdf. Accessed June 2019.

———. 2014. *Climate Change 2014 Synthesis Report: Summary for Policymakers*. Available: https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf. Accessed June 2019.

———. 2016. Global Warming Potential Values. Available: https://www.ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf. Accessed June 2019.

IPCC. *See* Intergovernmental Panel on Climate Change.

Lister, B. C., and A. Garcia. 2018 (September). Climate-Driven Declines in Arthropod Abundance Restructure a Rainforest Food Web. *Proceedings of the National Academy of Sciences of the United States* 115(44):E10397–E10406. Available: https://www.pnas.org/content/pnas/115/44/E10397.full.pdf. Accessed June 2019.

McKibben, B. 2018 (November 26). How Extreme Weather Is Shrinking the Planet. *The New Yorker.* Available: https://www.newyorker.com/magazine/2018/11/26/how-extreme-weather-is-shrinking-the-planet. Accessed June 2019.

National Highway Traffic Safety Administration. 2018 (August 24). The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Year 2021–2026 Passenger Cars and Light Trucks. Federal Register Vol. 83 (165). Pp. 42986–43500. Available: https://www.govinfo.gov/content/pkg/FR-2018-08-24/pdf/2018-16820.pdf. Accessed July 2019.

NHTSA. *See* National Highway Traffic Safety Administration.

OPR. *See* Governor's Office of Planning and Research.

Qualman, D. 2017 (January 24). Turning Fossil Fuels into Fertilizer into Food into Us: Historic Nitrogen Fertilizer. Available: https://www.darrinqualman.com/historic-nitrogen-fertilizer-consumption/. Accessed June 2019.

Rosenstock, T., D. Liptzin, J. Six, and T. P. Tomich. 2013. Nitrogen Fertilizer Use in California: Assessing the Data, Trends, and a Way Forward. *California Agriculture* 67(1). Available: http://calag.ucanr.edu/Archive/?article=ca.E.v067n01p68. Accessed June 2019.

Sacramento Metropolitan Air Quality Management District. 2018. CEQA Guidelines Tools—Greenhouse Gas Emissions. Available: http://www.airquality.org/LandUseTransportation/Documents/Ch6GHGFinal5-2018.pdf. Accessed June 2019.

SCAQMD. *See* South Coast Air Quality Management District.

SMAQMD. *See* Sacramento Metropolitan Air Quality Management District.

South Coast Air Quality Management District. 2008. Draft Guidance Document – Interim CEQA Greenhouse Gas Significance Threshold. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf. Accessed June 2019.

State of California. 2018. California Climate Change Legislation. Available: http://www.climatechange.ca.gov/state/legislation.html. Accessed June 2019.

United Nations. 2015. Paris Agreement. Available: https://unfccc.int/sites/default/files/english_paris_agreement.pdf. Accessed June 2019.

U.S. Environmental Protection Agency. 2018 (April 2). *EPA Administrator Pruitt: GHG Emissions Standards for Cars and Light Trucks Should be Revised*. Available: https://www.epa.gov/newsreleases/epa-administrator-pruitt-ghg-emissions-standards-cars-and-light-trucks-should-be. Accessed June 2019.

Wade, Samuel. Branch chief. Transportation Fuels Branch, Industrial Strategies Division, California Air Resources Board, Sacramento, CA. June 30, 2017—e-mail to Austin Kerr of Ascent Environmental regarding whether the Low Carbon Fuel Standard applies to fuels used by off-road construction equipment.

Section 3.9, "Hazards and Hazardous Materials"

Biogas World. 2019 (April). Safety Precautions for Anaerobic Digestion Systems. Available: https://www.biogasworld.com/news/safety-precautions-anaerobic-digestion-systems/. Accessed June 3, 2019.

California Department of Resources Recycling and Recovery. 2019 (June). Pests Which Affect Green Material Movement in California. Available: https://www.calrecycle.ca.gov/Organics/Threats/. Accessed June 4, 2019.

California Department of Toxic Substances Control. 2019. EnviroStor Database. Available: https://www.envirostor.dtsc.ca.gov/public/. Accessed May 31, 2019.

California Department of Transportation. 2011. California Airport Land Use Planning Handbook. Available: http://www.dot.ca.gov/hq/planning/aeronaut/documents/alucp/AirportLandUsePlanningHandbook.pdf. Accessed June 2019.

California Geological Survey. 2002. *Guidelines for Geologic Investigations of Naturally Occurring Asbestos in California*. SP 214.

CalRecycle. *See* California Department of Resources Recycling and Recovery.

Caltrans. *See* California Department of Transportation.

Churchill, R. K., and R. L. Hill. 2000. *A General Location Guide for Ultramafic Rocks in California—Areas More Likely to Contain Naturally Occurring Asbestos*. California Division of Mines and Geology Open-File Report 2000-19.

DTSC. *See* California Department of Toxic Substances Control.

FAA. *See* Federal Aviation Administration.

Federal Aviation Administration. 2007 (August). Advisory Circular: Hazardous Wildlife Attractants on or near Airports. AC No: 15/5200-33B.

State Water Resources Control Board. 2019. Geotracker database. Available: https://geotracker.waterboards.ca.gov/search. Accessed May 29, 2019.

SWRCB. *See* State Water Resources Control Board.

Section 3.10, "Hydrology and Water Quality"

California Department of Water Resources. 1998. *The California Water Plan Update: Department of Water Resources, Bulletin 160-98*. Available: https://water.ca.gov/LegacyFiles/pubs/planning/california_water_plan_1998_update__bulletin_160-98_/b16098_vol1.pdf. Accessed March 11, 2019.

———. 2003. *California's Groundwater*. Bulletin 118 Update 2003 Report. Available: https://water.ca.gov/Programs/Groundwater-Management/Bulletin-118. Accessed November 17, 2011.

———. 2012. (June). *2012 Central Valley Flood Protection Plan*. Sacramento, CA.

———. 2016 (December 22). *California's Groundwater: Bulletin 118 Interim Update 2016*. Available: https://water.ca.gov/LegacyFiles/groundwater/bulletin118/docs/Bulletin_118_Interim_Update_2016.pdf.

———. 2019. Statewide Map of SGMA 2019 Basin Prioritization Results. Available: https://data.cnra.ca.gov/dataset/13ebd2d3-4e62-4fee-9342-d7c3ef3e0079/resource/aa480726-e92c-421c-bd7c-3f2ffece1e19/download/sgma_bp_statewide_map.pdf. Accessed July 2019.

DWR. *See* California Department of Water Resources.

EPA. *See* U.S. Environmental Protection Agency.

Harter, T. 2003. Groundwater Quality and Groundwater Pollution. ANR Publication 8084. Division of Agriculture and Natural Resources, University of California,

Davis. Available: https://anrcatalog.ucanr.edu/pdf/8084.pdf. Accessed March 11, 2019.

Mount, J.F. 1995. California Rivers and Streams: The Conflict between Fluvial Process and Land Use, University of California Press: Berkeley, CA.

State Water Resources Control Board. 2015. Environmental Impact Report, General Waste Discharge Requirements for Composting Operations

———. 2018. Implementation of General Waste Discharge Requirements for Composting Operations (Order WQ 2015-0121-DWQ), Report to the State Water Resources Control Board.

SWRCB. *See* State Water Resources Control Board.

U.S. Environmental Protection Agency. 1993. *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters*. EPA 840-B-92-002. Office of Water. Washington, DC. Available: https://www.epa.gov/sites/production/files/2015-09/documents/czara_chapter1_introduction.pdf. Accessed March 11, 2019.

U.S. Geological Survey. 1995. Groundwater Atlas of the United States: California, Nevada. HA 730-B. Denver, CO. Available: http://pubs.usgs.gov/ha/ha730/ch_b/index.html. Accessed November 17, 2011.

USGS. *See* U.S. Geological Survey.

Section 3.11, "Land Use and Planning"

No sources were cited in this section.

Section 3.12, "Noise"

Airport Authority. 2019. List of All Airports in California. Available: https://airport-authority.com/browse-US-CA. Accessed May 30, 2019.

California Department of Transportation. 2013a (September). *Transportation and Construction Vibration Guidance Manual*. Noise, Division of Environmental Analysis. Sacramento, CA.

———. 2013b (September). *Technical Noise Supplement.* Division of Environmental Analysis. Sacramento, CA. Prepared by ICF Jones & Stokes.

Caltrans. *See* California Department of Transportation

Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. Washington, DC. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf. Accessed April 4, 2017.

FTA. *See* Federal Transit Administration.

Governor's Office of Planning and Research. 2017 (August). *State of California General Plan Guidelines*. Sacramento, CA. Available: http://opr.ca.gov/docs/OPR_COMPLETE_7.31.17.pdf. Accessed May 14, 2019.

OPR. *See* Governor's Office of Planning and Research.

Section 3.13, "Transportation"

Brady, Hank. Staff services manager. California Department of Resources Recycling and Recovery, Sacramento, CA. May 28, 2019—memorandum regarding CalRecycle's summary of findings relative to transportation emissions.

California Department of Resources Recycling and Recovery. 2019 (April 29). *SB 1383 Infrastructure and Market Analysis Report*. Contractor's report produced under contract by Integrated Waste Management Consulting. Available: https://www2.calrecycle.ca.gov/Publications/Details/1652. Accessed May 14, 2019.

California Department of Transportation. 2015 (November). *Transportation Management Plan Guidelines*. Division of Traffic Operations Office of Traffic Management. Available: https://dot.ca.gov/programs/traffic-operations/tmp. Accessed May 1, 2019.

———. 2019 (March). *California Manual on Uniform Traffic Control Devices*. Prepared by California State Transportation Agency and California Department of Transportation. Available: https://dot.ca.gov/programs/traffic-operations/camutcd. Accessed May 6, 2019.

CalRecycle. *See* California Department of Resources Recycling and Recovery.

Caltrans. *See* California Department of Transportation.

Governor's Office of Planning and Research. 2018 (December). *Technical Advisory on Evaluating Transportation Impacts in CEQA*. Available: http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf. Accessed May 1, 2019.

OPR. *See* Governor's Office of Planning and Research.

Section 3.14, "Utilities and Service Systems"

No sources were cited in this section.

Section 3.15, "Wildfire"

Abatzoglou, J. T., and A. P. Williams. 2016 (October 16). Impact of Anthropogenic Climate Change on Wildfire across Western U.S. Forests. *Proceedings of the National Academy of Sciences* 113(42):11770–11775.

Balch, J. K., B. A. Bradley, J. T. Abatzoglou, R. C. Nagy, E. J. Fusco, and A. L. Mahood. 2017 (March 14). Human-Started Wildfires Expand the Fire Niche across the

United States. *Proceedings of the National Academy of Sciences* 114(11):2946–2951.

Board and CAL FIRE. *See* Board of Forestry and Fire Protection and California Department of Forestry and Fire Protection.

Board of Forestry and Fire Protection and California Department of Forestry and Fire Protection. 2018 (August 22). *2018 Strategic Fire Plan for California*.

CAL FIRE. *See* California Department of Forestry and Fire Protection.

California Department of Forestry and Fire Protection. 2016. *2016 Historical Wildfire Activity Statistics*. Sacramento, CA.

———. 2018a. California Wildfires and Acres for All Jurisdictions [chart]. Incident Information. Available: http://cdfdata.fire.ca.gov/pub/cdf/images/incidentstatsevents_269.pdf. Accessed May 3, 2019.

———. 2018b. Number of Fires and Acres (2018) [chart]. Incident Information. Available: http://cdfdata.fire.ca.gov/incidents/incidents_stats?year=2018. Accessed May 3, 2019.

———. 2018c. Number of Fires and Acres (2017) [chart]. Incident Information. Available: http://cdfdata.fire.ca.gov/incidents/incidents_stats?year=20187. Accessed May 3, 2019.

———. 2019. Top 20 Largest California Wildfires [chart]. Protection Incident Information. Available: http://www.fire.ca.gov/communications/downloads/fact_sheets/Top20_Acres.pdf. Accessed April 10, 2019.

California Office of Emergency Services. 2017 (October 1). *State of California Emergency Plan.* Available: https://www.caloes.ca.gov/PlanningPreparednessSite/Documents/California_State_Emergency_Plan_2017.pdf. Accessed June 6, 2019.

Cal OES. *See* California Office of Emergency Services.

Carey, H., and M. Schumann. 2003 (April). *Modifying Wildfire Behavior—The Effectiveness of Fuel Treatments: The Status of Our Knowledge*. National Community Forestry Center.

Coker, C. 2019 (January). Managing Compost and Mulch Fires. *BioCycle* 60(1):26. Available: https://www.biocycle.net/2019/01/04/managing-compost-mulch-fires/. Accessed June 6, 2019.

Governor's Office of Planning and Research. 2015 (May). *Fire Hazard Planning: General Plan Technical Advice Series*.

Governor's Office of Planning and Research, California Energy Commission, and California Natural Resources Agency. 2018 (August). *California's Fourth Climate Change Assessment, Statewide Summary Report*.

Headwaters Economics. 2018 (December). Communities Utilize Land Use Planning to Reduce Wildfire Risks and Costs. Available: https://headwaterseconomics.org/wildfire/solutions/cpaw/. Accessed May 3, 2019.

Loudermilk, E. L., A. Stanton, R. M. Scheller, T. E. Dilts, P. J. Weisberg, C. Skinner, and J. Yang. 2014. Effectiveness of Fuel Treatments for Mitigating Wildfire Risk and Sequestering Forest Carbon: A Case Study in the Lake Tahoe Basin. *Forest Ecology and Management* 323:114–125.

Mann, M. L., E. Batllori, M. A. Moritz, E. K. Waller, P. Berck, A. L. Flint, L. E. Flint, and E. Dolfi. 2016 (April 28). Incorporating Anthropogenic Influences into Fire Probability Models: Effects of Human Activity and Climate Change on Fire Activity in California. *PLoS One* 11(4):e0153589.

OPR. *See* Governor's Office of Planning and Research.

Prichard, S. J., D. L. Peterson, and K. Jacobson. 2010 (July 24). Fuel Treatments Reduce the Severity of Wildfire Effects in Dry Mixed Conifer Forest, Washington, USA. *Canadian Journal of Forest Research* 40(8):1615–1626.

Schoennagel, T., J. K. Balch, H. Brenkert-Smith, P. E. Dennison, B. J. Harvey, M. A. Krawchuck, N. Mietkiewicz, P. Morgan, M. A. Moritz, R. Rasker, M. G. Turner, and C. Whitlock. 2017 (May 2). Adapt to More Wildfire in Western North American Forests as Climate Changes. *Proceedings of the National Academy of Sciences* 114(18):4582–4590.

Syphard, A. D., V. C. Radeloff, J. E. Keeley, T. J. Hawbaker, M. K. Clayton, S. I. Stewart, and R. B. Hammer. 2007. Human Influence on California Fire Regimes. *Ecological Applications* 17(5):1388–1402.

Syphard, A. D., V. C. Radeloff, N. S. Keuler, R. S. Taylor, T. J. Hawbaker, S. I. Stewart, and M. K. Clayton. 2008. Predicting Spatial Patterns of Fire on a Southern California Landscape. *International Journal of Wildland Fire* 17:602–613.

University of Nevada. 2010 (October). *Fire Adapted Communities: The Next Step in Wildfire Preparedness*.

U.S. Forest Service. 2009 (July). *Fuel Treatments, Fire Suppression, and Their Interactions with Wildfire and Its Effects: The Warm Lake Experience during the Cascade Complex of Wildfires in Central Idaho, 2007*. General Technical Report RMRS-GTR-229. Fort Collins, CO.

USFS. *See* U.S. Forest Service.

Westerling, A. L., H. G. Hidalgo, D. R. Cayan, and T. W. Swetnam. 2006 (August 18). Warming and Earlier Spring Increase Western U.S. Forest Wildfire Activity. *Science* 313(5789):940–943.

Chapter 4, "Cumulative Impacts"

California Energy Commission. 2017 (January). *Renewables Portfolio Standard Eligibility*. Ninth edition. CEC-300-2016-006-ED9-CMF-REV.

Intergovernmental Panel on Climate Change. 2018. Working Group 1 Fifth Assessment, Chapter 2, Anthropogenic and Natural Radiative Forcing. Available: https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf. Accessed May 20, 2019.

IPCC. *See* Intergovernmental Panel on Climate Change.

State Water Resources Control Board. 2018. Implementation of General Waste Discharge Requirements for Composting Operations (Order WQ 2015-0121-DWQ), Report to the State Water Resources Control Board.

SWRCB. *See* State Water Resources Control Board.

Chapter 5, "Alternatives"

Roth, K. 2019 (March 20). Is Your Kitchen-Sink Disposal Environmentally Friendly? AP News. Available: https://www.apnews.com/32d56555e90d4190918339c91cc59da1.

Chapter 6, "Other CEQA Considerations"

California Department of Resources Recycling and Recovery. 2018. *Proposed Regulation for Short-Lived Climate Pollutants: Organic Waste Methane Emissions. Standardized Regulatory Impact Assessment (SRIA)*.

CalRecycle. *See* California Department of Resources Recycling and Recovery.

Appendix A

Criteria Air Pollutant
Thresholds of Significance and
Attainment Designations

CEQA Thresholds of Significance (Criteria Air Pollutants)

Air District	ROG Construction	ROG Operational	NO_X Construction	NO_X Operational	PM_{10} Construction	PM_{10} Operational	$PM_{2.5}$ Construction	$PM_{2.5}$ Operational	SO_X Construction	SO_X Operational	CO Construction	CO Operational
Amador County APCD	No thresholds	No thresholds	No thresholds	No thresholds	No thresholds	No thresholds	No thresholds	No thresholds	No thresholds	No thresholds	No thresholds	No thresholds
Antelope Valley APCD* (North Los Angeles County)	137 lb/day or 25 tpy	137 lb/day or 25 tpy	137 lb/day or 25 tpy	137 lb/day or 25 tpy	82 lb/day or 15 tpy	82 lb/day or 15 tpy	65 lb/day or 12 tpy	65 lb/day or 12 tpy	137 lb/day or 25 tpy	137 lb/day or 25 tpy	548 lb/day or 100 tpy	548 lb/day or 100 tpy
Bay Area AQMD (Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Southern Sonoma, and Southwest Solano County)	54 lb/day	54 lb/day 10 tpy	54 lb/day	54 lb/day or 10 tpy	82 lb/day (exhaust) BMPs for fugitive dust	82 lb/day or 15 tpy None for fugitive dust	54 lb/day (exhaust) BMPs for fugitive dust	54 lb/day or 10 tpy None for fugitive dust	No threshold	No threshold	No threshold	9.0 ppm (8-hour average, 20.0 ppm (1-hour average)
Butte County AQMD	137 lb/day or 4.5 tpy	25 lb/day	137 lb/day or 4.5 tpy	25 lb/day	80 lb/day	80 lb/day	80 lb/day	80 lb/day	No threshold	No threshold	No threshold	No threshold
Calaveras County ACPD	150 lb/day	150 lb/day	150 lb/day	150 lb/day	150 lb/day	150 lb/day	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold
Colusa County APCD	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold
Eastern Kern APCD	No threshold	137 lb/day (mobile source emissions)	No threshold	137 lb/day (mobile source emissions)	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold
El Dorado County AQMD*	82 lb/day	82 lb/day	82 lb/day	82 lb/day	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold
Feather River AQMD (Sutter and Yuba County)	25 lb/day multiplied by project length; not to exceed 4.5 tpy	25 lb/day	25 lb/day multiplied by project length; not to exceed 4.5 tpy	25 lb/day	80 lb/day	80 lb/day	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold
Glenn County APCD	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold
Great Basin Unified APCD (Inyo, Mono, and Alpine County)	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold
Imperial County APCD	Implement mitigation	137 lb/day	Implement mitigation	137 lb/day	Implement mitigation	150 lb/day	Implement mitigation	550 lb/day	Implement mitigation	150 lb/day	Implement mitigation	550 lb/day
Lake County AQMD	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold
Lassen County APCD	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold

Air District	ROG Construction	ROG Operational	NO_X Construction	NO_X Operational	PM_{10} Construction	PM_{10} Operational	$PM_{2.5}$ Construction	$PM_{2.5}$ Operational	SO_X Construction	SO_X Operational	CO Construction	CO Operational
Mariposa County APCD	100 tpy	100 tpy	100 tpy	100 tpy	100 tpy	100 tpy	100 tpy	100 tpy	100 tpy	100 tpy	100 tpy	100 tpy
Mendocino County AQMD[1]	No threshold	40 tpy (stationary)	No threshold	40 tpy (stationary)	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold
Modoc County APCD	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold
Mojave Desert AQMD* (North Eastern San Bernardino and Eastern Riverside County)	137 lb/day or 25 tpy	137 lb/day or 25 tpy	137 lb/day or 25 tpy	137 lb/day or 25 tpy	82 lb/day or 15 tpy	82 lb/day or 15 tpy	65 lb/day or 12 tpy	65 lb/day or 12 tpy	137 lb/day or 25 tpy	137 lb/day or 25 tpy	548 lb/day or 100 tpy	548 lb/day or 100 tpy
Monterey Bay Unified APCD (Santa Cruz, Monterey, and San Benito County)	No threshold	137 lb/day	No threshold	137 lb/day	82 lb/day	82 lb/day	No threshold	No threshold	No threshold	150 lb/day	No threshold	550 lb/day
North Coast Unified AQMD (Del Norte, Humboldt, and Trinity County)	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold
Northern Sierra AQMD* (Nevada, Sierra, and Plumas County)	<24 lb/day (Level A) 24-136 lb/day (Level B) >136 lb/day (Level C)	<24 lb/day (Level A) 24-136 lb/day (Level B) >136 lb/day (Level C)	<24 lb/day (Level A) 24-136 lb/day (Level B) >136 lb/day (Level C)	<24 lb/day (Level A) 24-136 lb/day (Level B) >136 lb/day (Level C)	<79 lb/day (Level A) 79-136 lb/day (Level B) >136 lb/day (Level C)	<79 lb/day (Level A) 79-136 lb/day (Level B) >136 lb/day (Level C)	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold
Northern Sonoma County AQMD	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold
Placer County APCD	82 lb/day	55 lb/day	82 lb/day	55 lb/day	82 lb/day	55 lb/day	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold
Sacramento Metropolitan AQMD	No threshold	65 lb/day	85 lb/day	65 lb/day	80 lb/day or 14.6 tpy (following application of all feasible BMPs)	80 lb/day or 14.6 tpy (following application of all feasible BMPs)	82 lb/day or 15 tpy (following application of all feasible BMPs)	82 lb/day or 15 tpy (following application of all feasible BMPs)	Concentrations below CAAQS for SO_X	Concentrations below CAAQS for SO_X	Concentrations below CAAQS for CO	Concentrations below CAAQS for CO
San Diego County APCD*	75 lb/day or 13.7 tpy	75 lb/day or 13.7 tpy	25 lb/hour, 250 lb/day, or 40 tpy	25 lb/hour, 250 lb/day, or 40 tpy	100 lb/day or 15 tpy	100 lb/day or 15 tpy	55 lb/day or 10 tpy	55 lb/day or 10 tpy	25 lb/hour, 250 lb/day, or 40 tpy	25 lb/hour, 250 lb/day, or 40 tpy	100 lb/hour, 550 lb/day, or 100 tpy	100 lb/hour, 550 lb/day, or 100 tpy

Air District	ROG Construction	ROG Operational	NO_X Construction	NO_X Operational	PM_{10} Construction	PM_{10} Operational	$PM_{2.5}$ Construction	$PM_{2.5}$ Operational	SO_X Construction	SO_X Operational	CO Construction	CO Operational
San Joaquin Valley APCD (San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and Western Kern County)	10 tpy	10 tpy	10 tpy	10 tpy	15 tpy	15 tpy	15 tpy	15 tpy	27 tpy	27 tpy	100 tpy	100 tpy
San Luis Obispo County APCD[2]	137 lb/day or 2.5 tons per quarter	137 lb/day or 2.5 tons per quarter	25 lb/day or 25 tpy	25 lb/day or 25 tpy	No threshold	25 lb/day or 25 tpy	No threshold	No threshold	No threshold	No threshold	No threshold	550 lb/day
Santa Barbara County APCD	No threshold	>25 lb/day from mobile sources	No threshold	>25 lb/day from mobile sources	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold
Shasta County AQMD*	25 lb/day (Level A) or 137 lb/day (Level B)	25 lb/day (Level A) or 137 lb/day (Level B)	25 lb/day (Level A) or 137 lb/day (Level B)	25 lb/day (Level A) or 137 lb/day (Level B)	80 lb/day (Level A) or 137 lb/day (Level B)	80 lb/day (Level A) or 137 lb/day (Level B)	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold
Siskiyou County APCD	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold
South Coast AQMD (Southwest San Bernardino, South Los Angeles, Orange, and Western Riverside County)	75 lb/day	55 lb/day	100 lb/day	55 lb/day	150 lb/day	150 lb/day	55 lb/day	55 lb/day	150 lb/day	150 lb/day	550 lb/day	55 lb/day
Tehama County APCD*	≤25 lb/day (Level A/MND or ND) >25 lb/day (Level B/MND or EIR) >137 lb/day (Level C/EIR)	≤25 lb/day (Level A/MND or ND) >25 lb/day (Level B/MND or EIR) >137 lb/day (Level C/EIR)	≤25 lb/day (Level A/MND or ND) >25 lb/day (Level B/MND or EIR) >137 lb/day (Level C/EIR)	≤25 lb/day (Level A/MND or ND) >25 lb/day (Level B/MND or EIR) >137 lb/day (Level C/EIR)	≤80 lb/day (Level A/MND or ND) >80 lb/day (Level B/MND or EIR) >137 lb/day (Level C/EIR)	≤80 lb/day (Level A/MND or ND) >80 lb/day (Level B/MND or EIR) >137 lb/day (Level C/EIR)	No threshold	No threshold	No threshold	No threshold	No threshold	No threshold
Tuolumne County APCD*	1,000 lb/day or 100 tpy	1,000 lb/day or 100 tpy	1,000 lb/day or 100 tpy	1,000 lb/day or 100 tpy	1,000 lb/day or 100 tpy	1,000 lb/day or 100 tpy	No threshold	No threshold	No threshold	No threshold	1,000 lb/day or 100 tpy	1,000 lb/day or 100 tpy

Air District	ROG Construction	ROG Operational	NO_X Construction	NO_X Operational	PM_{10} Construction	PM_{10} Operational	$PM_{2.5}$ Construction	$PM_{2.5}$ Operational	SO_X Construction	SO_X Operational	CO Construction	CO Operational
Ventura County APCD*	25 lb/day (Ventura County minus Ojai and Simi Valley planning areas) 5 lb/day (Ojai planning area) 13.7 tpy (Simi Valley)	25 lb/day (Ventura County minus Ojai and Simi Valley planning areas) 5 lb/day (Ojai planning area) 13.7 tpy (Simi Valley)	25 lb/day (Ventura County minus Ojai and Simi Valley planning areas) 5 lb/day (Ojai planning area) 13.7 tpy (Simi Valley)	25 lb/day (Ventura County minus Ojai and Simi Valley planning areas) 5 lb/day (Ojai planning area) 13.7 tpy (Simi Valley)	25 lb/day (Ventura County minus Ojai and Simi Valley planning areas) 5 lb/day (Ojai planning area) 13.7 tpy (Simi Valley)	25 lb/day (Ventura County minus Ojai and Simi Valley planning areas) 5 lb/day (Ojai planning area) 13.7 tpy (Simi Valley)	25 lb/day (Ventura County minus Ojai and Simi Valley planning areas) 5 lb/day (Ojai planning area) 13.7 tpy (Simi Valley)	25 lb/day (Ventura County minus Ojai and Simi Valley planning areas) 5 lb/day (Ojai planning area) 13.7 tpy (Simi Valley)	No threshold	No threshold	No threshold	No threshold
Yolo-Solano AQMD* (Yolo and Eastern Solano County)	10 tpy	10 tpy	10 tpy	10 tpy	80 lb/day	80 lb/day	No threshold	No threshold	No threshold	No threshold	Violation of CAAQS for CO	Violation of CAAQS for CO

* Thresholds of Significance within these air districts are not specific to construction or operational emissions of criteria air pollutants. Thresholds of significance may apply to both activities.

[1] MCAQMD thresholds for ROG and NO_X only apply to stationary sources of criteria air pollutants and would not apply to treatment activities under Cal VTP.

[2] SLCAPCD also lists a threshold of significance for operational diesel PM of 1.25 lb/day

Sources: AVAQMD 2016; BAAQMD 2017; BCAQMD 2014; CCAPCD 2018; EDCAPCD 2002 ; FRAQMD 2010; ICAPCD 2017; KCAPCD 1996; MCAQMD 2013; MCAPCD [No Date]; MDAQMD 2016; MBUAPCD 2008; NSAQMD 2009; PCAPCD 2016; SBCAPCD 2015; SDCAPCD 2007; SLOCAPCD 2012; SCAQMD 2015; SJVAPCD 2015; SMAQMD 2015; Tuolumne County APCD; VCAPCD 2003; YSAQMD 2007

References

AVAQMD. 2016. CEQA and Federal Conformity Guidelines. Available: https://avaqmd.ca.gov/files/e5b34d385/AV+CEQA+Guides+2016.pdf. Accessed January 2019.

BAAQMD. 2017. CEQA Air Quality Guidelines. Available: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed January 2019.

BCAQMD. 2014. CEQA Air Quality Handbook. Available: https://bcaqmd.org/wp-content/uploads/CEQA-Handbook-Appendices-2014.pdf. Accessed January 2019.

CCAPCD. 2018. Calaveras County Draft General Plan Environmental Impact Report: Section 4.3 Air Quality and Greenhouse Gas Emissions. Available: http://planning.calaverasgov.us/Portals/Planning/Documents/Draft%20General%20Plan%20Update/CEQA/4_3_Air%20Quality%20and%20GHG%20Emissions.pdf. Accessed January 2019.

EDCAPCD. 2002. El Dorado County APCD – CEQA Guide First Edition – February 2002. Chapter 3 Thresholds of Significance. Available: https://www.edcgov.us/Government/AirQualityManagement/documents/Chapter3_RF6.pdf. Accessed January 2019.

FRAQMD. 2010. Indirect Source Review Guidelines: A Technical Guide to Assess the Air Quality Impact of Land Use Projects Under CEQA. Available: https://www.fraqmd.org/files/8c3d336a1/FINAL+version+ISR+Amendments.pdf. Accessed January 2019.

ICAPCD. 2017. CEQA Air Quality Handbook: Guidelines for the Implementation of CEQA as Amended. Available: https://www.co.imperial.ca.us/AirPollution/PlanningDocs/CEQAHandbk.pdf. Accessed January 2019.

KCAPCD. 1996. Guidelines for Implementation of CEQA as Amended. Available: http://www.kernair.org/Documents/CEQA/CEQA_Guidelines%20&%20Charts.pdf. Accessed January 2019.

MCAQMD. 2013. District Interim CEQA Criteria and GHG Pollutant Thresholds. Available: http://www.co.mendocino.ca.us/aqmd/pdf_files/ceqa-criteria-and-ghg.pdf. Accessed January 2019.

MCAPCD. [No Date]. County of Mariposa General Plan—Volume IV Environmental Impact Report: Section 4.8 Air Quality. Available: https://www.mariposacounty.org/DocumentCenter/View/59902/AP-Threshold-General-Plan-Volume-IV-48?bidId=. Accessed January 2019.

MDAQMD. 2016. CEQA and Federal Conformity Guidelines. Available: http://mbard.org/pdf/CEQA_full%20(1).pdf. Accessed January 2019.

MBUAPCD. 2008. CEQA Air Quality Guidelines. Available: http://mbard.org/pdf/CEQA_full%20(1).pdf. Accessed January 2019.

NSAQMD. 2009. Guidelines for Assessing and Mitigating Air Quality Impacts of Land Use Projects. Available: https://www.mynevadacounty.com/DocumentCenter/View/15131/NSAQMD-Attachment-Land-Use-Guidelines-PDF. Accessed January 2019.

PCAPCD. 2016. Placer County Air Pollution Control District Policy Review of Land Use Projects Under CEQA. Available: http://www.placerair.org/landuseandceqa/ceqathresholdsandreviewprinciples. Accessed January 2019.

SBCAPCD. 2015. Environmental Review Guidelines for the Santa Barbara County Air Pollution Control District. Available: https://www.ourair.org/wp-content/uploads/APCDCEQAGuidelinesApr2015.pdf. Accessed January 2019.

SDCAPCD. 2007. County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements: Air Quality. Available: https://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/docs/AQ-Guidelines.pdf. Accessed January 2019.

SLOCAPCD. 2012. CEQA Air Quality Handbook: A Guide for Assessing the Air Quality Impacts for Projects Subject to CEQA Review. Available: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20November%202018%29_LinkedwithMemo.pdf. Accessed January 2019.

SCAQMD. 2015. SCAQMD Air Quality Significance Thresholds. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2. Accessed January 2019.

SJVAPCD. 2015. San Joaquin Valley Air Pollution Control District Air Quality Thresholds of Significance—Criteria Air Pollutants. Available: http://www.valleyair.org/transportation/0714-GAMAQI-Criteria-Pollutant-Thresholds-of-Significance.pdf. Accessed January 2019.

SMAQMD. 2015. SMAQMD Thresholds of Significance Table. Available: http://www.airquality.org/LandUseTransportation/Documents/CH2ThresholdsTable5-2015.pdf. Accessed January 2019.

Tehama County APCD. 2015. Available: http://tehcoapcd.net/PDF/CEQA%20Handbook%20Mar%202015%20Final.pdf. Accessed January 2019.

Tuolumne County APCD. [No Date]. Tuolumne County Air Pollution Control District CEQA Thresholds of Significance. Available: https://www.tuolumnecounty.ca.gov/DocumentCenter/View/1072/TCAPCD_Significance_Thresholds__2_?bidId=. Accessed January 2019.

VCAPCD. 2003. Ventura County Air Quality Assessment Guidelines. Available: http://www.vcapcd.org/pubs/Planning/VCAQGuidelines.pdf. Accessed January 2019.

YSAQMD. 2007. Handbook for Assessing and Mitigating Air Quality Impacts. Available: https://www.ysaqmd.org/plans-data/ceqa/. Accessed January 2019.

Attainment Designations for Criteria Pollutants and Ozone Precursors by County, Statewide

County	Ozone CAAQS	Ozone NAAQS	CO CAAQS	CO NAAQS	NO_2 CAAQS	NO_2 NAAQS	SO_2 CAAQS	SO_2 NAAQS	PM_{10} CAAQS	PM_{10} NAAQS	$PM_{2.5}$ CAAQS	$PM_{2.5}$ NAAQS	Lead CAAQS	Lead NAAQS	Sulfates CAAQS	Sulfates NAAQS	Hydrogen Sulfide CAAQS	Hydrogen Sulfide NAAQS	Visibility Reducing Particles CAAQS	Visibility Reducing Particles NAAQS
Alameda	N	N	A	UA	A	UA	A	UA	N	U	N	N	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Alpine	U	AU	U	UA	A	UA	A	UA	N	U	A	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Amador	N	N	U	UA	A	UA	A	UA	U	U	U	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Butte	N	N	A	UA	A	UA	A	UA	N	U	N	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Calaveras	N	N	U	UA	A	UA	A	UA	N	U	U	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Colusa	A	AU	U	UA	A	UA	A	UA	N	U	A	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Contra Costa	N	N	A	UA	A	UA	A	UA	U	U	N	N	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Del Norte	A	AU	U	UA	A	UA	A	UA	A	U	A	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
El Dorado[1]	A/N	N/AU	U	UA	A	UA	A	UA	N	U	A/U	N/UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Fresno	N	N	A	UA	A	UA	A	UA	N	A	N	N	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Glenn	A	AU	U	UA	A	UA	A	UA	N	U	A	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Humboldt	A	AU	A	UA	A	UA	A	UA	N	U	A	UA	A	UA	A	No Federal Standard	A	No Federal Standard	U	No Federal Standard
Imperial	N	N	A	UA	A	UA	A	UA	N	N	A	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Inyo[2]	N	AU	A	UA	A	UA	A	UA	N	A/N/U	A	UA	A	UA	A	No Federal Standard	A	No Federal Standard	U	No Federal Standard
Kern[3]	N	N	A	UA	A	UA	A	UA	N	A/N/U	A/U	N/UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Kings	N	N	U	UA	A	UA	A	UA	N	A	N	N	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Lake	A	AU	A	UA	A	UA	A	UA	A	U	A	UA	A	UA	A	No Federal Standard	A	No Federal Standard	A	No Federal Standard
Lassen	A	AU	U	UA	A	UA	A	UA	U	U	A	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Los Angeles[4]	N	N	A	UA	A	UA	A	UA	N	A/U	N	N/UA	A	N	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Madera	N	N	U	UA	A	UA	A	UA	N	A	N	N	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Marin	N	N	A	UA	A	UA	A	UA	N	U	N	N	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Mariposa	N	N	U	UA	A	UA	A	UA	U	U	U	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Mendocino	A	AU	U	UA	A	UA	A	UA	N	U	A	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Merced	N	N	A	UA	A	UA	A	UA	N	A	N	N	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Modoc	A	AU	U	UA	A	UA	A	UA	U	U	A	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Mono	N	AU	A	UA	A	UA	A	UA	N	N	A	UA	A	UA	A	No Federal Standard	A	No Federal Standard	U	No Federal Standard
Monterey	N	AU	A	UA	A	UA	A	UA	N	U	A	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard

County	Ozone CAAQS	Ozone NAAQS	CO CAAQS	CO NAAQS	NO_2 CAAQS	NO_2 NAAQS	SO_2 CAAQS	SO_2 NAAQS	PM_{10} CAAQS	PM_{10} NAAQS	$PM_{2.5}$ CAAQS	$PM_{2.5}$ NAAQS	Lead CAAQS	Lead NAAQS	Sulfates CAAQS	Sulfates NAAQS	Hydrogen Sulfide CAAQS	Hydrogen Sulfide NAAQS	Visibility Reducing Particles CAAQS	Visibility Reducing Particles NAAQS
Napa	N	N	A	UA	A	UA	A	UA	N	U	N	N	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Nevada	N	N	A	UA	A	UA	A	UA	N	U	U	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Orange	N	N	A	UA	A	UA	A	UA	N	A	N	N	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Placer[5]	A/N	N/AU	A	UA	A	UA	A	UA	N	U	A/U	N/UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Plumas	U	AU	A	UA	A	UA	A	UA	N	U	A/U	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Riverside[6]	N	N/AU	A	UA	A	UA	A	UA	N	A/N/U	A/N/U	N/UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Sacramento	N	N	A	UA	A	UA	A	UA	N	A	A	N	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
San Benito	N	AU	U	UA	A	UA	A	UA	N	U	A	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
San Bernardino[7]	N	N/AU	A	UA	A	UA	A	UA	N	N	A/U	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
San Diego	N	N	A	UA	A	UA	A	UA	N	U	N	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
San Francisco	N	N	A	UA	A	UA	A	UA	N	U	N	N	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
San Joaquin	N	N	A	UA	A	UA	A	UA	N	A	N	N	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
San Luis Obispo	N	N	A	UA	A	UA	A	UA	N	U	A	UA	A	UA	A	No Federal Standard	A	No Federal Standard	U	No Federal Standard
San Mateo	N	N	A	UA	A	UA	A	UA	N	U	N	N	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Santa Barbara	N-T	AU	A	UA	A	UA	A	UA	N	U	U	UA	A	UA	A	No Federal Standard	A	No Federal Standard	U	No Federal Standard
Santa Clara	N	N	A	UA	A	UA	A	UA	N	U	N	N	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Santa Cruz	N	AU	U	UA	A	UA	A	UA	N	U	A	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Shasta	N	AU	U	UA	A	UA	A	UA	A	U	A	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Sierra	U	AU	U	UA	A	UA	A	UA	N	U	U	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Siskiyou	A	AU	U	UA	A	UA	A	UA	A	U	A	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Solano	N	N	A	UA	A	UA	A	UA	N	U	N	N	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Sonoma[8]	A/N	N/AU	A	UA	A	UA	A	UA	A/N	U	A/N	N/UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Stanislaus	N	N	A	UA	A	UA	A	UA	N	A	N	N	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Sutter	N	AU	A	UA	A	UA	A	UA	N	U	A	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Tehama	N	AU	U	UA	A	UA	A	UA	N	U	U	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Trinity	A	AU	U	UA	A	UA	A	UA	A	U	A	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Tulare	N	N	A	UA	A	UA	A	UA	N	A	N	N	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Tuolumne	N	N	A	UA	A	UA	A	UA	U	U	U	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard

County	Ozone CAAQS	Ozone NAAQS	CO CAAQS	CO NAAQS	NO_2 CAAQS	NO_2 NAAQS	SO_2 CAAQS	SO_2 NAAQS	PM_{10} CAAQS	PM_{10} NAAQS	$PM_{2.5}$ CAAQS	$PM_{2.5}$ NAAQS	Lead CAAQS	Lead NAAQS	Sulfates CAAQS	Sulfates NAAQS	Hydrogen Sulfide CAAQS	Hydrogen Sulfide NAAQS	Visibility Reducing Particles CAAQS	Visibility Reducing Particles NAAQS
Ventura	N	N	A	UA	A	UA	A	UA	N	U	A	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Yolo	N	N	A	UA	A	UA	A	UA	N	U	U	N	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard
Yuba	N	AU	U	UA	A	UA	A	UA	N	U	A	UA	A	UA	A	No Federal Standard	U	No Federal Standard	U	No Federal Standard

Notes: A=Attainment, N=Nonattainment, N-T=Nonattainment/Transitional, U=Unclassified (CAAQS), UA=Unclassified/Attainment (NAAQS)

[1] The eastern portion of El Dorado County (Lake Tahoe Air Basin) is in attainment for the CAAQS and NAAQS for ozone, $PM_{2.5}$, and PM_{10}; however, the western portion (Mountain Counties Air Basin) is in nonattainment for ozone and unclassified for PM_{10}. A fraction of the County located in the Mountain Counties Air Basin is also in nonattainment for the $PM_{2.5}$ NAAQS.

[2] Owen's valley in Inyo County is designated as nonattainment for the PM_{10} NAAQS, the Coso Junction portion of Inyo County is in attainment for the PM_{10} NAAQS, and the remainder of Inyo County is unclassified.

[3] The eastern portion of Kern County (Mojave Air Basin) is unclassified for the CAAQS for $PM_{2.5}$; however, the western portion (San Joaquin Valley Air Basin) is in nonattainment. The Mojave Air Basin portion is both classified as nonattainment and unclassified for the PM_{10} NAAQS and the San Joaquin Valley Air Basin is in attainment for the PM_{10} and $PM_{2.5}$ NAAQS.

[4] The northern portion of Los Angeles County (Mojave Air Basin) is unclassified and unclassified/attainment for the $PM_{2.5}$ CAAQS and NAAQS, respectively; however, the southern portion (South Coast Air Basin) is in nonattainment for both the CAAQS and NAAQS.

[5] The eastern portion of Placer County (Lake Tahoe Air Basin) is in attainment for the CAAQS and NAAQS for ozone; however, the western portion (Sacramento Valley Air Basin and Mountain Counties Air Basin) is in nonattainment for ozone. The far western portion (Sacramento Valley Air Basin) and far eastern portion (Lake Tahoe Air Basin) is in attainment the $PM_{2.5}$ CAAQS, and the middle portion (Mountain Counties Air Basin) is designated unclassified for the $PM_{2.5}$ CAAQS. The far western portion (Sacramento Valley Air Basin) is also in nonattainment for the $PM_{2.5}$ NAAQS.

[6] The western portion of Riverside County (South Coast Air Basin) is in nonattainment for the $PM_{2.5}$ CAAQS and NAAQS and the ozone NAAQS, the middle portion of Riverside County (Salton Sea Air Basin) is designated as unclassified for $PM_{2.5}$ for the CAAQS and nonattainment for the ozone NAAQS, and the eastern portion (Mojave Desert Air Basin) is designated as attainment for $PM_{2.5}$ for the CAAQS and the ozone NAAQS.

[7] The northeastern portion of San Bernardino is designated as unclassified for $PM_{2.5}$ for the CAAQS and the "County Portion of Federal Ozone AQMA" of San Bernardino is in attainment for the CAAQS $PM_{2.5}$.

[8] The northwest portion of Sonoma County (North Coast Air Basin) is in attainment for the CAAQS and NAAQs for ozone, $PM_{2.5}$, and PM_{10}; however, the southeast portion (San Francisco Bay Area Air Basin) is in nonattainment for these pollutants for the CAAQS and NAAQS.

Appendix B

Descriptions of Figures in the EIR

Descriptions of Figures in the EIR

To help ensure that this environmental impact report (EIR) meets the accessibility requirements of Assembly Bill 434 and Section 508, descriptive text has been provided for figures presented in the EIR. Brief descriptions are attached to the figures. Longer descriptions are presented in this appendix.

Figure 2-1, "Location of Existing and Planned (Grant-Funded) Composting and Anaerobic Digestion Facilities That Handle SB 1383 Targeted Materials"

This map of California identifies the locations in the state's 15 air basins of existing and planned grant-funded Tier 2 composting facilities (i.e., facilities with 25,000 cubic yards or more of organic waste processing capacity that accept food waste, manure, and/or biosolids, among other organic waste) and anaerobic digestion facilities (including publicly owned treatment works that currently accept organic waste). The facilities shown on this map could be expected to handle additional materials in response to the proposed regulation.

No existing or planned facilities meeting the above criteria are located in the Great Basin Valleys, Lake Tahoe, Mountain Counties, North Coast, and Northeast Plateau Air Basins.

The Lake County Air Basin has one planned composting facility.

The Mojave Desert Air Basin has two existing composting facilities and four planned composting facilities.

The North Central Coast Air Basin has four existing composting facilities and one planned composting facility.

The Sacramento Valley Air Basin has five existing composting facilities, one planned composting facility, and two existing anaerobic digestion facilities.

The Salton Sea Air Basin has two existing composting facilities.

The San Diego County Air Basin has one planned composting facility.

The San Francisco Bay Air Basin has three existing composting facilities, two planned composting facilities, two existing anaerobic digestion facilities, and two planned anaerobic digestion facilities.

The San Joaquin Valley County Air Basin has 13 existing composting facilities, two planned composting facilities, and one planned anaerobic digestion facility.

The South Central Coast Air Basin has three existing composting facilities, one existing anaerobic digestion facilities, and two planned anaerobic digestion facilities.

The South Coast Air Basin has two existing composting facilities, one planned composting facility, two existing anaerobic digestion facilities, and three planned anaerobic digestion facilities.

Figure 2-2, "Composting Flow Chart"

This flow chart depicts the options available for composting. When a facility receives compost feedstock material—either from a direct delivery or from a material recovery facility or transfer station—the material can be transformed into compost or be used for other purposes. If the material is composted, "fines" or "overs" will be produced. Fines are compost. Overs are material used as mulch; as colored mulch; as boiler fuel; for ADC, AIC, and beneficial reuse; and for direct land application. If organic feedstock material is not composted, it can be used immediately as mulch; for ADC, AIC, and beneficial reuse; as colored mulch; as boiler fuel; and for direct land application.

Figure 2-3, "Potential Environmental Impacts Associated with Composting"

This figure identifies the primary environmental impacts associated with the pre-processing, composting, and post-processing steps of composting. The pre-processing step involves transportation, chipping and grinding, storage, screening, mixing, water addition, and contamination removal. The primary environmental impacts associated with this step are related to air quality and odor, water quality, traffic, litter, noise, and vectors. The composting step involves the creation of "overs" and "fines." Overs are material that after post-processing (i.e., sorting and vehicle delivery) is used for land application; as mulch; as colored mulch; for ADC, AIC, and beneficial reuse; and for biomass conversion. Fines are post-processed and used as compost. The primary environmental impacts associated with the compost step are related to air quality and odor, water quality, litter, noise, and vectors. The primary environmental impacts associated with the post-processing step are related to air quality and odor, water quality, and traffic.

Figure 2-4, "Anaerobic Digestion Flow Chart"

This figure presents the process of anaerobic digestion. Feedstock is subjected to open or enclosed pre-processing and then fed into a digester. The digestion process generates gas, solids, and liquids that require handling. The biogas that is produced is conditioned and upgraded. The conditioning and upgrading processes involve some flaring of gas and use of boilers, engines, and turbines. Biogas that has been conditioned and upgraded is used in fuel cells and transportation fuels and injected into natural gas pipelines. Liquids that are produced from the digestion process are recirculated into the digester; discharged to the sanitary sewer system; or used as reclaimed water, fertilizers, or soil amendments, for land application or irrigation, or as compost. The solids that are produced are composted, landfilled or used as alternative daily cover at a landfill, land applied, or used as fertilizers or soil amendments.

Figure 2-5, "Potential Environmental Impacts Associated with Anaerobic Digestion"

This figure identifies the potential environmental impacts associated with the pre-processing, digestion, and post-processing steps of anaerobic digestion. The pre-processing step involves transportation; storage; chipping and grinding; sizing and separation; inorganic disposal; and wetting, pulping, and slurry creation. The primary environmental impacts associated with this step are related to air quality and odors, hazards, litter, noise, traffic, utility demand, vectors, and water quality. The digestion step involves the creation of gas, solids, and liquids. The primary environmental impacts associated with this step are related to air quality and odors; hazards, including the possibility of explosion; and utility demand. The post-processing step for gas results in utility pipeline-quality or CNG/LNG vehicle–quality gas, boiler and engine/turbine fuel, fuel that is flared if necessary, or fuel used in fuel cells. The post-processing step for solids results in compost, material used in land application, a solid soil amendment, or material used for landfill/alternative daily cover. The post-processing step for liquids results in liquid used for land application; liquid fertilizer or a soil amendment; liquid that is then recycled or recirculated to the digester; liquid that receives treatment, including sewer discharge; and compost. The primary environmental impacts associated with this step are related to air quality and odors; flare; hazards, including the possibility of explosion; traffic; and water quality.

Figure 2-6, "Biogas Flow Chart"

This figure presents a biogas flow chart. Feedstock is co-digested at a wastewater treatment plant, digested at a stand-alone digester, or co-digested at a dairy digester. Biogas produced at all three types of facilities is used to fuel boilers, generators, combined heat and power units, and turbines; used as transportation fuel; used for utility pipeline injection; and flared if necessary. Biogas produced at these facilities is used on-site, to fuel heavy-duty vehicles, and for utilities.

Figure 3.6-1, "Waste-to-Energy Conversion Process for Anaerobic Digestion"

This chart presents the waste-to-energy conversion process for anaerobic digestion. Livestock waste, crops, wastewater, and food waste are fed to an anaerobic digester. Biogas produced by the digester can be used to generate heat and electricity or to create biomethane to fuel vehicles and supply the gas grid. Digestate produced by the digester can be used as fertilizer, as a soil amendment, and for livestock bedding.

Figure 3.7-1, "California Nonfuel Mineral Production, 2016"

This chart identifies the value of California's nonfuel mineral production in 2016. The value of construction sand and gravel was $1,090,000,000; portland cement was $912,000,000; other, which includes boron minerals, diatomite, feldspar, gemstones, lime, magnesium, compounds, pumice, pumicite, salt, silver, soda ash, and zeolites,

was $725,000,000; crushed stone was $326,000,000; gold was $173,000,000; industrial sand and gravel was $54,000,000; clays, which include bentonite, kaolin, common, and montmorillonite, was $51,000,000; masonry cement was $32,000,000; dimension stone was $7,000,000; and gypsum was $7,000,000.