



2045 Metropolitan Transportation Plan/ Sustainable Communities Strategy and Regional Transportation Plans for Monterey, San Benito and Santa Cruz Counties

Draft Environmental Impact Report

SCH#2020010204

prepared by

Association of Monterey Bay Area Governments

24580 Silver Cloud Court

Monterey, California 93940

Contact: Heather Adamson, Director of Planning

prepared with the assistance of

Rincon Consultants, Inc.

2511 Garden Road, Suite C-250

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Appendices

Appendix A Notice of Preparation and NOP Response Letters

Appendix B 2045 MTP/SCS and RTPs Transportation Project List

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Appendix E 2045 MTP/SCS Air Quality and GHG Emissions

Appendix E.1 2045 MTP/SCS Air Quality Emissions

Appendix E.2 2045 MTP/SCS Greenhouse Gas Emissions – On Road Transportation

Appendix E.3 2045 MTP/SCS Greenhouse Gas Emissions Forecast Inventory – Land Use
Sources

Appendix F AB 52 Consultation

Appendix G 2045 MTP/SCS and RTPs Transportation Alternative Project List

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Acronyms and Abbreviations

AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ADA	Americans with Disabilities Act
ADT	average daily traffic
AF	acre feet
AFY	acre feet per year
AHC	anthropogenic hydrocarbons
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
AMBAG	Association of Bay Area Governments
APCD	Air Pollution Control Districts
APE	Area of Potential Effects
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
BACT	Best Available Control Technology
BIOS	Biogeographic Information and Mapping System
BMP	Best Management Practices
BO	Biological Opinion
BRA	Biological Resource Area
BRT	bus rapid transit
CAA	Clean Air Acts (state and federal)
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officer's Association
CARB	California Air Resources Board
CBSC	California Building Standards Code
CCAA	California Clean Air Act

CCC	California Coastal Commission
CCCC	California Climate Change Center
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CGS	California Geological Survey
CH ₄	methane
CMP	Congestion Management Program
CNDDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNG	compressed natural gas
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CRDPH	County of Riverside Department of Public Health
CRHR	California Register of Historic Resources
CRPR	California Rare Plant Rank
CSUMB	California State University Monterey Bay
CTP	California Transportation Plan
CVMP	Carmel Valley Master Plan
CVMT	congested vehicle miles traveled
CVP	Central Valley Project
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationships
dB	decibels
dBA	A-weighted decibels
DC	direct current
DDD	Dichlorodiphenyldichloroethane

DOC	Department of Conservation
DPM	diesel particulate matter
DPR	Department of Parks and Recreation
DPS	Distinct Population Segment
DWR	Department of Water Resources
EIR	environmental impact report
EMFAC	emission factors
EO	Executive Order
ESU	Evolutionary Significant Unit
FAA	Federal Aviation Administration
FAST Act	Fixing America's Surface Transportation Act
FCAA	Federal Clean Air Act
FCAAA	Federal Clean Air Act Agreements
FEMA	Federal Emergency Management Administration
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FORA	Fort Ord Reuse Authority
FPPA	Federal Farmland Protection Act
FRAP	Fire and Resource Assessment Program
FSZ	Farmland Security Zone
FTA	Federal Transit Administration
FTIP	Federal Transportation Improvement Plan
GHG	Greenhouse Gas
GSA	groundwater sustainability agencies
GWP	Global Warming Potential
HAP	Hazardous Air Pollutant
HCP	Habitat Conservation Plan
HEPA	high-efficiency particulate air
HERS	Home Energy Rating Systems
HFC	hydrofluorocarbon

HMBP	Hazardous Materials Business Plan
HMMP	Habitat Mitigation and Monitoring Plan
HRA	health risk assessment
HRI	Historic Resources Authority
HUD	Department of Housing and Urban Development
HV	heating and ventilation
IPCC	United Nations Intergovernmental Panel on Climate Change
ITC	Intermodal Transportation Center
ITP	Incidental Take Plan
LAFCO	Local Agency Formation Commission
LCP	Local Coastal Program
Ldn	day-night average sound level
Leq	equivalent noise level
LEV	Low Emissions Vehicle
LNG	liquefied natural gas
LOS	Level of Service
LRTP	Long Range Transportation Plan
LSAT	Land Surface Air Temperature
LTA	San Benito County Local Transit Authority
LUP	land use plan
MBARD	Monterey Bay Air Resources District
MBSST	Monterey Bay Scenic Trail
MERV	minimum efficiency reporting value
METRO	Santa Cruz Metropolitan Transit District
MMT	million metric tons
MPO	metropolitan planning organization
MPWMD	Monterey Peninsula Water Management District
MPWSP	Monterey Peninsula Water Supply Project
MST	Monterey-Salinas Transit
MTBE	methyl tertiary butyl ether
MTIP	Metropolitan Transportation Improvement Program

MTP/SCS	Metropolitan Transportation Plan and Sustainable Communities Strategy
N ₂ O	nitrous oxides
NAAQS	National Ambient Air Quality Standard
NAC	Noise Abatement Criteria
NAHC	Native American Heritage Commission
NCCAB	North Central Coast Air Basin
NEPA	National Environmental Policy Act
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NHC	Natural Hydrocarbons
NMFS	National Marine Fisheries Service
NO	nitric oxide
NO ₂	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOC	notice of completion
NOD	notice of determination
NOEP	National Ocean Economics Program
NOP	notice of preparation
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OCEN	Ohlone/Costanoan-Esselen Nation
OEHHA	California Office of Environmental Health Hazard Assessment
OSHA	(federal) Occupational Safety and Hazard Administration
Pb	lead
PFC	perfluorocarbons
PM	particulate matter (PM ₁₀ and PM _{2.5})
PPV	peak particle velocity
PRA	Paleontological Resources Assessment

PSD	prevention of significant deterioration
PVWMA	Pajaro Valley Water Management Agency
RAMP	Regional Advance Mitigation Planning
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act
RMS	root mean square
ROG	reactive organic compound
RPM	revolutions per minute
RSL	Rural Services Line
RTDM	Regional Travel Demand Model
RTIP	Regional Transportation Improvement Plan
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
RWMG	Regional Water Management Group
SB	Senate Bill
SBtCOG	The Council of San Benito County Governments
SCCRTC	Santa Cruz County Regional Transportation Commission
SCS	Sustainable Communities Strategy
SDC	Seismic Design Criteria
SF ₆	sulfur hexafluoride
SGMA	Sustainable Ground Water Management Act
SO ₂	sulfur dioxide
SO _x	sulfur oxide
SR	State Route
SRA	Source Receptor Area
SSC	Species of Special Concern
STIP	Statewide Transportation Improvement Plan
SVP	Society of Vertebrate Paleontology
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant

TAMC	Transportation Agency for Monterey County
TDM	transportation demand management
TDS	Total Dissolved Solids
THP	Timber Harvesting Program
TNM	Federal Highway Traffic Noise Model
TOD	transportation oriented development
TPZ	Timber Production Zone
TSM	Transportation System Management
U.S. EPA	United States Environmental Protection Agency
UCSC	University of California Santa Cruz
USACE	United States Army Corps of Engineers
USC	United States Code
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USL	Urban Services Line
VAVR	voluntary accelerated vehicle retirement
VKT	vehicle kilometers traveled
VMT	vehicle miles traveled
VOC	Volatile Organic Compounds
VPD	vehicles per day
VRV	voluntary repair of vehicles
WEAP	Worker Environmental Awareness Program
WMO	World Meteorological Organization
ZEV	Zero Emissions Vehicle

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Executive Summary

This document is an Environmental Impact Report (EIR) analyzing the environmental effects of the proposed Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) and Regional Transportation Plans (RTPs). This section summarizes the characteristics of the proposed project, alternatives to the proposed project, and the environmental impacts and mitigation measures associated with the proposed project.

Project Synopsis

Project Applicant

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Project Description

This EIR has been prepared to examine the environmental effects of the Metropolitan Transportation Plan/Sustainable Communities Strategy (hereafter referred to as the 2045 MTP/SCS) and Regional Transportation Plans (RTPs). The following is a summary of the full project description, which can be found in Chapter 2, *Project Description*.

The 2045 MTP/SCS covers the entire area of Monterey, San Benito, and Santa Cruz counties and includes all the incorporated cities and unincorporated communities contained therein. Refer to Figure 2-1 in Chapter 2, *Project Description* for a map of the project location. The three RTPs each cover the entire areas of their respective county. Capital improvement projects identified in the 2045 MTP/SCS and each of the county level RTPs are located on State highways, county roads and locally owned streets, as well as on transit district property, and public utility lands.

Project Characteristics

The 2045 MTP/SCS and county level RTPs are an update to the 2040 MTP/SCS/RTPs which were adopted in June 2018. The updates from the 2040 MTP/SCS and county level RTPs consisted of: updating the growth forecasts from 2015-2040 to 2015/2020-2045; updating project cost estimates; updating revenue assumptions; and minor changes to transportation

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project lists. The MTP/SCS vision, policies, and goals have not changed, nor have most of the performance metrics. However, the GHG reduction targets established by CARB for AMBAG have increased.

The 2045 MTP/SCS and county level RTPs plans address how the AMBAG region will meet its transportation needs for the period through 2045, considering existing and projected future land use patterns as well as population and job growth. The 2045 MTP/SCS estimates nearly \$13.3 billion in revenues expected to be available to the region from all transportation funding sources over the course of the planning period. It identifies and prioritizes expenditures of this anticipated funding for transportation projects of all transportation modes: highways, streets and roads, transit, rail, bicycle and pedestrian, aviation, as well as transportation demand management (TDM) measures and transportation systems management (TSM).

The 2045 MTP/SCS is based on a preferred land use and transportation scenario which defines a pattern of future growth and transportation system investment for the region emphasizing a transit oriented development and infill approach to land use and housing. Population and job growth are allocated principally within existing urban areas near public transit. Table 2-1 in Chapter 2, *Project Description*, is the projected population growth within the AMBAG region. The preferred land use and transportation scenario are based on the most recent planning assumptions, and consider local general plans and other factors such as updated specific plans and recently completed transportation planning studies.

Transportation projects and the preferred land use pattern that are included in the 2045 MTP/SCS are shown in Figure 2-2 through Figure 2-8 of the *Project Description*. Chapter 4 of the 2045 MTP/SCS describes the proposed SCS, with Chapter 5 identifying the metrics to quantify the transportation, environmental, economic and equity benefits of the Plan. Appendix G of the 2045 MTP/SCS highlights the performance of the MTP/SCS for 2045. The performance of the Revenue Constrained network is compared in Appendix G to other network scenarios, such as 2020 Baseline and 2045 No Project.

The 2045 MTP/SCS preferred scenario consists of an intensified land use distribution approach that concentrates the forecasted population and employment growth in urban areas. The transportation network includes additional highway capacity, local street improvements, active transportation, and transit investments, as well as transportation demand management and system management to serve a more concentrated urban growth pattern.

The 2045 MTP/SCS is organized into seven chapters plus an Executive Summary:

- *Executive Summary*. Includes an overview of the 2045 MTP/SCS, the preferred scenario and its performance, an explanation of the planning process and the allocation of transportation funding.
- *Chapter 1 – Vision*. Discusses legal authority, the overall purpose of the 2045 MTP/SCS and transportation-related issues and challenges faced by the region.

- *Chapter 2 – Transportation Investments.* Defines how to make the most out of the existing transportation system by investing in system preservation and maintenance, along with strategic system expansion and demand and system management strategies. The transportation investments are intended to provide more safe and efficient travel choices for the region’s residents, businesses, and visitors.
- *Chapter 3 – Financial Plan.* The financial plan presents funding strategies that are reasonably available by 2045.
- *Chapter 4 – Sustainable Communities Strategy.* Describes how the SCS was developed, identifies the land use and transportation connection, identifies the transportation system and programs, discusses resource areas and farmland, methods to accommodate the region’s housing needs, how AMBAG will meet GHG reduction targets and implementation strategies.
- *Chapter 5 – Performance Measures.* Introduces the concept of performance measures as they relate to accomplishing the 2045 MTP/SCS goals while meeting social equity responsibilities.
- *Chapter 6 – Public Participation.* Provides a public participation process including methods for engaging the community and local jurisdictions in the development of the 2045 MTP/SCS.
- *Chapter 7 – Glossary.* Identifies key terms and their definitions.
- *Appendices.* The appendices include the following:
 - A. Regional Growth Forecast
 - B. Financial Plan
 - C. Project List
 - D. Public Participation and Consultation
 - E. SCS Documentation
 - F. Travel Demand Model and Land Use Model Documentation
 - G. Performance Measures
 - H. Complete Streets Guidebook
 - I. SCS Maps
 - J. MTP Checklist

Of these seven chapters, the Vision Element, Transportation Investments, Financial Plan and Sustainable Communities Strategy (Chapters 1, 2, 3 and 4) are the four components that include provisions with the potential to create physical changes to the environment and are the primary focus for analysis in this EIR. These chapters are described in more detail in Chapter 2, *Project Description*.

Project Objectives

The 2045 MTP/SCS is built on a set of integrated policies, strategies, and investments to maintain and improve the transportation system to meet the diverse needs of the region

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through 2045. AMBAG began developing the 2045 MTP/SCS by confirming the following goals and policy objectives:

- **Access and Mobility.** Provide convenient, accessible, and reliable travel options while maximizing productivity for all people and goods in the region.
- **Economic Vitality.** Raise the region's standard of living by enhancing the performance of the transportation system.
- **Environment.** Promote environmental sustainability and protect the natural environment.
- **Healthy Communities.** Protect the health of residents; foster efficient development patterns that optimize travel, housing and employment choices and encourage active transportation.
- **Social Equity.** Provide an equitable level of transportation services to all segments of the population.
- **System Preservation and Safety.** Preserve and ensure a sustainable and safe regional transportation system.

It is AMBAG's intent that the goals and policy objectives be supported by the individual RTPs prepared by Monterey, San Benito, and Santa Cruz counties. The goals, policies and objectives that create the framework for each RTP that comprise the MTP are summarized below.

Alternatives

As required by the California Environmental Quality Act (CEQA), this EIR examines alternatives to the proposed project. Studied alternatives include the following three alternatives. Based on the alternatives analysis, Alternative 3 was determined to be the environmentally superior alternative.

- Alternative 1: No Project Alternative
- Alternative 2: Alternative Transportation Modes
- Alternative 3: Infill and Transit Focus

Alternative 1 (No Project Alternative) assumes that the transportation network would be comprised of committed transportation projects fully programmed through construction included in the MTIP for Fiscal Years 2020-2021 to 2023-2024 only. The growth in population, jobs, and homes would be the same as the growth forecast for the proposed 2045 MTP/SCS. This alternative assumes the same housing and employment growth as the 2045 MTP/SCS, but that growth would occur based on existing land use trends in the AMBAG region as opposed to more compact development envisioned by the 2045 MTP/SCS.

As described in Section 7, *Alternatives*, because of the increased land development outside of existing urbanized areas, Alternative 1 would result in more ground disturbance than the 2045 MTP/SCS. Consequently, compared to the 2045 MTP/SCS, Alternative 1 would have

greater overall impacts to aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, geology and soils, land use, noise, transportation, and tribal cultural resources.

Alternative 2 (Alternative Transportation Modes) is designed to reduce VMT by providing or promoting alternative transportation modes in advance of or in conjunction with projected population and employment growth in the AMBAG region through 2045. Alternative transportation includes walking, bicycling, and transit. This alternative assumes the same growth in population, jobs, and housing numbers, and the same land use pattern, as the 2045 MTP/SCS.

However, unlike the 2045 MTP/SCS, this alternative focuses on prioritizing transportation investments toward all alternative modes of transportation projects first, such as local transit projects and active transportation projects. Active transportation projects would include construction of bicycle lanes and bicycle/pedestrian amenities. The goal of this alternative is to build these projects first and to use as much of the transportation funding available for these alternative transportation modes projects. Under this alternative, investment would be focused on closing transit gaps by enhancing local transit bus service rather than interregional or long-distance services. Examples of active transportation projects include bicycle lanes and pedestrian facilities, such as the planned bicycle/pedestrian crossing over Highway 1 in Santa Cruz and the Fort Ord Regional Trail and Greenway (FORTAG) project in Monterey County. Additional projects would include installation of Class IV bike lanes as part of the Reservation Road Cycle Track (MON-MAR070-MA) and installation of the Esquiline Road Pedestrian Crossing (MON-MYC329-UM) in Monterey County; installation of a San Juan Bautista Historic Park Bike Lane (SB-SJB-A21) and the Monterey Street Bike Route (SB-SJB-A22) in San Benito County; and the Capitola Village Multimodal Enhancements – Phase 2/3 (SC-CAP-P04b-CAP) and the Glen Coolidge Drive/Highway 9 Bike Path (SC-CO-P40-USC) in Santa Cruz County. This alternative includes more than \$1.4 billion more funding for active transportation and transit projects than the proposed 2045 MTP/SCS. These include active transportation projects that were not included in the proposed 2045 MTP/SCS as well as additional local bus, bus rapid transit, and light rail projects. This alternative includes fewer local streets and roads and highway projects than the proposed 2045 MTP/SCS.

As described in Section 7, *Alternatives*, Alternative 2 would result in the same development pattern as the 2045 MTP/SCS. As such, this alternative would result in the same conflicts with land use plans, policies, and regulations as the 2045 MTP/SCS. Alternative 2 would result in mostly similar impacts, with some reduced impacts related to aesthetics, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, population and housing, and tribal cultural resources.

Alternative 3 (Infill and Transit Focus) is designed to reduce VMT by locating the places where people work and live within urban centers and close to regional transit. This alternative assumes the same total growth in population, jobs, and housing numbers as the 2045 MTP/SCS, but with more compact and mixed land uses. Overall, this alternative incorporates less dispersed land use and development than the proposed MTP/SCS. This alternative includes a more compact growth footprint and increased use of regional and interregional

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transit service to generate an increase in regional and interregional transit ridership and corresponding decrease in VMT. For instance, this alternative relies on a higher amount of housing, especially near regional and interregional transit, than the market currently supports. This alternative also assumes increased telecommuting for those industries where telecommuting is feasible, such as in financial and professional services and/or public sector jobs. This alternative assumes more investment (\$2.2 billion) in transit infrastructure and services and less investment in local streets, roads, and highways compared to the proposed 2045 MTP/SCS. Transportation projects in this alternative would include Highway 68 Corridor Transit Improvements (MON-MST019-MST), the TAMC Monterey Branch Line Light Rail Phase I (MON-TAMC001-TAMC), the Rail Extension to Monterey County – Phase 2 (MON-TAMC014), Pajaro/Watsonville Station (MON-TAMC014-TAMC), and the TAMC Rail Extension to Monterey County – Phase 3, Castroville Station (MON-TAMC015-TAMC015) in Monterey County; increased service of the passenger rail to Santa Clara County (SB-LTA-A53) in San Benito County; and the implementation of public transit on the Watsonville – Santa Cruz Rail Corridor (SC-RTC-P02-RTC) in Santa Cruz County.

As discussed in Chapter 7, *Alternatives*, overall impacts to the following resources would be reduced under Alternative 3: aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, energy, geology and soils, and tribal cultural resources. GHG emissions and VMT would also decrease under this alternative, though this decrease would be negligible (less than a one percent change). As described in Section 7, *Alternatives*, Alternative 3 is the environmentally superior alternative, assuming all environmental issue areas are weighted equally.

Refer to Chapter 7, *Alternatives*, for the complete alternatives analysis.

Areas of Known Controversy

The EIR scoping process identified few areas of known controversy for the proposed project. Responses to the Notice of Preparation of a Draft EIR and input received are summarized in Table 1-1 of Chapter 1, *Introduction*. Several attendees of the scoping meetings voiced concerns pertaining to traffic congestion and level of service. Traditionally, traffic congestion was evaluated as an environmental impact in CEQA documents, but it is no longer a CEQA impact and has been replaced by VMT as the metric for evaluating transportation impacts.

Issues to be Resolved

Issues to be resolved include the choice among alternatives, and the nature of mitigation measures to be adopted.

Summary of Impacts and Mitigation Measures

Table ES-1 summarizes the environmental impacts of the proposed project, proposed mitigation measures, and residual impacts (the impact after application of mitigation, if required). Although distinct from mitigation measures, project design features (PDFs) are also

listed because they will be included as conditions of approval by the City to avoid potential biological and geological impacts. Impacts are categorized as follows:

- **Significant and Unavoidable.** An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be adopted if the project is approved per §15093 of the *State CEQA Guidelines*.
- **Less than Significant with Mitigation Incorporated.** An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures.
- **Less than Significant.** An impact that may be adverse but does not exceed the threshold levels and does not require mitigation measures.
- **No Impact:** The proposed project would have no effect on environmental conditions or would reduce existing environmental problems or hazards.

Table ES-1 Summary of Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure(s)	Impact
Aesthetic and Visual Resources		
<p>Impact AES-1. Proposed transportation improvement projects and land use projects envisioned by the 2045 MTP/SCS would have a substantial adverse effect on scenic vistas and substantially damage scenic resources within a state scenic highway. This would be a significant and unavoidable impact.</p>	<p>AES-1(a) Discouragement of Architectural Features that Block Scenic Views. Implementing agencies shall, or can and should, design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. Setbacks and acoustical design of adjacent structures shall be preferentially used as mitigation for potential noise impacts arising from increased traffic volumes associated with adjacent land development. The use of sound walls, or any other architectural features that could block views from the scenic highways or other view corridors, shall be discouraged to the extent possible. Where use of sound walls is found to be necessary, walls shall incorporate offsets, accents and landscaping to prevent monotony. In addition, sound walls shall be complementary in color and texture to surrounding natural features.</p> <p>AES-1(b) Tree Protection and Replacement. New roadways and extensions and widenings of existing roadways shall avoid the removal of existing mature trees to the extent possible. The implementing agency of a particular 2045 MTP/SCS project shall, or can and should, replace any trees lost at a minimum 2:1 basis and incorporate them into the landscaping design for the roadway when feasible. The implementing agency also shall ensure the continued vitality of replaced trees through periodic maintenance.</p>	<p>Significant and Unavoidable</p>
<p>Impact AES-2. Proposed transportation improvement projects and land use projects envisioned by the 2045 MTP/SCS would substantially degrade existing visual character in the AMBAG region. This would be a significant and unavoidable impact.</p>	<p>AES-2 Design Measures for Visual Compatibility. The implementing agency shall require measures that minimize contrasts in scale and massing between the project and surrounding natural forms and developments. Strategies to achieve this include:</p> <ul style="list-style-type: none"> ▪ Siting or designing projects to minimize their intrusion into important viewsheds; ▪ Avoiding large cuts and fills when the visual environment (natural or urban) would be substantially disrupted; ▪ Ensuring that re-contouring provides a smooth and gradual transition between modified landforms and existing grade; ▪ Developing transportation systems to be compatible with the surrounding environments (e.g., colors and materials of construction material; scale of improvements); ▪ Protecting or replacing trees in the project area; ▪ Designing and installing landscaping to add natural elements and visual interest to soften hard edges, as well as to restore natural features along corridors where possible after widening, interchange modifications, re-alignment, or construction of ancillary facilities. The implementing 	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact
	<p>agency shall provide a performance security equal to the value of the landscaping/irrigation installation to ensure compliance with landscaping plans; and</p> <p>Designing new structures to be compatible in scale, mass, character and architecture with existing structures.</p>	
<p>Impact AES-3. Proposed transportation improvement projects and land use projects envisioned by the 2045 MTP/SCS would create new sources of substantial light or glare that would adversely affect day or nighttime views in the area. This would be a significant and unavoidable impact.</p>	<p>AES-3(a) Roadway Lighting. Roadway lighting shall be minimized to the extent possible, consistent with safety and security objectives and shall not exceed the minimum height requirements of the local jurisdiction in which the project is proposed. This may be accomplished through the use of hoods, low intensity lighting and using as few lights as necessary to achieve the goals of the project.</p> <p>AES-3(b) Lighting Design Measures. As part of planning, design and engineering for projects, implementing agencies shall ensure that projects proposed near light-sensitive uses avoid substantial spillover lighting. Potential design measures include, but are not limited to, the following:</p> <ul style="list-style-type: none"> ▪ Lighting shall consist of cutoff-type fixtures that cast low-angle illumination to minimize incidental spillover of light into adjacent properties and undeveloped open space. Fixtures that project light upward or horizontally shall not be used. ▪ Lighting shall be directed away from habitat and open space areas adjacent to the project site. ▪ Light mountings shall be downcast and the height of the poles minimized to reduce potential for backscatter into the nighttime sky and incidental spillover of light onto adjacent private properties and undeveloped open space. Light poles will be 20 feet high or shorter. Luminary mountings shall have non-glare finishes. <p>Exterior lighting features shall be directed downward and shielded in order to confine light to the boundaries of the subject project. Where more intense lighting is necessary for safety purposes, the design shall include landscaping to block light from sensitive land uses, such as residences.</p> <p>AES-3(c) Glare Reduction Measures. Implementing agencies shall minimize and control glare from transportation and infill development projects near glare-sensitive uses through the adoption of project design features such as:</p> <ul style="list-style-type: none"> ▪ Planting trees along transportation corridors to reduce glare from the sun; ▪ Creating tree wells in existing sidewalks; ▪ Adding trees in new curb extensions and traffic circles; ▪ Adding trees to public parks and greenways; ▪ Landscaping off-street parking areas, loading areas and service areas; ▪ Limiting the use of reflective materials, such as metal; 	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact
	<ul style="list-style-type: none"> Using non-reflective material, such as paint, vegetative screening, matte finish coatings and masonry; Screening parking areas by using vegetation or trees; Using low-reflective glass; and Complying with applicable general plan policies or local controls related to glare Tree species planted to comply with this measure shall provide substantial shade cover when mature. Utilities shall be installed underground along these routes wherever feasible to allow trees to grow and provide shade without need for severe pruning. 	
Agriculture and Forestry Resources		
<p>Impact AG-1. Proposed transportation improvements and land use projects envisioned by the 2045 MTP/SCS would result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use, or conflict with existing zoning for agriculture or a Williamson Act contract. This would be a significant and unavoidable impact.</p>	<p>AG-1 Impact Avoidance and Minimization. Implementing agencies shall implement measures, where feasible based on project-and site-specific considerations, that include, but are not limited to those identified below.</p> <ul style="list-style-type: none"> Require project relocation or corridor realignment, where feasible, to avoid Important Farmland, agriculturally-zoned land and/or land under Williamson Act contract; Manage project construction to minimize the introduction of invasive species or weeds that may affect agricultural production on agricultural land adjacent to project sites. Managing project construction may include washing construction equipment before bringing equipment on-site, using certified weed-free straw bales for construction BMPs, and other similar measures. Provide buffers, berms, setbacks, fencing, or other project design measures to protect surrounding agriculture, and to reduce conflict with farming that could result from implementation of transportation improvements and/or projected land use pattern included as a part of the MTP/SCS; Maintain and expand agricultural land protections such as urban growth boundaries; Achieve compensatory mitigation in advance of impacts through purchase or creation of mitigation credits or the implementation of mitigation projects through Regional Advance Mitigation Planning, as deemed appropriate by permitting agencies; Require acquisition of conservation easements on land in the same jurisdiction, if feasible, and at least equal in quality and size to converted Important Farmland, to offset the loss of Important Farmland; and/or 	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact
	<ul style="list-style-type: none"> Institute new protection of farmland in the project area or elsewhere through the use of long-term restrictions on use, such as 20-year Farmland Security Zone contracts (Government Code Section 51296 et seq.) or 10-year Williamson Act contracts (Government Code Section 51200 et seq.). 	
Impact AG-2. Proposed transportation improvements and land use projects envisioned by the 2045 MTP/SCS would not conflict with existing zoning for forest land, timberland, or timberland production, nor result in the loss of forest land or convert forest land to non-forest uses. Impacts would be less than significant.	None required.	Less than Significant
Air Quality and Health Impacts/Risks		
Impact AQ-1. The 2045 MTP/SCS would not conflict with or obstruct implementation of the AQMP. Impacts would be less than significant.	None required.	Less than Significant
Impact AQ-2. Construction of proposed transportation improvements and land use projects envisioned by the 2045 MTP/SCS would result in a cumulatively considerable net increase in PM ₁₀ or ozone precursor emissions. Impacts would be significant and unavoidable.	<p>AQ-2(a) Application of MBARD Feasible Mitigation Measures. For all projects, the implementing agency shall incorporate the most recent MBARD feasible mitigation measures and/or technologies for reducing inhalable particles based on analysis of individual sites and project circumstances. Current MBARD feasible mitigation measures include the following measures. Additional and/or modified measures may be adopted by MBARD prior to implementation of individual projects under the 2045 MTP/SCS. The most current list of feasible mitigation measures at the time of project implementation shall be used.</p> <ul style="list-style-type: none"> Water all active construction areas at least twice daily. Frequency should be based on the type of operation, soil, and wind exposure. Prohibit all grading activities during periods of high wind (over 15 miles per hour). Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days). 	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact
	<ul style="list-style-type: none"> ▪ Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydro seed area. ▪ Haul trucks shall maintain at least 2'0" of freeboard. ▪ Cover all trucks hauling dirt, sand, or loose materials. ▪ Plant tree windbreaks on the windward perimeter of construction projects if adjacent to open land. ▪ Plant vegetative ground cover in disturbed areas as soon as possible. ▪ Cover inactive storage piles. ▪ Install wheel washers at the entrance to construction sites for all exiting trucks. ▪ Pave all roads on construction sites. ▪ Sweep streets if visible soil material is carried out from the construction site. ▪ Limit the area under construction at any one time. ▪ Post a publicly visible sign which specifies the telephone number and person to contact regarding dust complaints. This person shall respond to complaints and take corrective action within 48 hours. The phone number of the Monterey Bay Air Resources District shall be visible to ensure compliance with Rule 402 (Nuisance). <p>AQ-2(b) Diesel Equipment Emissions Standards. The implementing agency shall ensure, to the maximum extent feasible, that diesel construction equipment meeting CARB Tier 4 emission standards for off-road heavy-duty diesel engines is used. If use of Tier 4 equipment is not feasible, diesel construction equipment meeting Tier 3 (or if infeasible, Tier 2) emission standards shall be used, and engines shall be retrofitted with CARB Level 3 Verified Diesel Emissions Control Strategy (VDECS) if available for the equipment. These measures shall be noted on all construction plans and the implementing agency shall perform periodic site inspections.</p> <p>AQ-2(c) Electric Construction Equipment. The implementing agency shall ensure that to the extent possible, construction equipment utilizes electricity from power poles rather than temporary diesel power generators and/or gasoline power generators.</p>	

Impact	Mitigation Measure(s)	Impact
<p>Impact AQ-3. Proposed transportation improvements and land use projects envisioned by the 2045 MTP/SCS would result in a cumulatively considerable net increase of PM₁₀. Long-term operational impacts related to PM₁₀ emissions would be significant and unavoidable.</p>	<p>AQ-3(a) PM₁₀ Emissions Reduction.</p> <p>To help reduce regional PM₁₀ emissions, AMBAG and the RTPAs, in partnership with MBARD and implementing agencies, shall:</p> <ol style="list-style-type: none"> Support the use of existing air quality and transportation funds and seek additional funds to continue the implementation of the CARB Carl Moyer Program, which is intended to retrofit and replace trucks and locomotives to reduce particulate matter. Incentivize the reduction of mobile PM emissions from mobile exhaust and entrained PM sources such as tire wear, brake wear, and roadway dust through funding. Hold forums and workshops to encourage land use projects to incorporate transportation demand management (TDM) strategies as part of the project design to reduce the number of vehicular trips across the transportation network. Potential strategies could include ridesharing, carpooling, subsidized public transit, flexible work hours, and parking management measures. <p>AQ-3(b) Long-term Regional Operational Emissions.</p> <p>Implementing agencies including transportation project sponsors, counties, and cities shall, or can and should, implement long-term operational emissions reduction measures. Such reduction measures include the following:</p> <ul style="list-style-type: none"> ▪ Require that all interior and exterior architectural coatings for all developments utilize coatings following MBARD Rule 426, <i>Architectural Coatings</i>. ▪ Increase building envelope energy efficiency standards in excess of applicable building standards and encourage new development to achieve zero net energy use. ▪ Install energy-efficient appliances, interior lighting, and building mechanical systems. Encourage installation of solar panels for new residential and commercial development. ▪ Locate sensitive receptors more than 500 feet of a freeway, 500 feet of urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. ▪ Locate sensitive receptors more than 1,000 feet of a major diesel rail service or railyards. Where adequate buffer cannot be implemented, implement the following: <ul style="list-style-type: none"> ▫ Install air filtration (as part of mechanical ventilation systems or stand-alone air cleaners) to indoor reduce pollution exposure for residents and other sensitive populations in buildings that are close to transportation network improvement projects. ▫ Use air filtration devices rated MERV-13 or higher. ▫ Plant trees and/or vegetation suited to trapping roadway air pollution and/or sound walls between sensitive receptors and the pollution source. The vegetation buffer should be thick, 	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact
	<p>with full coverage from the ground to the top of the canopy Install higher efficacy public street and exterior lighting.</p> <ul style="list-style-type: none"> ▪ Use daylight as an integral part of lighting systems in buildings. ▪ Use passive solar designs to take advantage of solar heating and natural cooling. ▪ Install light colored “cool” roofs, cool pavements. ▪ Install solar and tankless hot water heaters. ▪ Exclude wood-burning fireplaces and stoves. ▪ Incorporate design measures and infrastructure that promotes safe and efficient use of alternative modes of transportation (e.g., neighborhood electric vehicles, bicycles) pedestrian access, and public transportation use. Such measures may include incorporation of electric vehicle charging stations, bike lanes, bicycle-friendly intersections, and bicycle parking and storage facilities. ▪ Incorporate design measures that promote ride sharing programs (e.g., by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading and waiting areas for ride sharing vehicles, and providing a web site or message board for coordinating rides). 	
Impact AQ-4. Implementation of the 2045 MTP/SCS would expose sensitive receptors to substantial pollutant concentrations. Impacts would be significant and unavoidable.	AQ-3(b) Long-term Regional Operational Emissions. See Impact AQ-3 for mitigation measure.	Significant and Unavoidable
Impact AQ-5. Future growth and development facilitated by the 2045 MTP/SCS land use scenario would expose sensitive receptors to substantial hazardous air pollutant concentrations. Impacts would be significant and unavoidable.	<p>AQ-5 Health Risk Reduction Measures. Transportation implementing agencies shall, or can and should, implement the following measures:</p> <ul style="list-style-type: none"> ▪ Retain a qualified air quality consultant to prepare a health risk assessment (HRA) in accordance with CARB and OEHHA requirements to determine the exposure of nearby sensitive receptors to TAC concentrations. ▪ If impacts result in increased risks to sensitive receptors above the MBARD significance thresholds, then design features or control measures must be included that will reduce the health risks at the location of the off-site sensitive receptors to a level below the MBARD significance threshold. For example, plant trees and/or vegetation suited to trapping TACs and/or sound walls between sensitive receptors and the pollution source would be recommended. This measure would trap 	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact
	<p>TACs emitted from pollution sources such as highways, reducing the amount of TACs to which residents and other sensitive populations would be exposed.</p> <ul style="list-style-type: none"> ▪ AMBAG will partner with MBARD and other implementing agencies to develop a program to retrofit existing residential buildings and other sensitive land uses (as defined by CARB) near freeways or roadways where health risk impacts exceed MBARD significance thresholds with air filtration devices rated minimum efficiency report value (MERV) 13. ▪ Implement air pollution reduction strategies as described in Table 1 from the CARB <i>Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways</i> technical advisory (2017) when reasonable and feasible for transportation system projects associated with the 2045 MTP/SCS. <p>In addition, consistent with the general guidance contained in CARB's <i>Air Quality and Land Use Handbook</i> (April 2005) and <i>Technical Advisory on Strategies to Reduce Air pollution Exposure Near High-Volume Roadways</i> (April 2017). Appropriate measures shall include one or more of the following methods, as determined by a qualified professional, as applicable. The implementing agency shall incorporate health risk reduction measures based on analysis of individual land use sites and project circumstances. These measures may include:</p> <ul style="list-style-type: none"> ▪ Avoid siting new sensitive land uses within 500 feet of a freeway or railway. ▪ Require development projects for new sensitive land uses to be designed to minimize exposure to roadway-related pollutants to the maximum extent feasible through inclusion of design components including air filtration and physical barriers. ▪ Do not locate sensitive receptors near the entry and exit points of a distribution center. ▪ Locate structures and outdoor living areas for sensitive uses as far as possible from the source of emissions. As feasible, locate doors, outdoor living areas and air intake vents primarily on the side of the building away from the freeway or other pollution source. As feasible, incorporate dense, tiered vegetation that regains foliage year-round and has a long-life span between the pollution source and the project. ▪ Maintain a 50-foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year). ▪ Install, operate, and maintain in good working order a central heating and ventilation (HV) system or other air take system in the building, or in each individual residential unit, that meets or exceeds the efficiency standard of the MERV 13. The HV system should include the following features: Installation of a high efficiency filter and/or carbon filter-to-filter particulates and other chemical matter from entering the building. Either HEPA filters or ASHRAE 85 percent supply filters should be used. Ongoing maintenance should occur. 	

Impact	Mitigation Measure(s)	Impact
	<ul style="list-style-type: none"> Retain a qualified HV consultant or Home Energy Rating Systems (HERS) rater during the design phase of the project to locate the HV system based on exposure modeling from the mobile and/or stationary pollutant sources. Maintain positive pressure within the building. Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air. Achieve a performance standard of at least four air exchanges per hour of recirculation. Achieve a performance standard of 0.25 air exchanges per hour of in unfiltered infiltration if the building is not positively pressurized. Require project owners to provide a disclosure statement to occupants and buyers summarizing technical studies that reflect health concerns about exposure to highway exhaust emissions. Implement feasible attenuation measures needed to reduce potential air quality impacts to sensitive receptors such as air filtration systems. 	
Impact AQ-6. Implementation of the 2045 MTP/SCS would not result in other emissions (such as those leading to odors) adversely impacting a substantial number of people. Impacts would be less than significant.	None required.	Less than Significant
Biological Resources		
Impact BIO-1. Implementation of transportation improvements and the land use scenario envisioned by the 2045 MTP/SCS would have substantial adverse impacts on special-status plant and animal species, either directly or through habitat modifications. Impacts would be significant and unavoidable.	BIO-1(a) Biological Resources Screening and Assessment On a project by project basis, a preliminary biological resource screening shall, or can and should, be performed as part of the environmental review process to determine whether the project has any potential to impact biological resources. If it is determined that the project has no potential to impact biological resources, no further action is required. If the project would have the potential to impact biological resources, prior to construction, the implementing agency shall retain a qualified biologist to conduct a biological resources assessment (BRA) to document the existing biological resources and to determine the potential impacts to those resources. Depending on the results of the BRA, design alterations, further technical studies (i.e., protocol surveys) and/or consultations with the USFWS, CDFW and/or other local, state, and federal agencies may be required. The following mitigation measures [BIO-1(b) through BIO-1(j)] shall be incorporated only as applicable into the BRA for projects where specific resources are present or may be present and impacted by the project.	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact
	<p>BIO-1(b) Special-Status Plant Species Surveys. If completion of the project specific BRA determines that special-status plant species have potential to occur on-site, the implementing agency shall require surveys for special-status plants to be completed prior to any vegetation removal, grubbing, or other construction activity of each project (including staging and mobilization). The surveys shall be floristic in nature and shall be seasonally timed to coincide with the target species. Surveys shall be conducted in accordance with the most current protocols established by the CDFW, USFWS, and the local jurisdictions if said protocols exist. A report of the survey results shall be submitted to the implementing agency for review. If special-status plant species are identified, mitigation measure BIO-1(c) shall apply.</p> <p>BIO-1(c) Special-Status Plant Species Avoidance, Minimization and Mitigation. If state- or federally listed and/or CRPR 1 and 2 species are found during special-status plant surveys [pursuant to mitigation measure BIO-1(b)], then the project shall be re-designed to avoid impacting these plant species to the maximum extent feasible. If CRPR 3 and 4 species are found, the biologist shall evaluate to determine if they meet criteria to be considered special-status, and if so, the same process as identified for CRPR 1 and 2 species shall apply.</p> <p>If special-status plants species cannot be avoided and would be impacted by a project implemented under the 2045 MTP/SCS, all impacts shall be mitigated at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist for each species as a component of habitat restoration. A restoration plan shall be prepared and submitted to implementing agency overseeing the project for approval.</p> <p>BIO-1(d) Endangered/Threatened Animal Species Habitat Assessment and Protocol Survey. If the BRA determines that suitable habitat may be present for federally and/or state endangered or threatened animal species, the implementing agency shall require protocol habitat assessments/surveys to be completed in accordance with CDFW and/or USFWS/NMFS protocols prior to issuance of any construction permits/project approvals.</p> <p>Alternatively, in lieu of conducting protocol surveys, the implementing agency may choose to assume presence within the project footprint and proceed with development of appropriate avoidance measures, consultation and permitting, as applicable.</p> <p>If the target species is detected during protocol surveys, or protocol surveys are not conducted and presence assumed based on suitable habitat, mitigation measure BIO-1(e) shall apply.</p> <p>BIO-1(e) Endangered/Threatened Animal Species Avoidance and Compensatory Mitigation. If habitat is occupied or presumed occupied by federal and/or state listed species and would be impacted by the project, the implementing agency shall require re-design of the project in coordination with a qualified biologist to avoid impacting occupied/presumed occupied habitat to the</p>	

Impact	Mitigation Measure(s)	Impact
	<p>extent feasible. If occupied or presumed occupied habitat cannot be avoided, the implementing agency shall provide the total acreages for habitat that would be impacted prior to the issuance of construction permits/approvals. The implementing agency shall purchase credits at a USFWS, NMFS and/or CDFW approved conservation bank if available for the affected species and/or provide compensatory mitigation to offset impacts to federal and/or state listed species habitat.</p> <p>Compensatory mitigation shall be provided at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist for permanent impacts. Compensatory mitigation may be combined/nested with special-status plant species and sensitive community restoration where applicable. Temporary impact areas shall be restored to pre-project conditions.</p> <p>If on and/or off site mitigation sites are identified the implementing agency shall retain a qualified biologist to prepare a Habitat Mitigation and Monitoring Plan (HMMP) to ensure the success of compensatory mitigation sites that are to be conserved for compensation of permanent impacts to federal and/or state listed species. The HMMP shall identify long term site management needs, routine monitoring techniques, techniques and success criteria, and shall determine if the conservation site has restoration needs to function as a suitable mitigation site. The HMMP shall be submitted to the agency overseeing the project for approval.</p> <p>BIO-1(f) Endangered/Threatened Species Avoidance and Minimization During Construction. The implementing agency shall apply the following measures to aquatic and terrestrial species, where appropriate. Implementing agencies shall select from these measures as appropriate depending on site conditions, the species with potential for occurrence and the results of the biological resources screening and assessment (measure BIO-1[a]).</p> <ul style="list-style-type: none"> Pre-construction surveys for federal and/or state listed species with potential to occur shall be conducted where suitable habitat is present by a qualified biologist not more than 48 hours prior to the start of construction activities. The survey area shall include the proposed disturbance area and all proposed ingress/egress routes, plus a 100-foot buffer. If any life stage of federal and/or state listed species is found within the survey area, the qualified biologist shall recommend an appropriate course of action, which may include consultation with USFWS, NMFS and/or CDFW. The results of the pre-construction surveys shall be submitted to the implementing agency for review and approval prior to start of construction. Ground disturbance shall be limited to the minimum necessary to complete the project. The project limits of disturbance shall be flagged. Areas of special biological concern shall have highly visible orange construction fencing. 	

Impact	Mitigation Measure(s)	Impact
	<ul style="list-style-type: none"> ▪ All projects occurring within/adjacent to aquatic habitats (including riparian habitats and wetlands) shall be completed between April 1 and October 31, to avoid impacts to sensitive aquatic species. ▪ All projects occurring within or adjacent to sensitive habitats that may support federally and/or state endangered/threatened species shall have a qualified biologist present during all initial ground disturbing/vegetation clearing activities. Once initial ground disturbing/vegetation clearing activities have been completed, said biologist shall conduct daily pre-activity clearance surveys for endangered/threatened species. Alternatively, and upon approval of the CDFW and/or USFWS/NMFS or as outlined in project permits, said biologist may conduct site inspections at a minimum of once per week to ensure all prescribed avoidance and minimization measures are begin fully implemented. ▪ No endangered/threatened species shall be captured and relocated without authorization from the CDFW and/or USFWS/NMFS. ▪ If pumps are used for dewatering activities, all intakes shall be completely screened with wire mesh not larger than five millimeters to prevent animals from entering the pump system. ▪ If at any time during construction of the project an endangered/threatened species enters the construction site or otherwise may be impacted by the project, all project activities shall cease. At that point, a qualified biologist shall recommend an appropriate course of action, which may include consultation with USFWS, NMFS and/or CDFW. ▪ All vehicle maintenance/fueling/staging shall occur not less than 100 feet from any riparian habitat or water body. Suitable containment procedures shall be implemented to prevent spills. ▪ No equipment shall be permitted to enter wetted portions of any affected drainage channel. ▪ All equipment operating within streambeds (restricted to conditions in which water is not present) shall be in good conditions and free of leaks. Spill containment shall be installed under all equipment staged within stream areas and extra spill containment and clean up materials shall be located in close proximity for easy access. ▪ At the end of each workday, excavations shall be secured with cover or a ramp shall be provided to prevent wildlife entrapment. ▪ All trenches, pipes, culverts or similar structures shall be inspected for animals prior to burying, capping, moving, or filling. <p>BIO-1(g) Non-Listed Special-Status Animal Species Avoidance and Minimization. Depending on the species identified in the BRA, the implementing agency shall select from among the following to reduce the potential for impacts to non-listed special-status animal species:</p>	

Impact	Mitigation Measure(s)	Impact
	<ul style="list-style-type: none"> ▪ Pre-construction clearance surveys shall be conducted within 14 days prior to the start of construction (including staging and mobilization) to identify all special-status animal species that may occur on-site. All non-listed special-status species shall be relocated from the site. A report of the pre-construction survey shall be submitted to the implementing agency for their review and approval prior to the start of construction. ▪ A qualified biologist shall be present during all initial ground disturbing activities, including vegetation removal, to recover special-status animal species unearthed by construction activities. ▪ Upon completion of the project, a qualified biologist shall prepare a final compliance report documenting all compliance activities implemented for the project, including the pre-construction survey results. ▪ If special-status bat species may be present and impacted by the project, within 30 days of the start of construction a qualified biologist shall conduct presence/absence surveys for special-status bats, in consultation with the CDFW, where suitable roosting habitat is present. If active bat roosts or colonies are present, the biologist shall evaluate the type of roost to determine the next step. <ul style="list-style-type: none"> ▫ If a maternity colony is present, all construction activities shall be postponed within a 250-foot buffer around the maternity colony until it is determined by a qualified biologist that the young have dispersed or as recommended by CDFW through consultation. Once it has been determined that the roost is clear of bats, the roost shall be removed immediately. ▫ If a roost is determined by a qualified biologist to be used by a large number of bats (large hibernaculum), alternative roosts, such as bat boxes if appropriate for the species, shall be designed and installed near the project site. The number and size of alternative roosts shall be determined through consultations with the CDFW. ▫ If other active roosts are located, exclusion devices such as valves, sheeting or flap-style one-way devices that allow bats to exit but not re-enter roosts discourage bats from occupying the site. <p>BIO-1(h) Preconstruction Surveys for Nesting Birds. For construction activities occurring during the nesting season (generally February 1 to September 15), surveys for nesting birds covered by the CFGC, the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act shall be conducted by a qualified biologist retained by the implementing agency no more than 10 days prior to vegetation removal activities.</p> <p>A qualified biologist shall conduct preconstruction surveys for raptors. The survey for the presence of bald and golden eagles shall cover all areas within of the disturbance footprint plus a one-mile buffer</p>	

Impact	Mitigation Measure(s)	Impact
	<p>where access can be secured. The survey area for all other nesting bird and raptor species shall include the disturbance footprint plus a 300-foot and 500-foot buffer, respectively.</p> <p>If active nests (nests with eggs or chicks) are located, the qualified biologist shall establish an appropriate avoidance buffer ranging from 250 to 500 feet based on the species biology and the current and anticipated disturbance levels occurring in vicinity of the nest.</p> <p>For bald or golden eagle nests identified during the preconstruction surveys, an avoidance buffer of up to one mile shall be established on a case-by-case basis in consultation with the USFWS and CDFW. The size of the buffer may be influenced by the existing conditions and disturbance regime, relevant landscape characteristics, and the nature, timing and duration of the expected disturbance. The buffer shall be established between February 1 and August 31; however, buffers may be relaxed earlier than August 31 if a qualified ornithologist determines that a given nest has failed or that all surviving chicks have fledged and the nest is no longer in use.</p> <p>A report of these preconstruction nesting bird surveys and nest monitoring (if applicable) shall be submitted to the implementing agency for review and approval prior to the start of construction.</p> <p>BIO-1(i) Worker Environmental Awareness Program (WEAP). Prior to initiation of construction activities, all personnel associated with project construction shall attend WEAP training, conducted by a qualified biologist retained by the implementing agency, to aid workers in recognizing special-status resources and review of the limits of construction and mitigation measures required. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers and other personnel involved with construction of the project.</p>	
<p>Impact BIO-2. Implementation of transportation improvements and the land use scenario envisioned by the 2045 MTP/SCS would result in substantial adverse impacts on sensitive habitats, including sensitive natural communities, and state and federally protected wetlands. This impact would be significant and unavoidable.</p>	<p>BIO-2(a) Aquatic Resources Delineation and Impact Avoidance. If the results of measure BIO-1(a) indicates projects implemented under the 2045 MTP/SCS occur within or adjacent to wetland, drainages, riparian habitats, or other areas that may fall under the jurisdiction of the CDFW, USACE, RWQCB and/or CCC, a qualified biologist shall complete an aquatic resources delineation in accordance with the requirement set forth by each agency. The result shall be submitted to the implementing agency, USACE, RWQCB, CDFW and/or CCC, as appropriate, for review and approval, and the project shall be designed to minimize impacts to jurisdictional areas to the extent feasible. The delineation shall serve as the basis to identify potentially jurisdictional areas to be protected during construction, through implementation of the avoidance and minimization identified in measure B-2(f).</p> <p>BIO-2(b) Wetlands, Drainages, and Riparian Habitat Restoration. Impacts to jurisdictional wetlands, drainages, and riparian habitat shall be mitigated at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist, and shall occur on-site or as close to the impacted habitat as</p>	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact
	<p>possible. A mitigation and monitoring plan shall be developed by a qualified biologist and submittal to the agency overseeing the project for approval. Alternatively, mitigation shall be accomplished through purchase of credits from an approved wetlands mitigation bank.</p> <p>BIO-2(c) Landscaping Plan. If landscaping is proposed for a specific project, a qualified biologist/landscape architect retained by the implementing agency shall prepare a landscape plan. Drought tolerant, locally native plant species shall be used. Noxious, invasive and/or non-native plant species that are recognized on the Federal Noxious Weed List, California Noxious Weeds List and/or California Invasive Plant Council Inventory shall not be permitted. Species selected for planting shall be regionally appropriate native species that are known to occur in the adjacent native habitat types.</p> <p>BIO-2(d) Sensitive Natural Community Avoidance and Mitigation. If the results of measure BIO-1(a) indicates projects implemented under the 2045 MTP/SCS would impact sensitive natural communities in addition to riparian habitat which is addressed by Measure BIO-2(b), the implementing agency shall avoid impacts to sensitive natural communities through final project design modifications if feasible. If the implementing agency determines that sensitive natural communities cannot be avoided, impacts shall be mitigated on-site or offsite at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist based on any applicable resource agency guidelines. Temporarily impacted areas shall be restored to pre-project conditions. A Restoration Plan shall be developed by a qualified biologist and submitted to the implementing agency.</p> <p>BIO-2(e) Invasive Weed Prevention and Management Program. Prior to start of construction for each project that occurs within or adjacent to native habitats, an Invasive Weed Prevention and Management Program shall be developed by a qualified biologist retained by the implementing agency to prevent invasion of native habitat by non-native plant species. The plan shall be submitted to the implementing agency for review and approval. A list of target species shall be included, along with measures for early detection and eradication.</p> <p>The plan, which shall be implemented by the implementing agency, shall also include, but not be limited to, the following measures to prevent the introduction of invasive weed species:</p> <ul style="list-style-type: none"> ▪ During construction, limit the use of imported soils for fill. If the use of imported fill material is necessary, the imported material must be obtained from a source that is known to be free of invasive plant species. ▪ To minimize colonization of disturbed areas and the spread of invasive species, the contractor shall stockpile topsoil and redeposit the stockpiled soil after construction or transport the topsoil to a permitted landfill for disposal. 	

Impact	Mitigation Measure(s)	Impact
	<ul style="list-style-type: none"> ▪ All erosion control materials, including straw bales, straw wattles, or mulch used on-site must be free of invasive species seed. ▪ Exotic and invasive plant species shall be excluded from any erosion control seed mixes and/or landscaping plant palettes associated with the proposed project. ▪ All disturbed areas shall be hydroseeded with a mix of locally native species upon completion of work in those areas. <p>BIO-2(f) Wetlands, Drainages, and Riparian Habitat Best Management Practices During Construction. The following best management practices shall be required by the implementing agency for development within or adjacent to wetlands, drainages, or riparian habitat:</p> <ul style="list-style-type: none"> ▪ Access routes, staging and construction areas shall be limited to the minimum area necessary to achieve the project goal and minimize impacts to other waters including locating access routes and ancillary construction areas outside of jurisdictional areas. ▪ To control sedimentation during and after project implementation, appropriate erosion control materials shall be deployed to minimize adverse effects on jurisdictional areas in the vicinity of the project. ▪ Project activities within the jurisdictional areas should occur during the dry season (typically between June 1 and November 1) in any given year, or as otherwise directed by the regulatory agencies. ▪ During construction, no litter or construction debris shall be placed within jurisdictional areas. All such debris and waste shall be picked up daily and properly disposed of at an appropriate site. ▪ Raw cement, concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic species resulting from project related activities, shall be prevented from contaminating the soil and/or entering wetlands, drainages or riparian habitat. ▪ All refueling, maintenance and staging of equipment and vehicles shall occur at least 100 feet from bodies of water and in a location where a potential spill would not drain directly toward aquatic habitat (e.g., on a slope that drains away from the water source). Prior to the onset of work activities, a plan must be in place for prompt and effective response to any accidental spills. 	

Impact	Mitigation Measure(s)	Impact
<p>Impact BIO-3. Implementation of transportation improvements and the land use scenario envisioned by the 2045 MTP/SCS would substantially interfere with wildlife movement, including fish migration, and/or impede the use of a native wildlife nursery. This impact would be significant and unavoidable.</p>	<p>BIO-3(a) Project Design for Wildlife Connectivity. The implementing agency shall implement the following measures. All projects including long segments of fencing and lighting shall be designed to minimize impacts to wildlife. Where fencing or other project components is required for public safety concerns, these project components shall be designed to permit wildlife movement by incorporating design features such as:</p> <ul style="list-style-type: none"> ▪ A minimum 16 inches between the ground and the bottom of the fence to provide clearance for small animals; ▪ A minimum 12 inches between the top two wires, or top the fence with a wooden rail, mesh, or chain link instead of wire to prevent animals from becoming entangled; ▪ If privacy fencing is required near open space areas, openings at the bottom of the fence measure at least 16 inches in diameter shall be installed at reasonable intervals to allow wildlife movement, or the fence may be installed with the bottom at least 16 inches above the ground level; ▪ If fencing or other project components must be designed in such a manner that wildlife passage would not be permitted, wildlife crossing structures shall be incorporated into the project design as appropriate; and ▪ Lighting installed as part of any project shall be designed to be minimally disruptive to wildlife (see mitigation measure AES-3(a) Roadway Lighting for lighting requirements). <p>BIO-3(b) Maintain Connectivity in Drainages. The implementing agency shall implement the following measures. Permanent structures shall be avoided to the extent feasible within any drainage or river that serves as a wildlife migration corridor that would impede wildlife movement.</p> <p>In addition, upon completion of construction within any drainage, areas of stream channel and banks that are temporarily impacted shall be returned to pre-construction contours and in a condition that allows for unimpeded passage through the area once the work has been complete.</p> <p>If water is to be diverted around work sites, a diversion plan shall be submitted to the implementing agency for review and approval prior to issuance of project construction permits/approvals. The diversion shall be designed in a way as to not impede movement while the diversion is in place.</p> <p>BIO-3(c) Construction Best Management Practices to Minimize Disruption to Wildlife. The following construction best management practices shall be incorporated into all grading and construction plans to minimize temporary disruption of wildlife, which could hinder wildlife movement:</p> <ul style="list-style-type: none"> ▪ Designation of a 20 mile per hour speed limit in all construction areas. ▪ Daily construction work schedules shall be limited to daylight hours only. 	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact
	<ul style="list-style-type: none"> ▪ Mufflers shall be used on all construction equipment and vehicles shall be in good operating condition. ▪ All trash shall be placed in sealed containers and shall be removed from the project site a minimum of once per week. ▪ No pets are permitted on project site during construction. 	
Impact BIO-4. Implementation of transportation improvements and the land use scenario envisioned by the 2045 MTP/SCS would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy. This impact would be less than significant.	None required.	Less than Significant
Impact BIO-5. Implementation of transportation improvements and the land use scenario envisioned by the 2045 MTP/SCS would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. There would be no impact.	None required.	No impact

Impact	Mitigation Measure(s)	Impact
Cultural Resources		
<p>Impact CR-1. Implementation of proposed transportation improvements and the land use scenario envisioned by the 2045 MTP/SCS would cause a substantial adverse change in built environment cultural resources that are historical resources as defined in State CEQA Guidelines Section 15064.5. Impacts would be significant and unavoidable.</p>	<p>CR-1 Historical Resources Impact Minimization. Prior to individual project permit issuance, the implementing agency of a 2045 MTP/SCS project involving earth disturbance or construction of permanent above ground structures or roadways shall prepare a map defining the Area of Potential Effects (APE). This map shall indicate the areas of primary and secondary disturbance associated with construction and operation of the facility and will help in determining whether known historical resources are located within the impact zone. If a structure greater than 45 years in age is within the identified APE, a survey and evaluation of the structure(s) to determine their eligibility for recognition under State, federal, or local historic preservation criteria shall be conducted. 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 <i>State CEQA Guidelines</i> section 15064.5(b). Study recommendations shall be implemented, which may include, but would not be limited to, the following:</p> <ul style="list-style-type: none"> ▪ Realign or redesign projects to avoid impacts on known historic resources where possible ▪ If avoidance of a significant architectural/built environment resource is not feasible, additional mitigation options include, but are not limited to, specific design plans for historic districts, or plans for alteration or adaptive re-use 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, and Reconstructing Historic Buildings ▪ Comply with existing local regulations and policies that exceed or reasonably replace any of the above measures that protect historic resources 	<p>Significant and Unavoidable</p>
<p>Impact CR-2. Implementation of proposed transportation improvements and the land use scenario envisioned by the 2045 MTP/SCS would cause a substantial adverse change in the significance of archaeological resources as defined in State CEQA Guidelines Section 15064.5.</p>	<p>CR-2(a) Archaeological Resources Impact Minimization. Before construction activities, implementing agencies shall, or can and should, retain a qualified archaeologist to conduct a record search at the Northwest Information Center to determine whether the project area has been previously surveyed and whether resources were identified. When recommended by the Information Center, implementing agencies shall, or can and should, retain a qualified archaeologist to conduct archaeological surveys before construction activities. Implementing agencies shall, or can and should, follow recommendations identified in the survey, which may include, but would not be limited to: subsurface testing, designing and implementing a Worker Environmental Awareness Program (WEAP), construction monitoring by a qualified archaeologist, or avoidance of sites and preservation in place. Recommended mitigation measures will be consistent with State CEQA Guidelines Section 15126.4(b)(3) recommendations and may include but not be limited to preservation in place and/or</p>	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact
Impacts would be significant and unavoidable.	<p>data recovery. All cultural resources work shall follow accepted professional standards in recording any find including submittal of standard DPR Primary Record forms (Form DPR 523) and location information to the appropriate California Historical Resources Information System office for the project area.</p> <p>CR-2(b) Unanticipated Discoveries During Construction. If evidence of any prehistoric or historic-era subsurface archaeological features or deposits are discovered during construction-related earthmoving activities (e.g., ceramic shard, trash scatters, lithic scatters), implementing agencies shall, or can and should, halt all ground-disturbing activity proximate to the discovery until a qualified archaeologist (36 CFR Section 61) can assess the significance of the find. If the find is a prehistoric archaeological site, the culturally affiliated California Native American Tribe shall be notified. If the archaeologist determines that the find does not meet the CRHR standards of significance for cultural resources, construction may proceed. If the archaeologist determines that further information is needed to evaluate significance, a testing plan shall be prepared and implemented. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), the archaeologist shall work with the implementing agency to avoid disturbance to the resources, and if complete avoidance is not feasible in light of project design, economics, logistics and other factors, shall recommend additional measures such as the preparation and implementation of a data recovery plan. Recommended mitigation measures will be consistent with State CEQA Guidelines Section 15126.4(b)(3) recommendations and may include but not be limited to preservation in place and/or data recovery. All cultural resources work shall follow accepted professional standards in recording any find including submittal of standard DPR Primary Record forms (Form DPR 523) and location information to the appropriate California Historical Resources Information System office for the project area. If the find is a prehistoric archaeological site, the culturally affiliated California Native American tribe shall be notified and afforded the opportunity to monitor mitigative treatment. During evaluation or mitigative treatment, ground disturbance and construction work may continue in other parts of the project area that are distant enough from the find not to impact it, as determined by the qualified archaeologist.</p>	

Impact	Mitigation Measure(s)	Impact
Impact CR-3. Implementation of proposed transportation improvements and the land use scenario envisioned by the 2045 MTP/SCS could disturb human remains. Impacts would be less than significant.	None required.	Less than Significant
Energy		
Impact E-1. Future transportation improvement projects and implementation of the land use scenario envisioned by the 2045 MTP/SCS would not result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. This impact would be less than significant.	None required.	Less than Significant
Impact E-2. the 2045 MTP/SCS would not increase reliance on fossil fuels or decrease reliance on renewable energy sources. This impact would be less than significant.	None required.	Less than Significant
Impact E-3. The 2045 MTP/SCS would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. This impact would be less than significant.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Impact
Geology and Soils		
Impact GEO-1. Implementation of proposed transportation improvements and future projects included in land use scenario envisioned in the 2045 MTP/SCS would not directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault, ground shaking, or seismic-related ground failure. Impacts would be less than significant.	None required.	Less than Significant
Impact GEO-2. Transportation improvements and future projects included in the land use scenario envisioned in the 2045 MTP/SCS would not cause substantial soil erosion or loss of top soil. impacts would be less than significant.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Impact
Impact GEO-3. Implementation of proposed transportation improvements and future projects included in the land use scenario in the 2045 MTP/SCS would be located on potentially unstable soils or in areas of lateral spreading, subsidence, or high liquefaction potential, or areas of expansive soil. Compliance with applicable regulations would reduce impacts to less than significant.	None required.	Less than Significant
Impact GEO-4. Implementation of proposed transportation improvements and future projects included in the land use scenario envisioned in the 2045 MTP/SCS in rural areas may have soils incapable of adequately supporting septic tanks or alternative wastewater disposal systems. Impacts would be less than significant.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Impact
<p>Impact GEO-5. Implementation of proposed transportation improvements and the land use scenario envisioned by the 2045 MTP/SCS would directly or indirectly destroy a unique paleontological resource or site or unique geological feature. Impacts would be significant and unavoidable.</p>	<p>GEO-5 Paleontological and Geologic Resources Impact Minimization. The implementing agency of a 2045 MTP/SCS project involving ground disturbing activities (including grading, trenching, foundation work and other excavations) shall, or can and should, retain a qualified paleontologist, defined as a paleontologist who meets the Society of Vertebrate Paleontology (SVP) standards for Qualified Professional Paleontologist (SVP 2010), to conduct a Paleontological Resources Assessment (PRA). The PRA shall determine the age and paleontological sensitivity of geologic formations underlying the proposed disturbance area, consistent with SVP Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (SVP 2010) guidelines for categorizing paleontological sensitivity of geologic units within a project area. If underlying formations are found to have a high potential (sensitivity) for paleontological resources and/or could be considered a unique geologic feature, the following measures shall apply:</p> <ul style="list-style-type: none"> ▪ Avoidance. Avoid routes and project designs that would permanently alter unique paleontological and geological features. If avoidance practices cannot be implemented, the following measures shall apply. ▪ Paleontological Mitigation and Monitoring Program. A qualified paleontologist shall prepare a Paleontological Mitigation and Monitoring Program to be implemented during ground disturbance activity. This program shall outline the procedures for construction staff training, paleontological monitoring extent and duration (i.e., in what locations and at what depths paleontological monitoring shall be required), salvage and preparation of fossils, the final mitigation and monitoring report and paleontological staff qualifications. ▪ Paleontological Worker Environmental Awareness Program (WEAP). Prior to the start of ground disturbance activity, construction personnel shall be informed on the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff. ▪ Paleontological Monitoring. Ground disturbing activity with the potential to disturbed geologic units with high paleontological sensitivity shall be monitored on a full-time basis by a qualified paleontological monitor. Should no fossils be observed during the first 50 percent of such excavations, paleontological monitoring could be reduced to weekly spot-checking under the discretion of the qualified paleontologist. Monitoring shall be conducted by a qualified paleontological monitor, who is defined as an individual who has experience with collection and salvage of paleontological resources. ▪ Salvage of Fossils. If fossils are discovered, the implementing agency shall be notified immediately, and the qualified paleontologist (or paleontological monitor) shall recover them. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more 	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact
	<p>extensive excavation and longer salvage periods. In this case, the paleontologist should have the authority to temporarily direct, divert or halt construction activity to ensure that the fossil(s) can be removed in a safe and timely manner.</p> <ul style="list-style-type: none"> ▪ Preparation and Curation of Recovered Fossils. Once salvaged, fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection, along with all pertinent field notes, photos, data and maps. ▪ Final Paleontological Mitigation and Monitoring Report. Upon completion of ground disturbing activity (and curation of fossils if necessary) the qualified paleontologist shall prepare a final mitigation and monitoring report outlining the results of the mitigation and monitoring program. The report shall include discussion of the location, duration and methods of the monitoring, stratigraphic sections, any recovered fossils, and the scientific significance of those fossils, and where fossils were curated. 	
<p>Impact GEO-6. Implementation of proposed transportation improvements and future projects included in the land use scenario envisioned in the 2045 MTP/SCS would not result in the loss of availability of known mineral resources of value or locally-important mineral resource recovery sites. This impact would be less than significant.</p>	None required.	Less than Significant

Impact	Mitigation Measure(s)	Impact
Greenhouse Gas Emissions/Climate Change		
Impact GHG-1. Construction of the transportation improvement projects and development within future land use patterns envisioned by the 2045 MTP/SCS would generate a net increase GHG emissions by 2045 compared to baseline 2020 conditions. Impacts would be significant and unavoidable.	GHG-1 Construction GHG Reduction Measures. The project sponsor shall incorporate the most recent GHG reduction measures and/or technologies for reducing GHG emissions measures for off-road construction vehicles during construction. The measures shall be noted on all construction plans and the project sponsor shall perform periodic site inspections. Current GHG-reducing measures include the following: <ul style="list-style-type: none"> ▪ Use of on-road heavy-duty trucks that meet the CARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation; ▪ All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the five-minute idling limit; ▪ Substitute gasoline-powered in place of diesel-powered equipment, where feasible; and ▪ Use of alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel, in place of diesel-powered equipment for 15 percent of the fleet, to the extent electric powered equipment is not feasible; ▪ Use of materials sourced from local suppliers; ▪ Recycling of at least 75 percent of construction waste materials; and ▪ Project proponents shall incentivize that construction workers carpool, and/or use electric vehicles to commute to and from the project site. 	Significant and Unavoidable
Impact GHG-2. Operation of the 2045 MTP/SCS would not generate a net increase in GHG emissions by 2045 compared to baseline 2020 conditions. Impacts would be less than significant.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Impact
Impact GHG-3. Implementation of the 2045 MTP/SCS would not conflict with regional SB 375 per capita passenger vehicle CO ₂ emission reduction targets of 6 percent by 2035 from 2005 levels. Impacts would be less than significant.	None required.	Less than Significant
Impact GHG-4. Implementation of the 2045 MTP/SCS would conflict with the State's ability to achieve SB 32, EOs S-3-05 and B-55-18, and applicable local GHG reduction plan targets and goals. Impacts would be significant and unavoidable.	<p>GHG-4(a) Transportation-Related GHG Reduction Measures. The implementing agency shall incorporate the most recent GHG reduction measures and/or technologies for reducing VMT and associated transportation related GHG emissions. GHG-reducing mitigation measures include the following:</p> <ul style="list-style-type: none"> ▪ Installation of electric vehicle charging stations beyond those required by State and local codes ▪ Utilization of electric vehicles and/or alternatively-fueled vehicles in company fleet ▪ Provision of dedicated parking for carpools, vanpool, and clean air vehicles ▪ Provision of new or improved transit amenities (e.g., covered turnouts, bicycle racks, covered benches, signage, lighting) if project site is located along an existing transit route ▪ Expansion of existing transit routes ▪ Provision of employee lockers and showers ▪ Provision of on-site services that reduce the need for off-site travel (e.g., childcare facilities, automatic teller machines, postal machines, food services) ▪ Provision of alternative work schedule options, such as telework or reduced schedule (e.g., 9/80 or 10/40 schedules), for employees ▪ Implementation of transportation demand management programs to educate and incentivize residents and/or employees to use transit, smart commute, and alternative transportation options <p>GHG-4(b) Land Use Project Energy Consumption and Water Use Reduction Measures. For land use projects under their jurisdiction, the cities and counties in the AMBAG region can and should implement measures to reduce energy consumption, water use, solid waste generation, and VMT, all of which contribute to GHG emissions. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.</p>	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact
	<ul style="list-style-type: none"> Require new residential and commercial construction to install solar energy systems or be solar-ready Require new residential and commercial development to install low flow water fixtures Require new residential and commercial development to install water-efficient drought-tolerant landscaping, including the use of compost and mulch Require new development to exceed the applicable Title 24 energy-efficiency requirements Require new development to be fully electric 	
Hazards and Hazardous Materials		
Impact HAZ-1. Proposed transportation improvement projects and land use projects included in the 2045 MTP/SCS may facilitate the routine transport, use, or disposal of hazardous material, and may result in reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Impacts would be less than significant.	None required.	Less than Significant
Impact HAZ-2. Proposed transportation improvement projects and land use projects included in the 2045 MTP/SCS would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school. Impacts would be less than significant.	None required.	Less than Significant

2045 MTP/SCS and Regional Transportation Plans for Monterey, San Benito, and Santa Cruz Counties

Impact	Mitigation Measure(s)	Impact
Impact HAZ-3. The 2045 MTP/SCS includes land use projects and transportation projects that could occur on sites on the list of hazardous material sites compiled by Government Code Section 65962.5. Impacts would be significant and unavoidable.	HAZ-3 Site Remediation. If an individual project included in the 2045 MTP/SCS is located on or near a hazardous materials and/or waste site pursuant to Government Code Section 65962.5, the implementing agency shall prepare a Phase I ESA in accordance with the American Society for Testing and Materials' E-1527-05 standard. For work requiring any demolition or renovation, the Phase I ESA shall make recommendations for any hazardous building materials survey work that shall be done. All recommendations included in a Phase I ESA prepared for a site shall be implemented. If a Phase I ESA indicates the presence or likely presence of contamination, the implementing agency shall require a Phase II ESA, and recommendations of the Phase II ESA shall be fully implemented. Examples of typical recommendations provided in Phase I/II ESAs include removal of contaminated soil in accordance with a soil management plan approved by the local environmental health department; covering stockpiles of contaminated soil to prevent fugitive dust emissions; capturing groundwater encountered during construction in a holding tank for additional testing and characterization and disposal based on its characterization; and development of a health and safety plan for construction workers.	Significant and Unavoidable
Impact HAZ-4. Transportation improvement projects and land use development included in the proposed 2045 MTP/SCS located within an airport land use plan or within two miles of a public or public use airport would not result in a safety hazard or excessive noise for people residing or working in the project area. Impacts would be less than significant.	None required.	Less than Significant
Impact HAZ-5. Land use development and transportation projects included in the 2045 MTP/SCS would not impair implementation or physically interfere with adopted emergency response or evacuation plans. Impacts would be less than significant.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Impact
Hydrology and Water Quality		
Impact HWQ-1. Transportation improvements and future projects included in the land use scenario envisioned in the 2045 MTP/SCS would not violate water quality standards or waste discharge requirements, and would not substantially alter the existing drainage pattern of the site or area in a manner which would result in substantial erosion or siltation. Impacts would be less than significant.	None required.	Less than Significant
Impact HWQ-2. Transportation improvements and future projects included in the land use scenario envisioned in the 2045 MTP/SCS would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that sustainable groundwater management of the basin would be impeded or conflicts with sustainable groundwater management plans would result. Impacts would be less than significant.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Impact
Impact HWQ-3. Transportation improvements and future projects included in the land use scenario envisioned in the 2045 MTP/SCS would not substantially alter existing drainage patterns such that they would substantially increase the rate or amount of surface runoff or create or contribute runoff water which would exceed the capacity of stormwater drainage systems. Impacts would be less than significant.	None required.	Less than Significant
Impact HWQ-4. Transportation improvements and future projects included in the land use scenario envisioned in the 2045 MTP/SCS would not substantially alter drainage patterns in a manner which would impede or redirect floor flows, or risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones. This impact would be less than significant.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Impact
Impact HWQ-5. Transportation improvements and future projects included in the land use scenario envisioned in the 2045 MTP/SCS would not conflict with or obstruct implementation of a water quality control plan. Impacts would be less than significant.	None required.	Less than Significant
Land Use		
Impact LU-1. Implementation of proposed transportation improvements and the land use scenario envisioned by the 2045 MTP/SCS would not physically divide an established community. This impact would be less than significant.	None required.	Less than Significant
Impact LU-2. The 2045 MTP/SCS would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation and result in a physical change to the environment not already addressed in other resource chapters. This impact would be less than significant.	Mitigation measures are provided for applicable resources throughout their respective environmental issue area sections of the EIR to reduce impacts. No additional mitigation is required for this impact.	Less than Significant

Impact	Mitigation Measure(s)	Impact
Noise		
<p>Impact N-1. Construction activities associated with transportation projects and land use projects under the 2045 MTP/SCS would generate a substantial temporary increase in ambient noise levels in excess of standards or over existing noise levels, and would generate a substantial absolute noise increase over existing noise levels. Impacts would be significant and unavoidable.</p>	<p>N-1 Construction Noise Reduction. To reduce construction noise levels to achieve applicable standards, implementing agencies for transportation and land use projects shall implement the measures identified below where feasible and necessary.</p> <ul style="list-style-type: none"> ▪ Implementing agencies of 2045 MTP/SCS projects shall ensure that, where residences or other noise sensitive uses are located within 750 feet of construction sites, appropriate measures shall be implemented to ensure compliance with local ordinance requirements relating to construction noise. Specific techniques may include, but are not limited to: restrictions on construction timing, use of sound blankets on construction equipment, and the use of temporary walls and noise barriers to block and deflect noise. ▪ Designate an on-site construction complaint and enforcement manager for projects within 750 feet of sensitive receivers. ▪ Implementing agencies of the 2045 MTP/SCS shall post phone numbers for the on-site enforcement manager at construction sites along with complaint procedures and who to notify in the event of a problem. ▪ For any project within 6,000 feet of sensitive receptors that requires pilings, the implementing agencies shall require caisson drilling or sonic pile driving as opposed to impact pile driving, where feasible. This shall be accomplished through the placement of conditions on the project during its individual environmental review. ▪ Implementing agencies of 2045 MTP/SCS projects shall ensure that equipment and trucks used for project construction utilize the best available noise and vibration control techniques, including mufflers, intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds. ▪ Implementing agencies of 2045 MTP/SCS projects shall ensure that impact equipment (e.g., jack hammers, pavement breakers and rock drills) used for project construction be hydraulically or electrically powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatically powered tools is unavoidable, use of an exhaust muffler on the compressed air exhaust can lower noise levels from the exhaust by up to about 10 dBA. When feasible, external jackets on the impact equipment can achieve a reduction of 5 dBA. Whenever feasible, use quieter procedures, such as drilling rather than impact equipment operation. ▪ The following timing restrictions shall apply to MTP/SCS project construction activities located within 2,500 feet of a dwelling unit, except where timing restrictions are already established in local codes or policies. 	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact
	<ul style="list-style-type: none"> ▪ Construction activities shall be limited to: <ul style="list-style-type: none"> ▫ Monday through Friday: 7 a.m. to 6 p.m. ▫ Saturday: 9 a.m. to 5 p.m. ▪ Implementing agencies of 2045 MTP/SCS projects shall locate stationary noise and vibration sources as far from sensitive receptors as feasible. Stationary noise sources that must be located near existing receptors will be adequately muffled. 	
<p>Impact N-2. Construction activities associated with transportation projects and land use projects under the 2045 MTP/SCS would generate excessive groundborne vibration levels. Impacts would be significant and unavoidable.</p>	<p>N-2 Physical Impacts Due to Vibration. If construction equipment would generate vibration levels exceeding acceptable levels as established by Caltrans (65 VdB to 80 VdB depending on frequency of the event and 0.1 to 0.6 PPV in/sec depending on building type), implementing agencies of the 2045 MTP/SCS shall, or can and should, complete the following tasks:</p> <ul style="list-style-type: none"> ▪ Prior to construction, survey the project site for vulnerable buildings, and complete geotechnical testing (preconstruction assessment of the existing subsurface conditions and structural integrity), for any older or historic buildings within 50 feet of pile driving. The testing shall be completed by a qualified geotechnical engineer and qualified historic preservation professional and/or structural engineer. ▪ Prepare and submit a report to the lead agency that contains the results of the geological testing. If recommended by the preconstruction report implementing agencies shall require ground vibration monitoring of nearby historic structures. Methods and technologies shall be based on the specific conditions at the construction site. The preconstruction assessment shall include a monitoring program to detect ground settlement or lateral movement of structures in the vicinity of pile-driving activities and identify corrective measures to be taken should monitored vibration levels indicate the potential for building damage. In the event of unacceptable ground movement with the potential to cause structural damage, all impact work shall cease, and corrective measures shall be implemented to minimize the risk to the subject, or adjacent, historic structure. ▪ To minimize disturbance withing 550 feet of pile-driving activities, implement “quiet” pile-driving technology, such as predrilling of piles and the use of more than one pile driver to shorten the duration of pile driving), where feasible, in consideration of geotechnical and structural requirements and conditions as defined as part of the geotechnical testing, if testing was feasible. ▪ Use cushion blocks to dampen noise from pile driving. ▪ Phase operations of construction equipment to avoid simultaneous vibration sources. 	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact
<p>Impact N-3. Implementation of the 2045 MTP/SCS would generate a substantial permanent increase in ambient noise levels in excess of standards or over existing noise levels and generate a substantial absolute noise increase over existing noise levels. Impacts would be significant and unavoidable.</p>	<p>N-3 Noise Assessment and Control for Mobile and Point Sources. Sponsor agencies of 2045 MTP/SCS transportation projects shall complete detailed noise assessments using applicable guidelines (e.g., FTA Transit Noise and Vibration Impact Assessment for rail and bus projects and the Caltrans Traffic Noise Analysis Protocol) for roadway projects that may impact noise sensitive receivers. The implementing agency shall ensure that a noise survey is conducted that, at minimum:</p> <ul style="list-style-type: none"> ▪ Determines existing and projected noise levels ▪ Determines the amount of attenuation needed to reduce potential noise impacts to applicable State and local standards ▪ Identifies potential alternate alignments that allow greater distance from, or greater buffering of, noise-sensitive areas ▪ If warranted, recommends methods for mitigating noise impacts, including: <ul style="list-style-type: none"> ▪ Appropriate setbacks ▪ Sound attenuating building design, including retrofit of existing structures with sound attenuating building materials ▪ Use of sound barriers (earthen berms, sound walls, or some combination of the two) <p>Where new or expanded roadways, rail, or transit projects are found to expose receivers to noise exceeding normally acceptable levels, the implementing agency shall implement techniques as recommended in the project specific noise assessment. The preferred methods for mitigating noise impacts will be the use of appropriate setbacks (design adjustments) and sound attenuating building design, including retrofit of existing structures with sound attenuating building materials where feasible. In instances where use of these techniques is not feasible, the use of sound barriers (earthen berms, sound walls, or some combination of the two) shall be considered. Long expanses of walls or fences shall be interrupted with offsets and provided with accents to prevent monotony. Landscape pockets and pedestrian access through walls should be provided. Whenever possible, a combination of elements shall be used, including solid fences, walls, and landscaped berms. Other techniques such as rubberized asphalt or “quiet pavement” can be used where feasible to reduce road noise for new roadway segments or modifications requiring repaving. The effectiveness of noise reduction measures shall be monitored by taking noise measurements and installing adaptive mitigation measures to achieve applicable standards.</p>	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact
Impact N-4. The proposed 2045 MTP/SCS land use scenario would encourage infill development near transit and other transportation facilities, which would generate a substantial increase in ambient noise levels in excess of standards or over existing noise levels. Impacts would be significant and unavoidable.	N-4 Noise Mitigation for Land Uses. If a 2045 MTP/SCS land use project is located in an area with exterior ambient noise levels above local noise standards, the implementing agency can and should ensure that a noise study is conducted to determine the existing exterior noise levels in the vicinity of the project. If the project would be impacted by ambient noise levels, feasible attenuation measures shall be used to reduce operational noise to meet acceptable standards. In addition, noise insulation techniques shall be utilized to reduce indoor noise levels to thresholds set in applicable State and/or local standards. Such measures may include, but are not limited to: dual-paned windows, solid core exterior doors with perimeter weather stripping, air conditioning system so that windows and doors may remain closed, and situating exterior doors away from roads. The noise study and determination of appropriate mitigation measures shall be completed during the project's individual environmental review.	Significant and Unavoidable
Impact N-5. The proposed 2045 MTP/SCS would result in new truck, bus and train traffic that would generate excessive vibration levels. Impacts would be significant and unavoidable.	<p>N-5 Vibration Mitigation for Transportation Projects. Where local vibration and groundborne noise standards do not apply, implementing agencies of 2045 MTP/SCS projects shall comply with guidance provided by the FTA in the most recent version of the <i>Transit Noise and Vibration Impact Assessment</i> to assess impacts to buildings and sensitive receptors and reduce vibration and groundborne noise. FTA recommended thresholds shall be used except in areas where local standards for groundborne noise and vibration have been established. Methods that would be considered to reduce vibration and groundborne noise impacts include, but are not limited to:</p> <ul style="list-style-type: none"> ▪ Rail Traffic <ul style="list-style-type: none"> ▫ Maximizing the distance between tracks and sensitive uses ▫ Conducting rail grinding on a regular basis to keep tracks smooth ▫ Conducting wheel truing to re-contour wheels to provide a smooth-running surface and removing wheel flats ▫ Providing special track support systems such as floating slabs, resiliently supported ties, high-resilience fasteners and ballast mats; ▫ Implementing operational changes such as limiting train speed and reducing nighttime operations. ▪ Bus and Truck Traffic <ul style="list-style-type: none"> ▫ Constructing of noise barriers ▫ Use noise reducing tires and wheel construction on bus wheels ▫ Use vehicle skirts (i.e., a partial enclosure around each wheel with absorptive treatment) on freight vehicle wheels 	Significant and Unavoidable

2045 MTP/SCS and Regional Transportation Plans for Monterey, San Benito, and Santa Cruz Counties

Impact	Mitigation Measure(s)	Impact
Impact N-6. Proposed transportation improvements and future projects included in the land use scenario envisioned in the 2045 MTP/SCS would be located in close proximity to existing airports such that applicable exterior and interior noise thresholds would be exceeded. Impacts would be significant and unavoidable.	N-6 Noise Mitigation Near Airports. Local lead agencies for all new development proposed to be located within an existing airport influence zone, as defined by the locally adopted airport land use compatibility plan or local general plan, or within two miles of a private use airport, shall require a site specific noise compatibility study. The study shall consider and evaluate existing aircraft noise, based on specific aircraft activity data for the airport in question, and shall include recommendations for site design and building construction. Such measures may include, but are not limited to: dual-paned windows, solid core exterior doors with perimeter weather stripping, air conditioning system so that windows and doors may remain closed, and situating exterior doors away from roads, such as dual paned windows. The noise study and determination of appropriate mitigation measures shall be completed during the project's individual environmental review.	Significant and Unavoidable
Population and Housing		
Impact PH-1. The 2045 MTP/SCS would not induce substantial unplanned population growth, either directly or indirectly. This impact would be less than significant.	None required.	Less than Significant
Impact PH-2. Land use and transportation projects included in the 2045 MTP/SCS would temporarily displace existing housing and people but would not necessitate the construction of replacement housing elsewhere. Impacts would be less than significant.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Impact
Public Services, Recreation, and Utilities		
Impact PSU-1. The 2045 MTP/SCS would result in new or expanded governmental facilities, the implementation of which would result in substantial physical impacts. This impact would be significant and unavoidable.	PSU-1 Increased Public Service Demand. During the CEQA review process for individual facilities, the implementing agency with responsibility for construction of new public service facilities or the expansion of existing facilities, including those of fire and police services, parks, and other public facilities, can and should apply necessary mitigation measures to avoid or reduce significant environmental impacts associated with the construction or expansion of such facilities. The environmental impacts associated with such construction or expansion should be avoided or reduced through the imposition of conditions required to be followed by those directly involved in the construction or expansion activities. Such conditions should include those necessary to avoid or reduce significant impacts associated with air quality, noise, transportation, biological resources, cultural resources, greenhouse gas emissions, hydrology and water quality, and others that apply to specific construction or expansion of new public or expanded public service facilities.	Significant and Unavoidable
Impact PSU-2. The 2045 MTP/SCS would require the provision of new schools, the construction of which would result in substantial physical impacts. Impacts would be less than significant because of state regulations mandating development impact fees.	None required.	Less than Significant
Impact PSU-3. The 2045 MTP/SCS would increase the use of existing parks and recreational facilities, resulting in substantial physical deterioration, and would include recreational facilities that would have an adverse physical effect on the environment. This impact would be significant and unavoidable.	PSU-3 Impact Reduction from New Recreational Facilities. During project specific design and CEQA review, the cities and counties in the AMBAG region, and other agencies with responsibility for the construction of new or expanded recreation facilities, can and should apply necessary mitigation measures to avoid or reduce significant environmental impacts associated with the construction of such facilities. The environmental impacts associated with such construction should be avoided or reduced through the imposition of conditions required to be followed by those directly involved in the construction or expansion activities. Such conditions should include those necessary to avoid or reduce significant impacts associated with air quality, noise, transportation, biological resources, cultural resources, greenhouse gas emissions, hydrology and water quality, and others that apply to specific construction of new or expanded recreation facilities, including recreational trails.	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact
<p>Impact PSU-4. Proposed transportation improvements and land use projects envisioned by the 2045 MTP/SCS would require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction of which would cause significant environmental effects. This impact would be significant and unavoidable.</p>	<p>PSU-4(a) Water and Wastewater Treatment Facilities. During the CEQA review process for individual facilities, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies, and cities and counties in the AMBAG region and other utility providers with responsibility for the construction of new water or wastewater treatment and collection facilities or the expansion of existing facilities can and should apply necessary mitigation measures to reduce significant environmental impacts associated with the construction or expansion of such facilities. The environmental impacts associated with such construction or expansion should be avoided or reduced through the imposition of conditions required to be followed by those directly involved in the construction or expansion activities. Such conditions should include those necessary to avoid or reduce impacts associated with air quality, noise, traffic, biological resources, cultural resources, greenhouse gas emissions, hydrology and water quality and others that apply to specific construction or expansion of water or wastewater treatment and collection facilities projects.</p> <p>PSU-4(b) Stormwater Facilities. During the CEQA review process for individual facilities, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies, and cities and counties in the AMBAG region and special districts with responsibility for the construction of new stormwater drainage facilities or the expansion of existing facilities to adequately meet projected capacity needs can and should apply necessary mitigation measures to avoid or reduce significant environmental impacts associated with the construction or expansion of such facilities. The environmental impacts associated with such construction or expansion should be avoided or reduced through the imposition of conditions required to be followed by those directly involved in the construction or expansion activities. Such conditions should include those necessary to avoid or reduce impacts associated with air quality, noise, traffic, biological resources, cultural resources, greenhouse gas emissions, hydrology and water quality, and others that apply to specific construction or expansion of storm water drainage facilities projects.</p> <p>PSU-4(c) Stormwater Control Methods. During the CEQA review process for individual facilities, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following measures where feasible:</p> <ul style="list-style-type: none"> For transportation projects, incorporate stormwater control, retention, and infiltration features, such as detention basins, bioswales, vegetated median strips, and permeable paving, early into the design process to ensure such features are analyzed during environmental review. Implement mitigation measures identified for such features on a project specific basis, where feasible and necessary based on project and site specific considerations. <p>PSU-4(d) Electric Power, Natural Gas, or Telecommunications Facilities. During the CEQA review process, cities, counties, and AMBAG region energy and telecommunications providers and regulatory</p>	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact
	<p>agencies with responsibility for the construction or approval of new electric power, natural gas, or telecommunications facilities or the expansion of existing facilities to adequately meet projected capacity needs can and should apply necessary mitigation measures to avoid or reduce significant environmental impacts associated with the construction or expansion of such facilities. The environmental impacts associated with such construction or expansion should be avoided or reduced through the imposition of conditions required to be followed by those directly involved in the construction or expansion activities. Such conditions should include those necessary to avoid or reduce impacts associated with air quality, noise, traffic, biological resources, cultural resources, greenhouse gas emissions, hydrology and water quality, and others that apply to specific construction or expansion of natural gas and electric facilities projects.</p>	
<p>Impact PSU-5. Proposed transportation improvements and land use projects envisioned by the 2045 MTP/SCS would generate solid waste in excess of the capacity of local infrastructure. This impact would be significant and unavoidable.</p>	<p>PSU-5 Solid Waste Generation and Disposal. During the CEQA review process for individual facilities, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies, and cities and counties in the AMBAG region can and should implement, the following measures where feasible:</p> <ul style="list-style-type: none"> ▪ Provide an easily accessible area that is dedicated to the collection and storage of non-hazardous recycling materials. ▪ Maintain or reuse existing building structures and materials during building renovations and redevelopment. ▪ Use salvaged, refurbished, or reused materials to help divert such items from landfills. ▪ Divert construction waste from landfills, where feasible, through means such as: <ul style="list-style-type: none"> ▫ Submitting and implementing a construction waste management plan that identifies materials to be diverted from disposal; ▫ Establishing diversion targets, possibly with different targets for different types and scales of development; ▫ Helping project sponsors and implementing agencies share information on available materials with one another, to aid in the transfer and use of salvaged materials. 	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact
<p>Impact PSU-6. Proposed transportation improvements and land use development projects envisioned by the 2045 MTP/SCS would be required to comply with all relevant statutes and regulations related to solid waste. This impact would be less than significant.</p>	<p>None required.</p>	<p>Less than Significant</p>
<p>Impact PSU-7. Implementation of proposed transportation improvements and future projects included in the land use scenario envisioned in the 2045 MTP/SCS would increase water demand in the AMBAG region such that water supplies may be insufficient to serve envisioned development. Impacts would be significant and unavoidable.</p>	<p>PSU-7(a) General Conservation Measures. Agencies implementing land use and transportation projects that could increase water demand shall, or can and should, coordinate with relevant water services to ensure demand can be accommodated and identify a water consumption budget. Any existing water conservation measures that reduce demand for potable water, such as reducing water use for landscape irrigation for transportation projects or use of water-conserving fixtures in envisioned land use projects, should be employed. Reclaimed water should be used when possible.</p> <p>PSU-7(b) Construction Dust Suppression Water Supply. Implementing agencies shall, or can and should, ensure that for all 2045 MTP/SCS projects, where feasible, reclaimed and/or desalinated water is used for dust suppression during construction activities. This measure shall, or can and should, be noted on construction plans and shall be spot checked by the implementing agency.</p> <p>PSU-7(c) Landscape Watering. In jurisdictions that do not already have an applicable local regulatory program related to landscape watering, implementing agencies shall, or can and should, design 2045 MTP/SCS projects that would include landscaping shall be designed with drought tolerant plants and drip irrigation. When feasible, native plant species shall be used. In addition, landscaping associated with proposed improvements shall be maintained using reclaimed and/or desalinated water when feasible.</p> <p>PSU-7(d) Porous Pavement and Bioswale Installation. In jurisdictions that do not already have an appropriate local regulatory program related to porous pavement, implementing agencies for a 2045 MTP/SCS project that involves streetscaping, parking, transit and/or land use improvements shall, or can and should, ensure that porous pavement materials are utilized, where feasible, to allow for groundwater percolation. Additionally, if a project would substantially increase impervious surfaces the sponsor shall ensure that bioswales are installed, where feasible, to facilitate groundwater recharge using stormwater runoff from the project site while improving water quality if not already required by the appropriate jurisdiction's local regulatory programs.</p>	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact
Transportation		
Impact T-1. The 2045 MTP/SCS would not result in a significant impact due to conflicts with any programs addressing the circulation system. This impact would be less than significant.	None required.	Less than Significant
Impact T-2. The 2045 MTP/SCS would result in an increase to Daily VMT per capita between the baseline 2020 conditions and 2045 conditions. Per capita VMT impacts from implementation of the 2045 MTP/SCS would be significant and unavoidable. The induced travel impact at the regional level would be less than significant.	<p>T-2(a) Land Use Project VMT Analysis and Reduction. Regionally, implementing agencies shall require implementation of VMT reduction strategies through transportation demand management (TDM) programs, impact fee programs, mitigation banks or exchange programs, in-lieu fee programs, and other land use project conditions that reduce VMT. Programs shall be designed to reduce VMT from existing land uses, where feasible, and from new discretionary residential or employment land use projects. The design of programs shall focus on VMT reduction strategies that increase travel choices and improve the comfort and convenience of sharing rides in private vehicles, using public transit, biking, or walking.</p> <p>At a project level, implementing agencies shall evaluate VMT as part of project specific CEQA review and discretionary approval decisions for land use projects. Where project level significant impacts are identified, implementing agencies shall identify and implement measures that reduce VMT. Examples include but are not limited to:</p> <ul style="list-style-type: none"> ▪ Provide car-sharing, vanpool, bike sharing, and ride-sharing programs ▪ Implement or provide access to commute reduction programs ▪ Encourage telecommute programs ▪ Incorporate affordable housing into the project ▪ Increase density, infill, and transit oriented development ▪ Increase mixed uses within the project area ▪ Incorporate improved pedestrian connections within the project/neighborhood ▪ Incentivize development in low VMT communities ▪ Incentivize housing near commercial and offices ▪ Increase access to goods and services, such as groceries, schools, and daycare ▪ Orient the project toward transit, bicycle, and pedestrian facilities 	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact
	<ul style="list-style-type: none"> ▪ Implement complete streets ▪ Provide traffic calming ▪ Provide bicycle parking ▪ Reduce parking requirements ▪ Separate out parking costs ▪ Provide parking cash-out programs <p>T-2(b) Transportation Project VMT Reduction and Analysis. Transportation project sponsor agencies shall evaluate transportation projects that involve increasing roadway capacity for their potential to increase VMT. Where project level increases are found to be potentially significant, implementing agencies shall, or can and should, identify and implement measures that reduce VMT. Examples of measures that reduce the VMT associated with increases in roadway capacity include, but are not limited to:</p> <ul style="list-style-type: none"> ▪ Tolling new lanes to encourage carpools and fund transit improvements ▪ Converting existing general purpose lanes to high occupancy vehicle lanes ▪ VMT banks ▪ Implementing or funding offsite travel demand management ▪ Providing a bus rapid transit system ▪ Improving pedestrian or bicycle networks, or transit service ▪ Providing transit passes ▪ Incorporating neighborhood electric vehicle network 	
Impact T-3. The 2045 MTP/SCS would not substantially increase hazards due to geometric design features or incompatible uses. Impacts would be less than significant.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Impact
Impact T-4. The 2045 MTP/SCS would not result in inadequate emergency vehicle access. Impacts would be less than significant.	None required.	Less than Significant
Tribal Cultural Resources		
Impact TCR-1. Implementation of proposed transportation improvements and future projects included in the land use scenario envisioned in the 2045 MTP/SCS would cause a substantial adverse change in the significance of a tribal cultural resource. Impacts would be significant and unavoidable.	<p>TCR-1 Tribal Cultural Resources Impact Minimization. Implementing agencies shall, or can and should, comply with AB 52, which may require formal tribal consultation. If the implementing agency determines that a project may cause a substantial adverse change to a tribal cultural resource, they shall, or can and should, implement mitigation measures identified in the consultation process required under PRC Section 21080.3.2, or shall, or can and should, implement the following measures where feasible to avoid or minimize the project specific significant adverse impacts:</p> <ul style="list-style-type: none"> ▪ Avoidance and preservation of the resources in place, including, but not limited to planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria. ▪ Treating the resource with culturally appropriate dignity considering the tribal cultural values and meaning of the resource, including, but not limited to, the following: <ul style="list-style-type: none"> ▫ Protecting the cultural character and integrity of the resource ▫ Protecting the traditional use of the resource ▫ Protecting the confidentiality of the resource ▫ Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places ▪ Native American monitoring by the appropriate tribe for all projects in areas identified as sensitive for potential tribal cultural resources and/or in the vicinity (within 100 feet) of known tribal cultural resources ▪ If potential tribal cultural resources are encountered during ground-disturbing activities; work in the immediate area must halt and the appropriate tribal representative(s), the implementing agency, and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the find and determine the proper course of action 	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact
Wildfire		
<p>Impact W-1. Proposed transportation improvements and land use projects envisioned by the 2045 MTP/SCS would be located in or near an SRA or very high fire hazard severity zone, and significant risks of loss, injury, or death from wildfires would occur. Impacts would be significant and unavoidable.</p>	<p>W-1 Wildfire Risk Reduction. If an individual transportation or land use project included in the 2045 MTP/SCS is within or less than two miles from an SRA or VHFHSZ, the implementing agency shall require appropriate mitigation to reduce the risk. Examples of mitigation to reduce risk of loss, injury or death from wildfire include, but are not limited to:</p> <ul style="list-style-type: none"> ▪ Enforce defensible space regulations to keep overgrown and unmanaged vegetation, accumulations of trash and other flammable material away from structures. ▪ Provide public education about wildfire risk, fire prevention measures, and safety procedures and practices to allow for safe evacuation and/or options to shelter-in-place. ▪ Require adherence to the local hazard mitigation plan, as well as the local general plan policies and programs aimed at reducing the risk of wildfires through land use compatibility, training, sustainable development, brush management, public outreach, and service standards for fire departments. ▪ Ensure sufficient emergency water supply ▪ Encourage the use of fire-resistant vegetation native to Santa Cruz, Monterey, and San Benito counties and/or the local microclimate of the project site and discourage the use of fire-prone species especially non-native, invasive species. ▪ Require a fire safety plan be submitted to and approved by the local fire protection agency. The fire safety plan shall include all the fire safety features incorporated into the project and the schedule for implementation of the features. The local fire protection agency may require changes to the plan or may reject the plan if it does not adequately address fire hazards associated with the project as a whole or the individual phase of the project. ▪ Prohibit certain project construction activities with potential to ignite wildfires during red-flag warnings issued by the National Weather Service for the project site location. Example activities that should be prohibited during red-flag warnings include welding and grinding outside of enclosed buildings. ▪ Require fire extinguishers to be on site during construction of projects. Fire extinguishers shall be maintained to function according to manufacturer specifications. Construction personnel shall receive training on the proper methods of using a fire extinguisher. 	<p>Significant and Unavoidable</p>

1 Introduction

This document is an Environmental Impact Report (EIR) for a proposed 2045 Metropolitan Transportation Plan-Sustainable Communities Strategy (2045 MTP/SCS) proposed by the Association of Monterey Bay Area Governments (AMBAG) and the Regional Transportation Plans (RTPs) for the counties of Monterey, San Benito, and Santa Cruz.

Section 21000 et seq. of the California Public Resources Code, commonly referred to as the California Environmental Quality Act of 1970 (CEQA), requires the evaluation of environmental impacts associated with all planning programs or development projects proposed. As such, this EIR is an informational document for use by AMBAG, other agencies and the general public in their consideration and evaluation of the environmental consequences of implementing the proposed 2045 MTP/SCS and RTPs for the counties of Monterey, San Benito and Santa Cruz.

This section discusses (1) the purpose of this EIR; (2) 2045 MTP/SCS and EIR background; (3) the type of environmental document prepared for the 2045 MTP/SCS; (4) the content and format of the EIR; (5) the environmental review process required under CEQA; and (6) the lead, responsible and trustee agencies. The proposed project is described in detail in Section 2, *Project Description*.

1.1 Purpose and Legal Authority

This EIR has been prepared in compliance with the CEQA Statutes and Guidelines. In general, the purpose of an EIR is to (see *State CEQA Guidelines* Section 15121(a)):

- a. Analyze the environmental effects of the adoption and implementation of the Plan;
- b. Inform decision-makers, responsible and trustee agencies and members of the public as to the range of the environmental impacts of the Plan;
- c. Recommend a set of measures to mitigate significant adverse impacts; and
- d. Analyze a range of reasonable alternatives to the proposed Plan.

As the lead agency for preparing this EIR, AMBAG will rely on the EIR analysis of environmental effects in their review and consideration of the proposed 2045 MTP/SCS prior to approval. Responsible Regional Transportation Planning Agencies will rely on the EIR analysis prior to approval of their respective Regional Transportation Plans.

As discussed in further detail below in Section 1.4.1, *CEQA Streamlining Opportunities*, SB 375 provides streamlining benefits for certain transit oriented projects consistent with an adopted SCS. Pursuant to these provisions of SB 375, this EIR has also been prepared to allow qualifying projects to streamline their environmental review.

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1.2 Background

The Transportation Agency for Monterey County (TAMC), the Council of San Benito County Governments (SBtCOG) and the Santa Cruz County Regional Transportation Commission (SCCRTC) are the state-designated Regional Transportation Planning Agencies (RTPAs) for Monterey, San Benito and Santa Cruz counties, respectively. Each RTPA prepares a county-level long-range Regional Transportation Plan (RTP).

As the metropolitan planning organization (MPO) for the tri-county region of Monterey, San Benito, and Santa Cruz counties, AMBAG is charged with developing a Monterey Bay Area Metropolitan Transportation Plan and the Sustainable Communities Strategy, the 2045 MTP/SCS, in compliance with SB 375 (Chapter 728, Statutes of 2008). The MTP is the metropolitan long-range transportation plan for the three counties and is a compilation of the transportation projects included in the Monterey County Regional Transportation Plan (2045 MC-RTP), the 2045 San Benito County Regional Transportation Plan (2045 SBC-RTP) and the 2045 Santa Cruz County Regional Transportation Plan (2045 SCC-RTP). The most recent MTP/SCS was adopted by AMBAG in June 2018. A program environmental impact report (EIR) was prepared for the Monterey Bay 2040 MTP/SCS and the RTPs prepared by the Monterey, San Benito and Santa Cruz County RTPAs.

The 2040 MTP/SCS programmed available transportation funding to 2040 and included lists of programmed and planned transportation projects to improve the transportation system through 2040. Among these listed projects were highway, road and street projects, pedestrian and bikeway projects, aviation projects, rail projects and transit projects, as well as programs for transportation demand management and intelligent transportation systems. Although several projects from the 2040 MTP/SCS have been completed, many have not. In addition, new projects have been incorporated into the 2045 MTP/SCS from the RTPs prepared by the Monterey, San Benito, and Santa Cruz RTPAs.

1.2.1 Environmental Impact Report Background

In compliance with the *State CEQA Guidelines* (Section 15063), AMBAG, as the Lead Agency responsible for the 2045 MTP/SCS, solicited preliminary public agency comments on the project through distribution of a Notice of Preparation (Appendix A) and receipt of public comments during three scoping meetings held at the following locations:

- a. Santa Cruz, California, on January 22, 2020 from 6:00 PM to 7:30 PM at the Live Oak Community Room - Simpkins Center, 979 17th Avenue;
- b. Hollister, California, on January 23, 2020 from 6:00 PM to 7:30 PM at the San Benito County Board of Supervisors Chambers, 481 4th Street; and
- c. Monterey, California, on January 29, 2020 from 6:00 PM to 7:30 PM at the Marina Library Community Room, 190 Seaside Circle.

The purpose of the NOP and the scoping meetings was to provide information about the proposed project to the public and members of public agencies, and to solicit comments on

the scope of the environmental impacts analysis. Pursuant to CEQA Guidelines Section 15063, the NOP was circulated for a minimum of 30 days, with the comment period closing on February 14, 2020. However, AMBAG has accepted comments that were submitted within the days following closure of the NOP comment period.

Table 1-1 summarizes the comments received in response to circulation of the NOP and indicates how and where these comments are addressed in the Draft EIR, as applicable. The table also includes verbal comments pertaining to the EIR that were provided at one or more of the scoping meetings held during the NOP comment period.

Table 1-1 NOP Comments and EIR Response

Commenter	Comment/Request	How and Where Comment Addressed
California Department of Fish and Wildlife	Requests EIR evaluate wildlife impacts related to water pollution, including sedimentation from erosion caused by project construction.	Refer to Section 4.4, <i>Biological Resources</i> , for an analysis impacts of the proposed 2045 MTP/SCS on wildlife and wildlife habitat, including riparian and aquatic habitat. Water quality impacts, including short-term impacts from construction activities, are evaluated in Section 4.10, <i>Hydrology and Water Quality</i> .
California Department of Fish and Wildlife	Requests EIR evaluate potential impacts to migratory nesting birds and birds of prey and potential conflicts with Fish and Game Code 3503 and 3513 protecting these birds.	Refer to Section 4.4, <i>Biological Resources</i> , for an analysis impacts of the proposed 2045 MTP/SCS on wildlife and wildlife habitat, including nesting birds and birds of prey.
California Department of Fish and Wildlife	Provides a list of special-status species with potential to occur in the AMBAG region and requests the EIR analyze impacts to special-status species. Provides a list of mitigation measures that may reduce impacts to special-status species.	Refer to Section 4.4, <i>Biological Resources</i> , for an analysis impacts of the proposed 2045 MTP/SCS on wildlife and wildlife habitat, including special-status species.
California Department of Fish and Wildlife	Requests EIR evaluate potential impacts to regulated waterbodies and discuss Streambed Alteration Agreement regulations as they related to riparian, stream, wetland, and lake impacts. Provides a list of mitigation measures that may reduce impacts to wetlands and waterways.	Refer to Section 4.4, <i>Biological Resources</i> , for an analysis impacts of the proposed 2045 MTP/SCS on wetlands and aquatic habitat. Section 4.4 also discusses regulations and policies pertaining to biological resources, including Streambed Alteration Agreements.

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Commenter	Comment/Request	How and Where Comment Addressed
California Department of Fish and Wildlife	Requests the EIR evaluate cumulative impacts to wildlife. Cumulative impacts of transportation and land development infrastructure in watersheds should be evaluated.	Refer to Section 4.4, <i>Biological Resources</i> , for an analysis impacts of the proposed 2045 MTP/SCS on wildlife and wildlife habitat. Cumulative impacts are addressed in Section 6, <i>Other CEQA Required Discussions</i> .
California Department of Fish and Wildlife	Recommends consulting with USFWS and National Marine Fisheries Service on potential impacts to federally listed species.	Refer to Section 4.4, <i>Biological Resources</i> , for an analysis impacts of the proposed 2045 MTP/SCS on special-status species, including federally listed species. The EIR provides a programmatic analysis of potential impacts to special-status species, as individual transportation projects included in the 2045 MTP/SCS have yet to be designed. When individual projects are designed and proposed, consultation with USFWS and/or National Marine Fisheries Service may be required, based on site conditions and project design.
California Department of Fish and Wildlife	Requests information collected during biological baseline surveys be compiled and uploaded to the California Natural Diversity Database.	The EIR analyzes potential impacts of the 2045 MTP/SCS on a program level, as specific transportation projects and land use development site plans have yet to be developed. Because the analysis is programmatic for the entire AMBAG region, baseline surveys for biological resources were unnecessary and impractical for this EIR analysis. As individual projects included in the 2045 MTP/SCS are proposed and designed, project level environmental review may be required, depending on the project and site conditions. At that time, baseline surveys may be required to support the project level analysis.
California Department of Fish and Wildlife	Summarizes requirements for payment of CEQA filing fees.	AMBAG will provide the required filing fees with the Notice of Determination, should the 2045 MTP/SCS be approved.

Commenter	Comment/Request	How and Where Comment Addressed
Native American Heritage Commission	AB 52 and SB 18 Native American Consultation requirement may apply to the project. Please ensure consultation is conducted, as applicable.	AMBAG has completed the required AB 52 consultation with affected Native American tribes. Please refer to Section 4.16, <i>Tribal Cultural Resources</i> , for a summary of consultation completed. Section 4.16 also provides an analysis of potential impacts of the 2045 MTP/SCS on tribal cultural resources.
Organization Comments		
Coastal Rail Santa Cruz	AMBAG should consider supporting state efforts to require local jurisdictions to better manage land use and transportation decisions in tandem.	This comment does not pertain to the EIR. AMBAG supports unification of land use and transportation planning decisions. The 2045 MTP/SCS is the document that outlines both the transportation projects and land use configuration for the AMBAG region. The 2045 MTP/SCS is designed to maintain and foster the balance between jobs and housing within the AMBAG region and provides a strategy to allocate growth in such a way as to achieve a more balanced jobs/housing ratio and to optimize transportation investments that support those land uses.
Coastal Rail Santa Cruz	Supports efforts to expedite rail transit projects, which reduce GHG emissions.	This comment primarily pertains to the prioritization of projects included on the 2045 MTP/SCS project list and not the program-level analysis of environmental effects of the 2045 MTP/SCS. However, refer to Section 4.8, <i>Greenhouse Gas Emissions/Climate Change</i> , for an analysis GHG related impacts of the proposed 2045 MTP/SCS.
Monterey Bay Salmon & Trout Project	EIR should evaluate potential impacts to coastal, estuarine, and riparian habitat, hydrology, and water quality that is critical to fish, particularly salmonids.	Refer to Section 4.4, <i>Biological Resources</i> , for an analysis impacts of the proposed 2045 MTP/SCS on wildlife and wildlife habitat, including fish, aquatic habitat, and riparian habitat. Refer to Section 4.10, <i>Hydrology and Water Quality</i> , for an analysis of potential impacts to water quality.

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Commenter	Comment/Request	How and Where Comment Addressed
Monterey County Farm Bureau	Reliable transportation is important for the delivery of produce and other agricultural products. The roadway network is necessary for agricultural workers to move through the region. Congestion of region roadways continues to worsen, and new roads are needed. A list of roadway projects that should be completed is provided.	<p>This comment pertains primarily to the types and prioritization of projects included in the 2045 MTP/SCS. This EIR does not propose transportation projects, but instead evaluates the projects included in the 2045 MTP/SCS.</p> <p>This comment also describes traffic congestion on area roadways. Pursuant to Section 15064.3 of the <i>State CEQA Guidelines</i>, this EIR does not evaluate traffic congestion as an environmental impact. However, other transportation impacts, such as vehicle miles traveled (VMT), are evaluated in Section 4.15, <i>Transportation</i>. Refer to Section 4.2, <i>Agriculture and Forestry Resources</i>, for an analysis of potential impacts to agriculture and farmland.</p>
Monterey County Farm Bureau	Active transportation and transit projects included in the 2045 MTP/SCS will not serve agricultural uses. Requests the EIR include potential solutions to increase roadway capacity and consider agricultural transportation needs.	<p>This comment pertains primarily to the types and prioritization of projects included in the 2045 MTP/SCS. This EIR does not propose transportation projects, but instead evaluates the projects included in the 2045 MTP/SCS.</p> <p>Refer to Section 4.2, <i>Agriculture and Forestry Resources</i>, for an analysis of potential impacts to agriculture and farmland.</p>
Moss Landing Harbor District	Series of comments pertaining to the scope and content of the EIR for the proposed Central Coast Highway 1 Climate Resiliency Study.	This comment letter pertains to a different project that is not the 2045 MTP/SCS, which is a planning study and not an EIR. The comment letter was mistakenly submitted for the 2045 MTP/SCS EIR. Therefore, this comment letter is not addressed in this EIR. AMBAG has responded directly to the commenter to clarify this point.
Santa Cruz County Friends of the Rail & Trail	AMBAG should consider supporting state efforts to require local jurisdictions to better manage land use and transportation decisions in tandem to better reduce regional GHG emissions.	This comment does not pertain to the EIR. AMBAG supports unification of land use and transportation planning decisions. The 2045 MTP/SCS is document that outlines both the transportation projects and land use configuration for the AMBAG region. The 2045 MTP/SCS is designed to

Commenter	Comment/Request	How and Where Comment Addressed
		<p>maintain and foster the balance between jobs and housing within the AMBAG region and provides a strategy to allocate growth in such a way as to achieve a more balanced jobs/housing ratio and to optimize transportation investments that support those land uses.</p> <p>While this comment does not directly pertain to the EIR, it does pertain to GHG emissions and climate change. Refer to Section 4.8, <i>Greenhouse Gas Emissions/Climate Change</i>, for an analysis GHG related impacts of the proposed 2045 MTP/SCS.</p>
Public Comments		
Sam Teel	Requests the EIR evaluate economic impacts.	This EIR is a document that provides a programmatic evaluation of potential environmental impacts of implementing the proposed 2045 MTP/SCS. These impacts are evaluated in Section 4, <i>Environmental Impact Analysis</i> , of the EIR. The environmental issues addressed in this EIR are based on the <i>State CEQA Guidelines</i> , notably Appendix G to the <i>State CEQA Guidelines</i> . Economic impacts are not an environmental impact and are not a CEQA issue identified in the <i>State CEQA Guidelines</i> .
Sam Teel	Suggests the percentage of roadway projects and active transportation projects included in the 2045 MTP/SCS be based on the percentage of trips made using vehicles versus active transportation modes in the region.	This comment pertains primarily to the types and prioritization of projects included in the 2045 MTP/SCS. This EIR does not propose transportation projects, but instead evaluates the projects included in the 2045 MTP/SCS.
Sam Teel	States that increased transit use reduces air pollution.	Please refer to Section 4.3, <i>Air Quality</i> , for an analysis air quality related impacts of the proposed 2045 MTP/SCS. The analysis in Section 4.3 accounts for transit projects included in the 2045 MTP/SCS.

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Commenter	Comment/Request	How and Where Comment Addressed
Verbal Comments from Scoping Meetings		
Unspecified	Requests the EIR analyze greenhouse gas emissions and climate change impacts, such as sea level rise and loss of beach habitat.	Refer to Section 4.8, <i>Greenhouse Gas Emissions/Climate Change</i> , for an analysis of potential GHG impacts, including climate change impacts, such as sea level rise. Potential impacts to habitat are evaluated in Section 4.4, <i>Biological Resources</i> . Refer to Section 4.10, <i>Hydrology and Water Quality</i> , for a discussion of flooding-related impacts.
Unspecified	Requests the EIR evaluate the provision of charging stations for electric vehicles and increased use of solar energy in the region as mitigation or measures for reducing greenhouse gas emissions and energy consumption impacts.	Refer to Section 4.8, <i>Greenhouse Gas Emissions/Climate Change</i> , for a discussion of greenhouse gas emissions and related impacts. Refer to Section 4.6, <i>Energy</i> , for a discussion of energy consumption impacts.
Unspecified	Requests the EIR evaluate cumulative impacts.	Analysis of cumulative impacts for each issue area is provided in Section 6, <i>Other CEQA Required Discussions</i> .
Unspecified	Requests the EIR evaluate alternatives to personal vehicle use, such as transit, improvement of bicycle facilities, van programs, and more rail transit.	Refer to Section 7, <i>Alternatives</i> , for a description of alternatives to the 2045 MTP/SCS that were analyzed in this EIR. Section 7 also describes alternatives that were eliminated from detailed consideration in this EIR.

Note: Comments in this table are paraphrased versions derived from comment letters. Full comment letters, as well as the NOP, are included as Appendix A to the EIR.

Please note, several attendees of the scoping meetings voiced comments pertaining to traffic congestion and level of service. Traditionally, traffic congestion was evaluated as an environmental impact in CEQA documents. However, the most recent version of the *State CEQA Guidelines* replace traffic congestion with VMT as the metric for evaluating transportation impacts (Section 15064.3). Therefore, comments pertaining to traffic congestion are not summarized in Table 1-1 as they are no longer relevant to the EIR or impact analysis.

1.3 Type of Environmental Document

This document is a Program EIR. Section 15168(a) of the *State CEQA Guidelines* states that:

A Program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either: (1) geographically; (2) as logical parts in a chain of contemplated actions; (3) in connection with issuance of rules, regulations, plans, or other general criteria, to govern the conduct of a continuing program; or (4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.

As a programmatic document, this EIR presents a regionwide assessment of the impacts of the proposed 2045 MTP/SCS and the RTPs prepared by the Monterey, San Benito, and Santa Cruz RTPAs. Analysis of site specific impacts of individual projects is not required in a program EIR. Many specific projects are not currently defined to the level that would allow for such an analysis. Individual specific environmental analysis of each project will be undertaken as necessary by the appropriate implementing agency prior to each project being considered for approval. This program EIR serves as a first-tier environmental document under CEQA supporting second-tier environmental documents for:

- Transportation projects developed during the engineering design process; and
- Land use and development projects, including residential or mixed use projects and transit priority projects consistent with the SCS.

Agencies implementing subsequent projects (“implementing agencies”) would undertake future environmental review for projects in the proposed 2045 MTP/SCS. Implementing agencies, as referred to in this document, are the three counties and RTPAs making up AMBAG (Monterey, Santa Cruz, and San Benito), the cities within those counties, and other implementing agencies within the tri-county region. Agencies that would implement a transportation project are also referred to herein as sponsor agencies in this EIR. This would include Caltrans, Amtrak and transit agencies operating in the region, among others. All of these agencies, as well as the AMBAG member agencies, would be able to prepare subsequent environmental documents that incorporate by reference the appropriate information from this program EIR regarding secondary effects, cumulative impacts, broad alternatives and other relevant factors. If the lead agency finds that implementation of a later activity would have no new effects and that no new mitigation measures would be required, that activity would require no additional CEQA review. Where subsequent environmental review is required, such review would focus on project specific significant effects peculiar to the project, or its site, that have not been considered in this program EIR (*State CEQA Guidelines* Section 15168).

1.4 Implementation Issues and Future Environmental Review

The 2045 MTP/SCS contains hundreds of transportation projects that will be implemented over time. Implementation of the 2045 MTP/SCS will follow a schedule based on the funding and demand for individual transportation projects and improvements. Implementation of the SCS component of the 2045 MTP/SCS will require cooperation of the AMBAG member agencies and municipalities in the AMBAG region.

Implementation of the projects addressed in the 2045 MTP/SCS must individually demonstrate compliance with the requirements of CEQA and/or NEPA (for projects requiring federal funding or approvals). As appropriate, individual projects may be required to prepare a project level analysis to fulfill CEQA and/or NEPA requirements. The lead agency responsible for reviewing these projects shall determine the level of review needed, and the scope of that analysis will depend on the specifics of the particular project. These projects may, however, use the discussion of impacts in this program EIR as a basis of their assessment of these regional or cumulative impacts. These projects may also be eligible for CEQA streamlining under SB 375, as explained further below.

This program EIR is a first-tier document that addresses the environmental impacts that may affect the three-county AMBAG region from adoption and implementation of 2045 MTP/SCS. “Tiering” generally refers to using the analysis of a broader environmental document that covers the general impacts of a program or larger-scale project so that subsequent environmental documents for a related individual project can be narrow and focused on unique or unanalyzed issues. CEQA encourages the use of tiering to reduce the time and excessive paperwork involved in the review process by eliminating repetitive analyses of issues that were addressed in the program EIR (CEQA Guidelines Section 15168). SB 375 enables certain qualifying projects to tier off the SCS or alternative planning strategy developed to meet California’s climate change goals. Tiered documents may consist of initial studies or focused EIRs that may incorporate by reference portions of the program EIR from which they are tiered. If the potential environmental effects of subsequent actions are consistent with and adequately addressed by a certified program EIR, additional environmental analysis may be unnecessary.

1.4.1 Streamlining Under SB 375

SB 375 provides streamlining benefits for Transit Priority Projects (TPP) and certain mixed use projects. (See California Public Resources Code [PRC] Sections 21155 et seq.) For details, see the Governor’s Office of Planning and Research’s flow charts on SB 375 streamlining (Governor’s Office of Planning and Research 2011). A TPP is a project that meets all of the criteria summarized below. For the purposes of this EIR, geographic areas that meet the TPP requirements are referred to as Transit Priority Areas (TPAs).

- Consistent with the general land use designation, density, building intensity and applicable policies specified for the project area in the SCS;
- Located within half a mile of a major transit stop or high quality transit corridor;

- Comprised of at least 50 percent residential use based on total building square footage, or as little as 26 percent residential use if the project has a floor area ratio of not less than 0.75; and
- Built out with a minimum of 20 dwelling units per acre (PRC § 21155).

For the purposes of this EIR, geographic areas that meet the TPP requirements are referred to as TPAs. One of three potential streamlining benefits may apply to a TPP pursuant to SB 375, as described below.

First, TPPs that meet a detailed list of criteria set forth in PRC Section 21155.1 are termed Sustainable Communities Projects and are statutorily exempt from CEQA. Due to the extensive list of criteria that must be met to achieve this exemption, the exemption may only be available in limited circumstances.

Second, a TPP that does not qualify for the statutory exemption may be eligible to comply with CEQA using a Sustainable Communities Environmental Assessment (SCEA). An SCEA is similar to a streamlined negative declaration or mitigated negative declaration that requires a 30-day public review period (rather than the otherwise available 20-day public review period). In addition, unlike a negative declaration or mitigated negative declaration, a lead agency's decision to approve a TPP based on an SCEA is reviewed, if challenged, by a court under the substantial evidence standard (PRC Section 21155.2(b)(7)).

Third, a TPP that will result in one or more significant impacts after mitigation may be reviewed using a tiered TPP EIR as established by PRC Section 21155.2(c). A tiered TPP EIR is only required to address the significant or potentially significant effects of the TPP on the environment and is not required to include a discussion of (1) growth inducing impacts, (2) any project specific or cumulative impacts from cars and light duty truck trips generated by the project on global warming or the regional transportation network, (3) cumulative effects that have been adequately addressed and mitigated in prior applicable certified EIRs, (4) off-site alternatives, or (5) a reduced density alternative to address effects of car and light truck trips generated by the TPP (PRC Sections 21155.2 (c), 21159.28(a) and (b)).

In addition to the benefits provided for TPPs, SB 375 provides streamlining benefits for residential or mixed use residential projects, as defined in PRC Section 21159.28(d), that are consistent with the use designation, density, building intensity and applicable policies specified for the project area in the SCS but do not meet the criteria for TPPs. Projects eligible for streamlining must incorporate mitigation measures required by an applicable prior environmental document, such as this EIR after it is certified by AMBAG.

Projects that qualify to use the SB 375 CEQA streamlining benefits would still need to obtain discretionary permits or other approvals from the lead agency and the local jurisdiction, in accordance with local codes and procedures, including any agreements related to zoning, design review, use permits and other local code requirements. The streamlining only applies to the CEQA processing of a project.

1.4.2 Streamlining Under SB 226

In 2011, the legislature enacted SB 226 to establish additional streamlining benefits applicable to infill projects that are consistent with the requirements set forth in *State CEQA Guidelines* section 15183.3 (PRC Sections 21094.5 (c), 21094.5.5).

Unlike the CEQA streamlining benefits established by SB 375, the benefits created by SB 226 may apply to non-residential projects including qualifying commercial, retail, transit station, school, or public office building projects (*State CEQA Guidelines*, Section 15183.3 (f)(1)).

1.4.3 Streamlining Under SB 743

SB 743 (2013) (PRC Section 21099 and 21555.4) created an exemption from CEQA for certain residential, employment center and mixed use development projects that are consistent with a Specific Plan (see Public Resources Code Section 21155.4.) (A Specific Plan implements a General Plan within a smaller geographic area, such as a downtown core or along a transit corridor; see Government Code Section 65450 et seq.). The exemption applies if a project meets all of the following criteria:

1. It is a residential, employment, or mixed use project and is located within a transit priority area;
2. The project is consistent with a specific plan for which an environmental impact report was certified; and
3. It is consistent with an adopted SCS or alternative planning strategy.

The exemption cannot be applied if circumstances requiring preparation of a Subsequent or Supplemental EIR occur, for example if the project would cause new or worse significant environmental impacts compared to what was analyzed in the environmental impact report for the specific plan.

SB 743 also specifies that aesthetic and parking impacts of residential, mixed use residential, or employment center uses on infill sites within a TPA shall not be considered significant effects on the environment (see Public Resources Code Section 21099(d).)

1.4.4 Other Tiering Opportunities

Finally, for all other types of projects proposed to be carried out or approved by a lead agency within the region, the lead agency may utilize this EIR for the purposes of other allowed CEQA tiering (PRC Sections 21068.5, 21093-21094, *State CEQA Guidelines* 15152, 15385). Tiering is the process by which general matters and environmental effects in an EIR prepared for a policy, plan, program or ordinance are relied upon by a narrower second-tier or site specific EIR (PRC Section 21068.5). Moreover, by tiering from this EIR (if certified by AMBAG), a later tiered EIR would not be required to examine effects that (1) were mitigated or avoided in this EIR, (2) were examined at a sufficient level of detail in this EIR to enable those effects to be mitigated or avoided by site specific revisions, the imposition of conditions, or by other means in connection with the approval of the later project (PRC Section 21094).

1.5 EIR Content and Format

This document includes discussions of environmental impacts related to several issue areas. The analysis of environmental impacts identifies impacts by category: significant and unavoidable, significant but mitigable, less than significant, and beneficial. It proposes mitigation measures, where feasible, for identified significant environmental impacts to reduce project impacts, identifying when impacts can be reduced to a less than significant level. The responsible agency for each mitigation measure is also identified, as further described in Section 3.4.1.

This EIR has been organized into an Executive Summary and eight sections. These are:

- 0.0 **Executive Summary.** Provides an overview of the project and a summary of the impacts, mitigation measures, and level of significance after implementation of mitigation.
- 1.0 **Introduction.** Provides the project background, description of the type of environmental document and CEQA streamlining opportunities, and information about the EIR content and format.
- 2.0 **Project Description.** Presents and discusses the project objectives, project location and specific project characteristics.
- 3.0 **Environmental Setting and Impact Analysis Approach.** Provides a description of the existing physical setting of the AMBAG region, including a description of the regional transportation system, and discusses the EIR baseline and approach to direct and cumulative analyses.
- 4.0 **Analysis of Environmental Issues.** Describes existing conditions found in the project area and assesses environmental impacts that may be generated by implementing the proposed project. These project impacts are compared to “thresholds of significance” in order to determine the nature and severity of the direct and indirect impacts. Mitigation measures, intended to reduce adverse, significant impacts below threshold levels, are proposed where feasible. Impacts that cannot be eliminated or mitigated to less than significant levels are also identified.
- 5.0 **MTP Consistency with Other Plans Analysis.** Describes consistency with other local and regional plans.
- 6.0 **Other CEQA Required Discussions.** Identifies growth inducing impacts that may result from implementation of the proposed MTP/SCS, as well as long-term effects, significant irreversible environmental changes, and cumulative impacts.
- 7.0 **Alternatives.** Describes alternatives to the proposed project and compares their impacts to the proposed project’s.
- 8.0 **References and Preparers.** Lists all published materials, federal, State and local agencies and other organizations and individuals consulted during the preparation of this EIR. It also lists the EIR preparers.

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The EIR also includes seven appendices containing relevant and applicable data used to inform or support the analysis in the EIR:

- Appendix A: Notice of Preparation and NOP Response Letters
- Appendix B: 2045 MTP/SCS and RTPs Transportation Project List
- Appendix C: Performance Metric Data
- Appendix D: Special Status Species
- Appendix E: 2045 MTP/SCS Air Quality and GHG Emissions
 - Appendix E.1: 2045 MTP/SCS Air Quality Emissions
 - Appendix E.2: 2045 MTP/SCS Greenhouse Gas Emissions – On Road Transportation
 - Appendix E.2: 2045 MTP/SCS Greenhouse Gas Emissions Forecast Inventory – Land Use Sources
- Appendix F: AB 52 Consultation
- Appendix G: 2045 MTP/SCS and RTPs Transportation Alternative Project List

1.6 CEQA Review Process

The environmental impact review process that will be followed for this EIR, as required under CEQA, is summarized below and illustrated in Figure 1-1:

1. **Notice of Preparation (NOP).** AMBAG, following *State CEQA Guidelines* section 15082(a), submitted a NOP to the State Clearinghouse on January 15, 2020 and the State Clearinghouse circulated it to applicable State agencies for a review period that ended on February 14, 2020. Three public scoping meetings were held during the NOP circulation and comment period, as described in Section 1.2.1.
2. **Draft EIR Prepared.** This Draft EIR contains the following required elements: a) table of contents or index; b) summary; c) project description; d) environmental setting; e) discussion of significant impacts (direct, indirect, cumulative, growth-inducing and unavoidable impacts); f) a discussion of alternatives; g) mitigation measures; and h) discussion of irreversible changes.
3. **Notice of Availability/Completion (NOA/NOC) and Public Review.** AMBAG, as the lead agency, has filed a Draft EIR NOC with the State Clearinghouse and prepared a Draft EIR Notice of Availability. As the lead agency, AMBAG is soliciting input from other agencies and the public and will respond in writing to all comments received (Public Resources Code Sections 21104 and 21253). The public review period will exceed the minimum of 45 days.
4. **Final EIR.** AMBAG will prepare a Final EIR that includes: a) the Draft EIR; b) copies of comments received during public review; c) list of persons and entities commenting; and d) responses to comments.
5. **Certification of Final EIR.** Prior to making a decision on the proposed MTP/SCS, AMBAG must certify that: a) the Final EIR has been completed in compliance with CEQA; b) the

Final EIR was presented to the decision-making body of the lead agency; and c) the decision-making body reviewed and considered the information in the Final EIR prior to approving a project (*State CEQA Guidelines* Section 15090). Each RTPA will also approve the EIR and approve their RTPs using the same process (refer to Step 10).

6. **Findings/Statement of Overriding Considerations.** For each significant impact of the project identified in the EIR, AMBAG and the RTPAs must find, based on substantial evidence, that either: a) the project has been changed to avoid or substantially reduce the magnitude of the impact; b) changes to the project are within another agency's jurisdiction and such changes have or should be adopted; or c) specific economic, social, or other considerations make the mitigation measures or project alternatives infeasible (*State CEQA Guidelines* Section 15091). A Statement of Overriding Considerations must be adopted for significant unavoidable impacts that sets forth the specific social, economic, or other reasons supporting the agency's decision (*State CEQA Guidelines* Section 15092).
7. **Mitigation Monitoring Reporting Program.** If AMBAG would adopt a reporting or monitoring program for mitigation measures that were adopted or made conditions of project approval to mitigate significant effects.
8. **Lead Agency Project Decision.** AMBAG, as the lead agency may a) disapprove the project because of its significant environmental effects; b) require changes to the project to reduce or avoid significant environmental effects; or c) approve the project despite its significant environmental effects, if a statement of overriding considerations is adopted (*State CEQA Guidelines* Sections 15092).
9. **Notice of Determination (NOD).** AMBAG will file a NOD after deciding to approve a project for which an EIR is prepared (*State CEQA Guidelines* Section 15094). AMBAG will file the NOD with the applicable County Clerks to be posted for 30 days and sent to anyone previously requesting notice. Posting of the NOD will start a 30-day statute of limitations on CEQA legal challenges (PRC Section 21167[c]).
10. **RTPA Certifications and Project Decisions.** Following AMBAG certification of the Final EIR and project decision, each RTPA must consider the Final EIR for their RTP and adopt a resolution to adopt CEQA findings, a statement of overriding considerations, and a MMRP related to the EIR certified by AMBAG.

1.7 Lead, Responsible, and Trustee Agencies

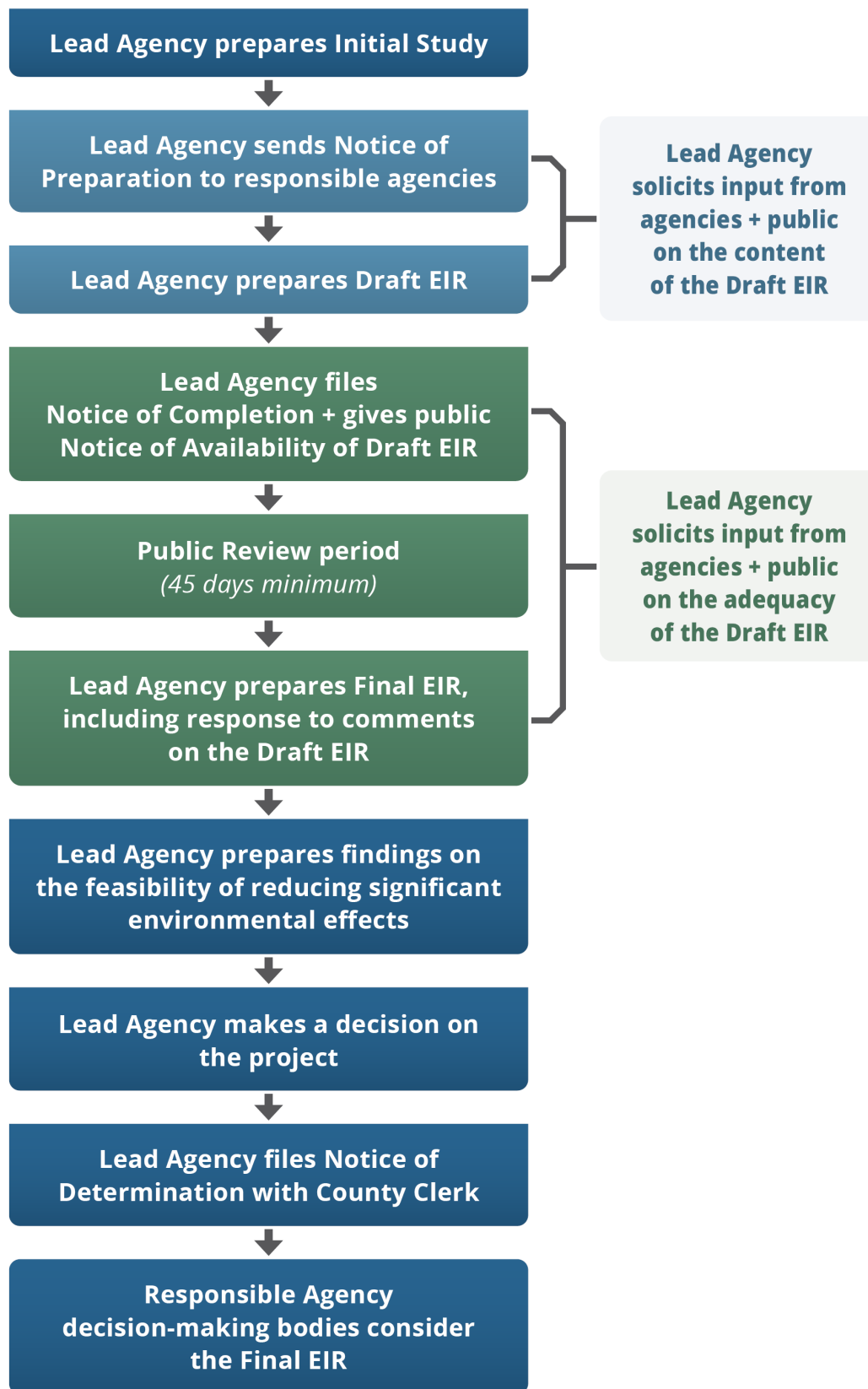
The *State CEQA Guidelines* define lead and responsible and trustee agencies. A lead agency is the public agency with principal responsibility for carrying out or approving a project; the lead agency prepares the CEQA document (*State CEQA Guidelines* Section 15367). A responsible agency is an agency other than the lead agency with responsibility for carrying out or approving a project, and uses the lead agency's CEQA document in its decision-making (*State CEQA Guidelines* Section 15381).

AMBAG is the lead agency for the 2045 MTP/SCS because it holds principal responsibility for approving the 2045 MTP/SCS. TAMC, SBtCOG, and SCCRTC, are responsible agencies for the

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2045 MTP/SCS and lead agencies for adopting their own RTPs. Project sponsors for individual projects analyzed in this program EIR may include: TAMC, SBtCOG and SCCRTC; Caltrans; Monterey, San Benito and Santa Cruz counties; cities within the AMBAG region; transit agencies; and other project sponsors who may implement any of the projects listed in the 2045 MTP/SCS. These agencies are considered responsible agencies for the 2045 MTP/SCS but may be lead agencies for individual transportation or land use projects.

Figure 1-1 Environmental Review Process



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2 Project Description

This section describes the proposed Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) and Regional Transportation Plans (RTPs), including the project objectives, project location and characteristics, 2045 MTP/SCS transportation projects and discretionary actions needed for approval.

2.1 Project Objectives

The 2022 Monterey County RTP (MC-RTP), the 2045 Santa Cruz County RTP (SCC-RTP), the 2045 San Benito County RTP (SBC-RTP) and the 2045 MTP/SCS (hereafter referred to as the 2045 MTP/SCS) have been prepared to comply with the current California Transportation Commission (CTC) Regional Transportation Plan Guidelines, pursuant to Government Code Section 14522, to prepare a regional transportation plan, a long-range transportation planning document which will provide policy guidelines regarding the planning and programming of transportation projects within each respective County through 2045. Further, Government Code Sections 65050, 65400, 65584.01-04, 65587, 65588 and Public Resources Code Section 21155 were amended in January 2009 when Senate Bill (SB) 375 became law, requiring coordinated planning between regional land use and transportation plans to increase efficiency and reduce GHG emissions. The following sections describe the legislative requirements and project objectives associated with the 2045 MTP/SCS and the Regional Transportation Plans for San Benito, Santa Cruz, and Monterey counties.

2.1.1 General Legislative Requirements

Regional transportation planning in California is a dynamic process. It involves the interaction of federal, state, regional, and local agencies and the consideration of multiple plans and programs. As the state-designated Regional Transportation Planning Agencies, the Transportation Agency for Monterey County (TAMC), the Council of San Benito County Governments (SBtCOG), and the Santa Cruz County Regional Transportation Commission (SCCRTC), are tasked with developing Regional Transportation Plans for their respective counties to provide a basis for the allocation of state and federal transportation funds to transportation projects within the county over a long-range time frame.

The Association of Monterey Bay Area Governments (AMBAG) as the federally-designated metropolitan planning organization (MPO) for Monterey, San Benito and Santa Cruz counties, is required by both federal and State law to prepare a long-range (at least 20-year) transportation planning document known as an MTP. The MTP contains a compilation of the fiscally constrained projects proposed in the RTPs prepared by TAMC, SBtCOG and SCCRTC as the state-designated Regional Transportation Planning Agencies (RTPAs) for Monterey, San Benito and Santa Cruz counties, respectively. The MTP is a document used to achieve a coordinated and balanced regional transportation system for the Monterey Bay Region.

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AMBAG is also responsible for preparing a Sustainable Communities Strategy (SCS) as part of the MTP, pursuant to the requirements of California SB 375 as adopted in 2008 (discussed further below). The SCS sets forth a forecasted development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, is intended to reduce greenhouse gas (GHG) emissions from passenger vehicles and light duty trucks to achieve the regional GHG reduction targets set by the California Air Resources Board (CARB).

The California Transportation Commission's document *2017 California Regional Transportation Plan Guidelines for MPOs* serves as the guidance for RTP development (California Transportation Commission 2017). In preparing the MTP/SCS, AMBAG followed the 2017 RTP Guidelines for the 2045 MTP/SCS. Under both federal and State law, the RTPAs and MPOs must update the RTPs and MTP every four years.¹ AMBAG adopted its most recent MTP/SCS in June 2018. The 2040 MTP/SCS covered a 25-year period between 2015 and 2040.

2.1.2 SB 375 Requirements

The Sustainable Communities Strategy and Climate Protection Act, SB 375 (codified at CAL. GOVT CODE §§ 14522.1, 14522.2, 65080.01, 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588; CAL. PUB. RES. CODE §§2161.3, 21155, 21159.28), is a law passed in 2008 by the California legislature that requires each MPO to demonstrate, through the development of an SCS, how its region will integrate transportation, housing and land use planning to meet the GHG reduction targets set by CARB. In addition to creating requirements for MPOs, it also creates requirements for CTC and CARB. Some of the requirements include the following:

- CTC must maintain guidelines for the travel demand models that MPOs develop for use in the preparation of their RTPs or MTPs.
- CARB must develop regional GHG emission reduction targets for automobiles and light duty trucks for 2020 and 2035 by September 30, 2010. These targets were approved on September 23, 2010. CARB is tasked to update the regional targets every eight years, with the option of revising them every four years. The latest targets went into effect October 1, 2018.
- Each MPO must prepare an SCS as part of its RTP or MTP to demonstrate how it will meet the regional GHG targets.
- Each MPO must adopt a public participation plan for development of the SCS that includes informational meetings, workshops, public hearings, consultation and other outreach efforts.
- If an SCS cannot achieve the regional GHG target, the MPO must prepare an Alternative Planning Strategy (APS) showing how it would achieve the targets with alternative development patterns, infrastructure, or transportation measures and policies.
- Each MPO must prepare and circulate a draft SCS at least 55 days before it adopts a final RTP or MTP.

¹ 23 C.F.R. §450.322(c); Gov. Code §65080(d).

- After adoption, each MPO must submit its SCS to CARB for review.
- CARB must review each SCS to determine whether or not, if implemented, it would meet the GHG targets. CARB must complete its review within 60 days.

AMBAG reduction targets from CARB are a three percent per capita reduction from 2005 levels by 2020 and a six percent per capita reduction from 2005 levels by 2035 (CARB 2021). These targets apply to the entire AMBAG region for all on-road light duty trucks and passenger vehicles emissions. The 2045 MTP/SCS includes the years for which the regional targets are required (base year/2020 and 2035) and the 2045 MTP/SCS also includes the additional scenario year of 2045 to comply with federal law. The 2045 MTP/SCS meets the 2020 and 2035 GHG targets.

SB 375 specifically states that nothing in the law changes local governments local land use authorities. The 2045 MTP/SCS provides a regional policy foundation that local governments may build upon, if they so choose. The 2045 MTP/SCS includes and accommodates the growth projections for the region. SB 375 also requires that forecasted development patterns for the region be consistent with the eight-year regional housing needs as allocated to member jurisdictions through the Regional Housing Needs Allocation (RHNA) process under State housing law.²

In addition, this 2045 MTP/SCS EIR lays the groundwork for the streamlined review of qualifying development projects. Qualifying projects that meet statutory criteria and are consistent with the 2045 MTP/SCS are eligible for streamlined environmental review pursuant to CEQA under SB 375 and other laws; see Section 1.3.2.

2.1.3 MAP-21

The Moving Ahead for Progress in the 21st Century Act (MAP-21), (Public Law 112-141) was enacted in 2012, preceding the FAST Act that builds upon MAP-21. Through the MTP development process, MAP-21 encourages AMBAG to:

- Consult with officials responsible for other types of planning activities that are affected by transportation in the area (including State and local planned growth, economic development, environmental protection, airport operations and freight movements) or to coordinate its planning process, to the maximum extent practicable, with such planning activities.³

Specifically, MAP-21 requires that the MTP planning process provide for consideration of projects and strategies that will:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency;
- Increase the safety of the transportation system for motorized and non-motorized users;

² The RHNA was last updated as part of the 2035 MTP/SCS and will be updated for the next MTP/SCS scheduled for adoption in 2026.

³ 23 U.S.C. § 134(g)(3)(A).

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- Increase the security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility of people and for freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation; and
- Emphasize the preservation of the existing transportation system.⁴

The 2045 MTP/SCS and the RTPs prepared by the Monterey, San Benito, and Santa Cruz RTPAs have been prepared to meet these requirements.

2.1.4 Fixing America's Surface Transportation Act (FAST Act)

The Fixing America's Surface Transportation (FAST) Act, as enacted in 2015 and later extended, builds on the changes made by MAP-21 (Public Law 114-94). While MAP-21 reformed the metropolitan and statewide transportation planning processes, the FAST Act includes provisions to support and enhance these reforms. Public involvement remains a hallmark of the planning process.

The FAST Act continues requirements for a long-range plan and a short-term transportation improvement program (TIP), with the long-range statewide and metropolitan plans now required to include facilities that support intercity transportation, including intercity buses. The statewide and metropolitan long-range plans must describe the performance measures and targets that states and MPOs use in assessing system performance and progress in achieving the performance targets. In addition, the FAST Act requires the planning process to consider projects/strategies to improve the resilience and reliability of the transportation system, address stormwater mitigation and enhance travel and tourism.

Finally, to engage all sectors and users of the transportation network, the FAST Act requires that the planning process include public ports and private transportation providers, and further encourages MPOs to consult during this process with officials of other types of planning activities, including tourism and natural disaster risk reduction. MAP-21 and the FAST Act also change criteria for MPO officials to provide transit provider representatives with equal authority and allow the representative to also serve as the representative of a local municipality.

Through the RTP development process, the FAST Act encourages MPOs and RTPAs, to:

- Consult with officials responsible for other types of planning activities that are affected by transportation in the area (including State and local planned growth, economic development, environmental protection, airport operations and freight movements) or

⁴ 23 U.S.C. §134(h)(1).

to coordinate its planning process, to the maximum extent practicable, with such planning activities.⁵

Specifically, the FAST Act requires that the RTP planning process provide for consideration of projects and strategies that will:

- (A) Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency;
- (B) Increase the safety of the transportation system for motorized and non-motorized users;
- (C) Increase the security of the transportation system for motorized and non-motorized users;
- (D) Increase the accessibility and mobility of people and for freight;
- (E) Protect and enhance the environment, promote energy conservation, improve the quality of life and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- (F) Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- (G) Promote efficient system management and operation;
- (H) Emphasize the preservation of the existing transportation system.
- (I) Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and
- (J) Enhance travel and tourism.⁶

2.1.5 Planning Final Rule – FAST Act

On May 27, 2016, the Statewide and Nonmetropolitan Transportation Planning and Metropolitan Transportation Planning Final Rule was issued, with an effective date of June 27, 2016 (Title 23 CFR Parts 450 and 771 and Title 49 CFR Part 613). This final rule states, “On or after May 27, 2018, an RTPA may not adopt an RTP that has not been developed according to the provisions of MAP-21/FAST Act as specified in the Planning Final Rule.” This rule applies to the AMBAG MTP/SCS.

2.1.6 Environmental Justice

AMBAG and the RTPAs are required to address social equity and environmental justice in the 2045 MTP/SCS and the county level RTPs. The legal basis for environmental justice stems from the Civil Rights Act of 1964, along with Executive Order 12898 (February 1994), which states that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low income populations.” AMBAG and the RTPAs must evaluate how the

⁵ 23 U.S.C. §134(g)(3)(A).

⁶ 23 U.S.C. §134(h)(1).

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2045 MTP/SCS and the county level RTPs might impact minority and low income populations and must ensure that the 2045 MTP/SCS and RTPs does not have a disproportionate adverse impact on such populations. The MTP and the county level RTPs meet EO 12898 and Title VI requirements which are further discussed in Chapter 5 of the 2045 MTP/SCS.

In addition, per 23 C.F.R. Section 450.316(a)(1)(vii), the public participation plan that AMBAG must develop and use must describe explicit procedures, strategies, and desired outcomes for “[s]eeking out and considering the needs of those traditionally underserved by existing transportation systems, such as low income and minority households, who may face challenges accessing employment and other services.”

2.1.7 Metropolitan/Regional Transportation Plans

The procedures for developing Regional Transportation Plans (RTPs) – also referred to as Metropolitan Transportation Plans (MTPs) – are provided in the California Transportation Commission’s *2017 California Regional Transportation Plan Guidelines for MPOS and for RTPAs* (California Transportation Commission 2017). Because the AMBAG document encompasses three RTPs, it is referred to as a MTP as AMBAG is the MPO overseeing the tri-county area. The MPO guidelines set forth requirements also applicable to RTPAs, which include:

- Provide an assessment of current modes of transportation and the potential of new travel options within the region;
- Project/estimate the future needs for travel and goods movement;
- Identify and document specific actions necessary to address the region’s mobility and accessibility needs;
- Guide and document public policy decisions by local, regional, state and federal officials regarding transportation expenditures and financing;
- Identify needed transportation improvements in sufficient detail to serve as a foundation for:
 - Development of the Federal Transportation Improvement Program (FTIP) and the Interregional Transportation Improvement Program (ITIP);
 - Facilitation of the National Environmental Protection Act (NEPA)/404 integration process; and
 - Identification of project purpose and need.
- Employ performance measures that demonstrate the effectiveness of the transportation improvement projects in meeting the intended goals;
- Promote consistency between the California Transportation Plan, the regional transportation plan and other transportation plans developed by cities, counties, districts, Native American Tribal Governments and State and Federal agencies in responding to statewide and interregional transportation issues and needs;
- Provide a forum for 1) participation and cooperation, and 2) facilitating partnerships that reconcile transportation issues which transcend regional boundaries; and

- Involve community-based organizations as part of the public, Federal, State and local agencies, Native American Tribal Governments, as well as local elected officials, early in the transportation planning process so as to include them in discussions and decisions on the social, economic, air quality and environmental issues related to transportation.

RTPs and MTPs must include long-term horizons (at least 20 years) that reflect regional needs, identify regional transportation issues/problems and develop and evaluate solutions that incorporate all modes of travel. RTPs and MTPs must also recommend a comprehensive approach that provides direction for programming decisions to meet the identified regional transportation needs. RTPs and MTPs must be consistent with the applicable requirements of MAP 21, the FAST Act and other federal laws and regulations, including conformity with the 1990 Clean Air Act Amendments and consistency with the FTIP. Because the 2045 MTP/SCS is a compilation of three RTPs, consistency among the documents is achieved through the MTP.

2.1.8 Project Objectives

The underlying purpose of the 2045 MTP/SCS and the county level RTPs is to coordinate and facilitate the planning, programming and budgeting of all transportation facilities and services within the Monterey Bay region through 2045 and demonstrate how the region will integrate transportation and land use planning to meet the GHG reduction targets established by CARB. In developing the 2045 MTP/SCS and county level RTPs, AMBAG and the respective RTPAs followed the FAST Act requirements that the RTP planning process provide for consideration of projects and strategies that will:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency;
- Increase the safety and security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility options available to people and freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation;
- Emphasize the preservation of the existing transportation system;
- Improve resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts; and
- Enhance travel and tourism.

For purposes of this EIR, the primary objective of the 2045 MTP/SCS and the county level RTPs is to comply with applicable regulatory requirements, including California Transportation Commission Guidelines and SB 375, including SB 375's regional GHG

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reduction targets. AMBAG's specific objectives for the 2045 MTP/SCS are to additionally ensure that the SCS and the transportation system planned for the AMBAG region accomplishes the following:

- Serves regional goals, objectives, policies, and plans.
- Responds to community and regional transportation needs.
- Promotes energy efficient, environmentally sound modes of travel and facilities and services.
- Promotes equity and efficiency in the distribution of transportation projects and services.

2.2 Project Location

The 2045 MTP/SCS covers the entire area of Monterey, San Benito, and Santa Cruz counties and includes all the incorporated cities and unincorporated communities contained therein (see Figure 2-1). The three Regional Transportation Plans each cover the entire areas of their respective county. Capital improvement projects identified in the 2045 MTP/SCS and each of the county level RTPs are located on State highways, county roads and locally owned streets, as well as on transit district property, and public utility lands.

2.3 Project Characteristics

The 2045 MTP/SCS and county level RTPs are an update to the 2040 MTP/SCS/RTPs which were adopted in June 2018. The updates from the 2040 MTP/SCS and county level RTPs consisted of updating the growth forecasts from 2015-2040 to 2015/2020-2045; updating project cost estimates; updating revenue assumptions; and minor changes to transportation project lists. The MTP/SCS vision, policies, and goals have not changed, nor have most of the performance metrics. However, the GHG reduction targets established by CARB for AMBAG have increased.

The 2045 MTP/SCS and county level RTPs plans address how the AMBAG region will meet its transportation needs for the period through 2045, considering existing and projected future land use patterns as well as population and job growth. The 2045 MTP/SCS estimates nearly \$13.3 billion in revenues expected to be available to the region from all transportation funding sources over the course of the planning period. It identifies and prioritizes expenditures of this anticipated funding for transportation projects of all transportation modes: highways, streets and roads, transit, rail, bicycle and pedestrian, aviation, as well as transportation demand management measures (TDM) and transportation systems management (TSM).

The 2045 MTP/SCS is based on a preferred land use and transportation scenario which defines a pattern of future growth and transportation system investment for the region emphasizing a transit oriented development and infill approach to land use and housing. Population and job growth are allocated principally within existing urban areas near public transit. Table 2-1 is the projected population growth within the AMBAG region. The preferred

Figure 2-1 Project Location



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Project Location
(County Boundaries)

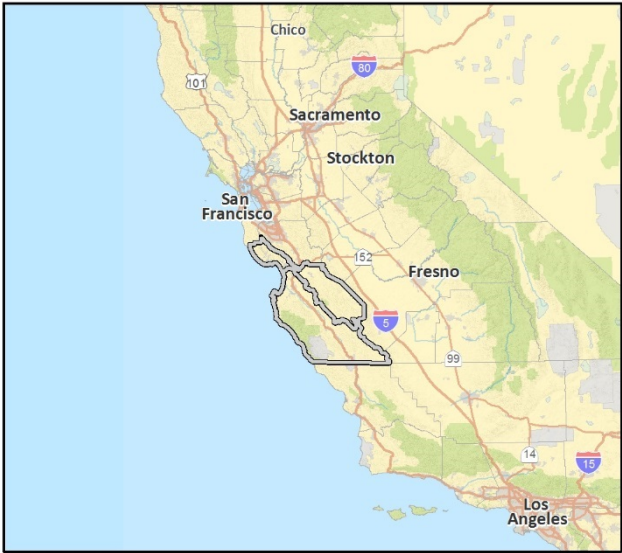


Fig 2 Project Location

2045 MTP/SCS and Regional Transportation Plans for Monterey, San Benito, and Santa Cruz Counties

land use and transportation scenario are based on the most recent planning assumptions, and consider local general plans and other factors such as updated specific plans and recently completed transportation planning studies.

Transportation projects and the preferred land use pattern that are included in the 2045 MTP/SCS for the year 2045 are shown in Figure 2-2 through Figure 2-8. Chapter 4 of the 2045 MTP/SCS describes the proposed SCS, with Chapter 5 identifying the metrics to quantify the transportation, environmental, economic and equity benefits of the Plan. Appendix G of the 2045 MTP/SCS highlights the performance of the MTP/SCS for 2045. The performance of the Revenue Constrained network is compared in Appendix G to other network scenarios, such as 2020 Baseline and 2045 No Project.

Table 2-1 Forecasted AMBAG Population Growth 2020-2045

Jurisdiction				
Monterey County	441,143	467,068	491,443	11%
Carmel-By-The-Sea	3,949	3,954	3,984	1%
Del Rey Oaks	1,662	1,734	2,650	59%
Gonzales	8,506	13,492	15,711	85%
Greenfield	18,284	19,734	20,433	12%
King City	14,797	16,101	17,064	15%
Marina	22,321	25,126	30,044	35%
Monterey	28,170	28,650	29,639	5%
Pacific Grove	15,265	15,395	15,817	4%
Salinas	162,222	170,459	177,128	9%
Sand City	385	516	1,198	211%
Seaside	33,537	35,107	38,316	14%
Soledad	25,301	26,824	29,133	15%
Unincorporated County Territory	106,744	109,976	110,326	3%
San Benito County	62,353	73,778	83,366	34%
Hollister	40,646	43,327	45,599	12%
San Juan Bautista	2,112	2,315	2,436	15%
Unincorporated County Territory	19,595	28,136	35,331	80%
Santa Cruz County	271,233	284,146	294,967	9%
Capitola	10,108	10,794	11,126	10%
Santa Cruz	64,424	72,218	79,534	23%
Scotts Valley	11,693	11,837	12,010	3%
Watsonville	51,515	54,270	56,344	9%
Unincorporated County Territory	133,493	135,027	135,953	2%
AMBAG Total	774,729	824,992	869,776	12%

Source: AMBAG's Draft 2022 Regional Growth Forecast. AMBAG (2020).

Figure 2-2 MTP Projects Monterey County (2045)



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Figure 2-3 SCS Land Use Monterey County: North (2045)

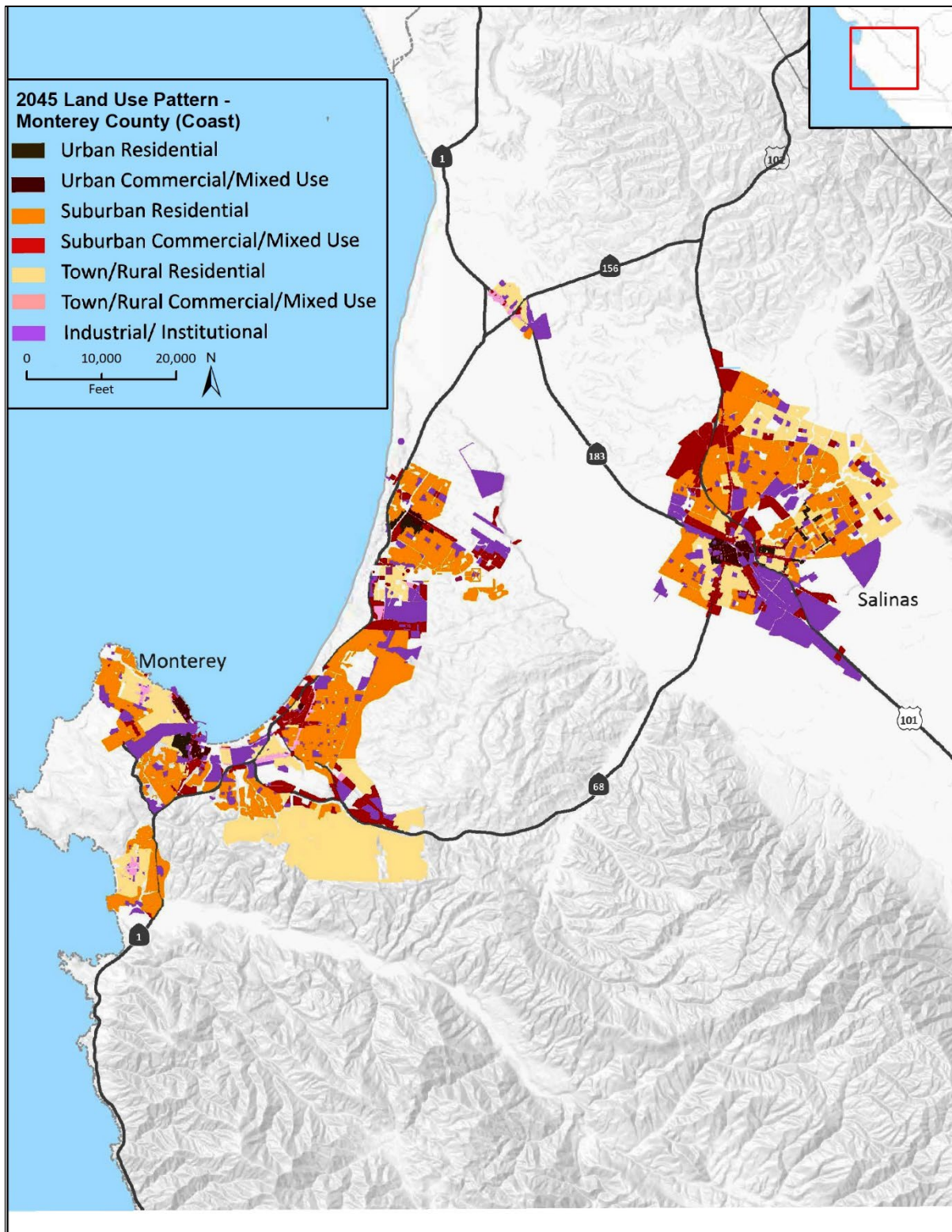
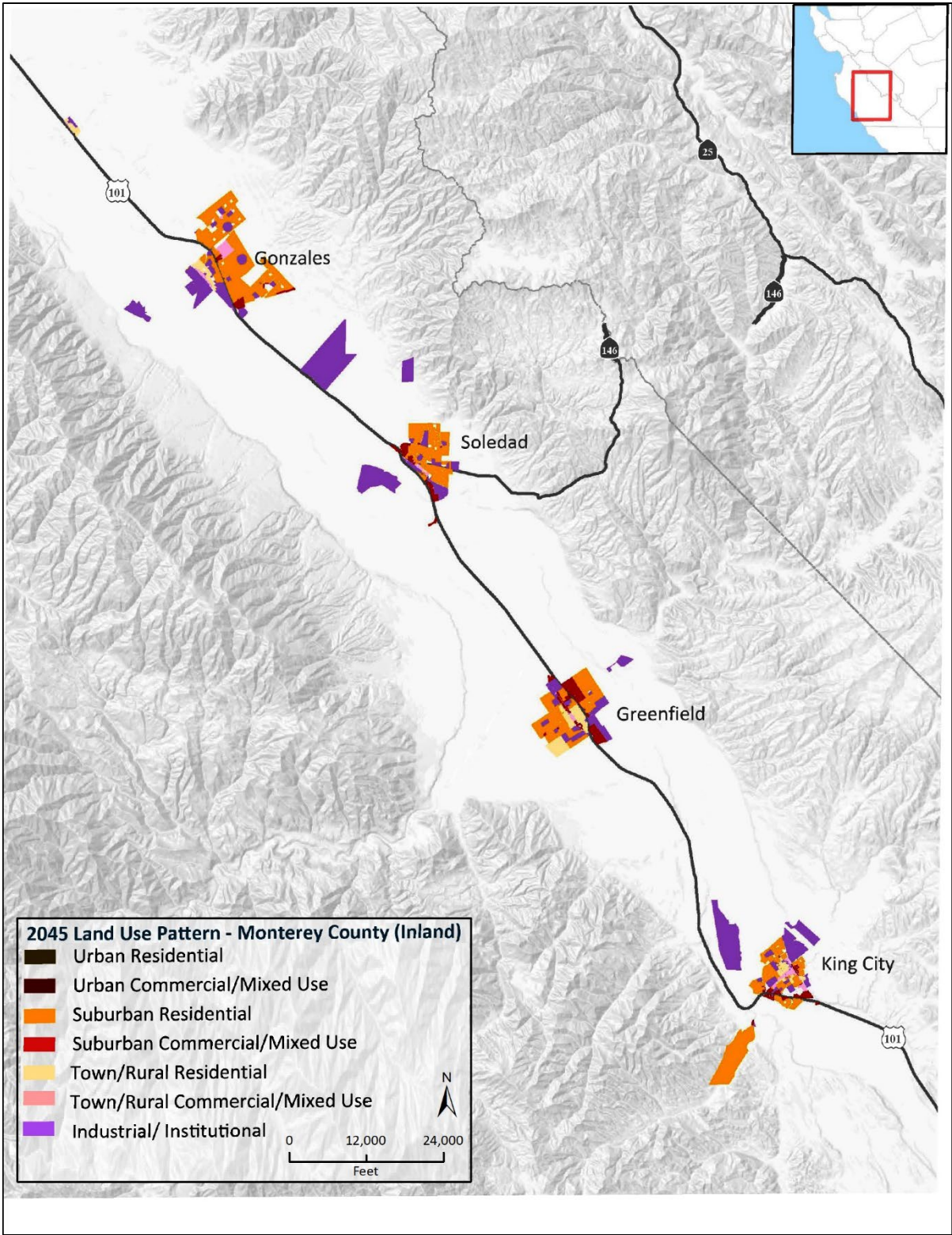
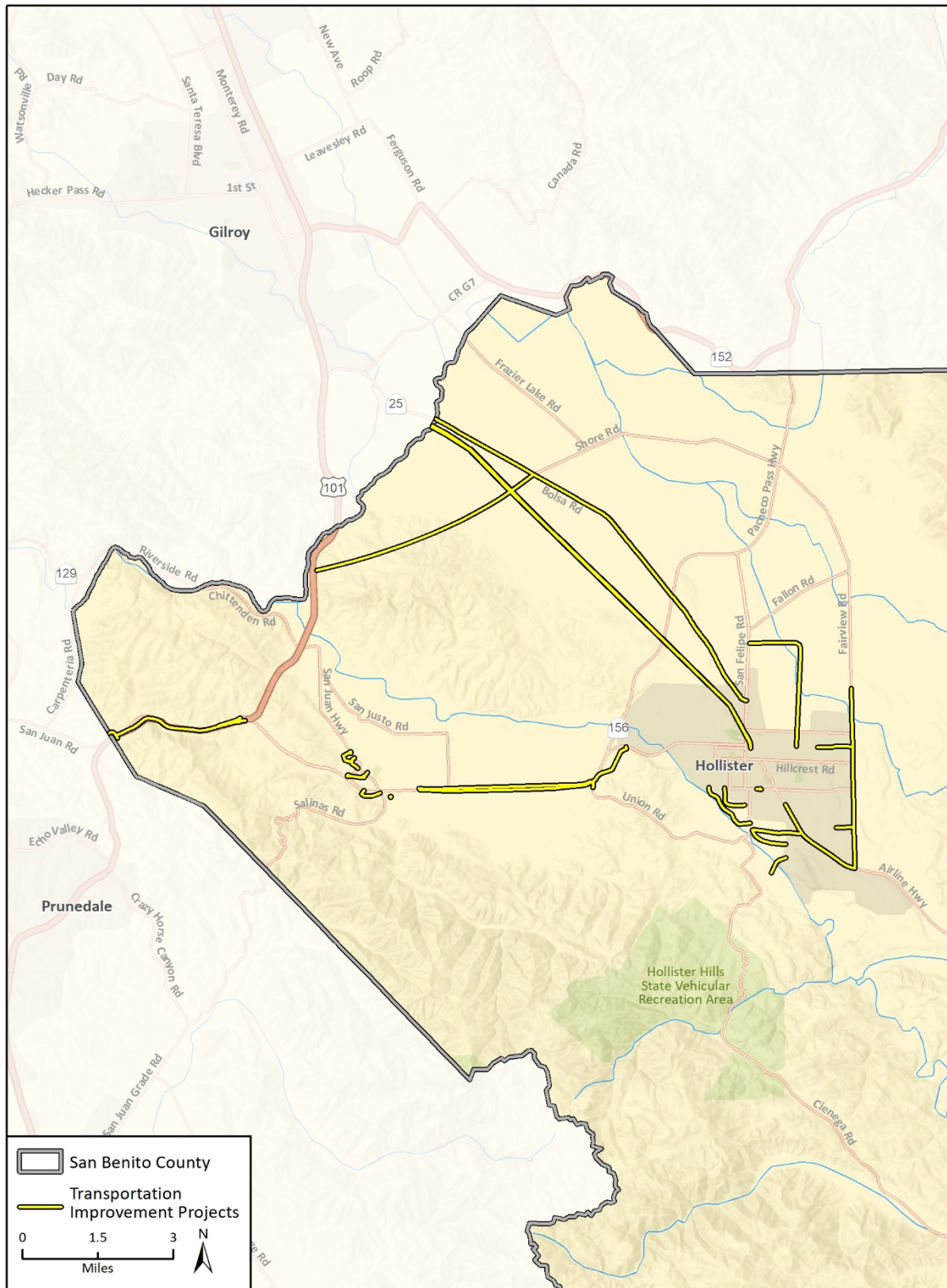


Figure 2-4 SCS Land Use Monterey County: South (2045)



2045 MTP/SCS and Regional Transportation Plans for Monterey, San Benito, and Santa Cruz Counties

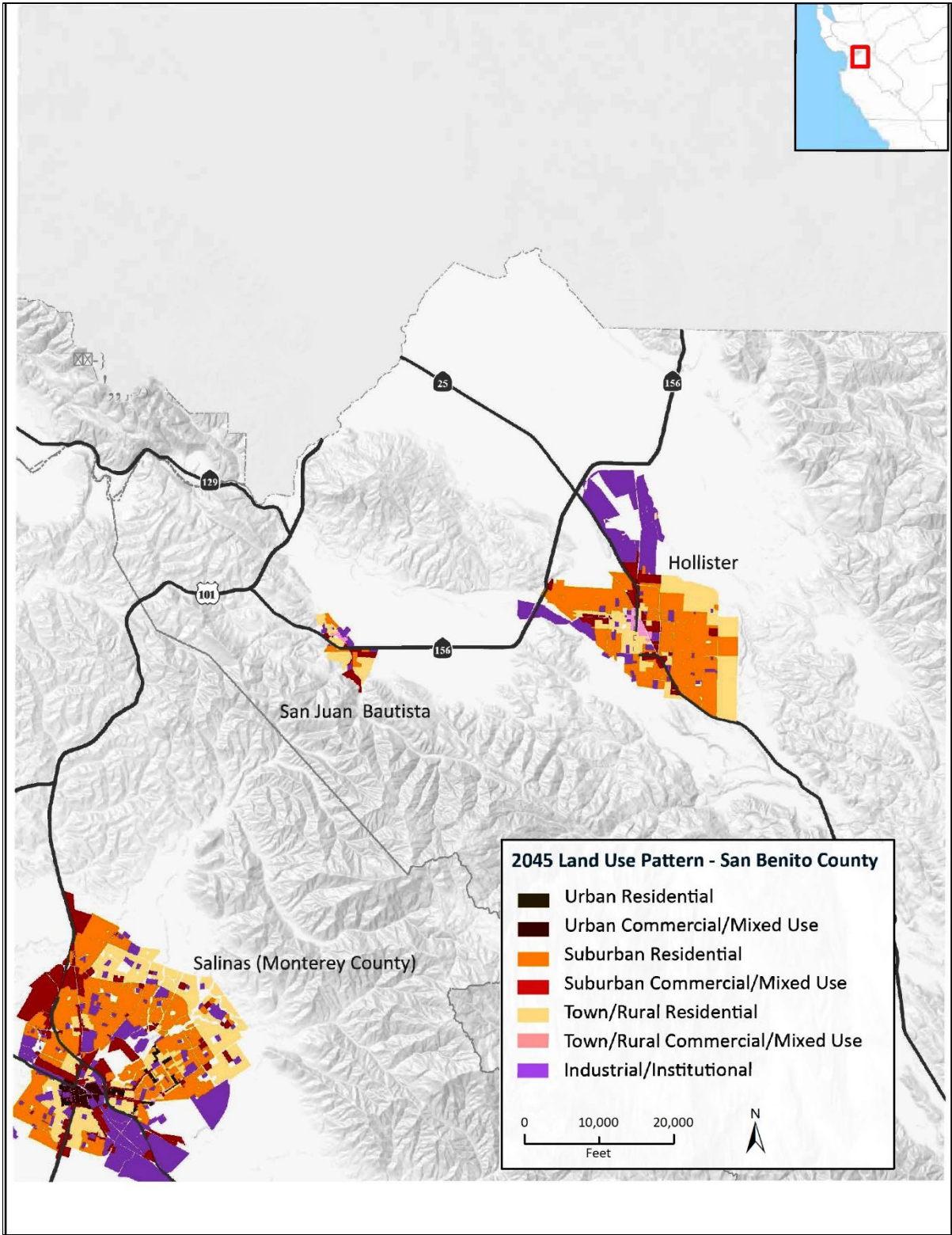
Figure 2-5 MTP Projects San Benito County (2045)



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Additional data provided by AMBAG 2021.

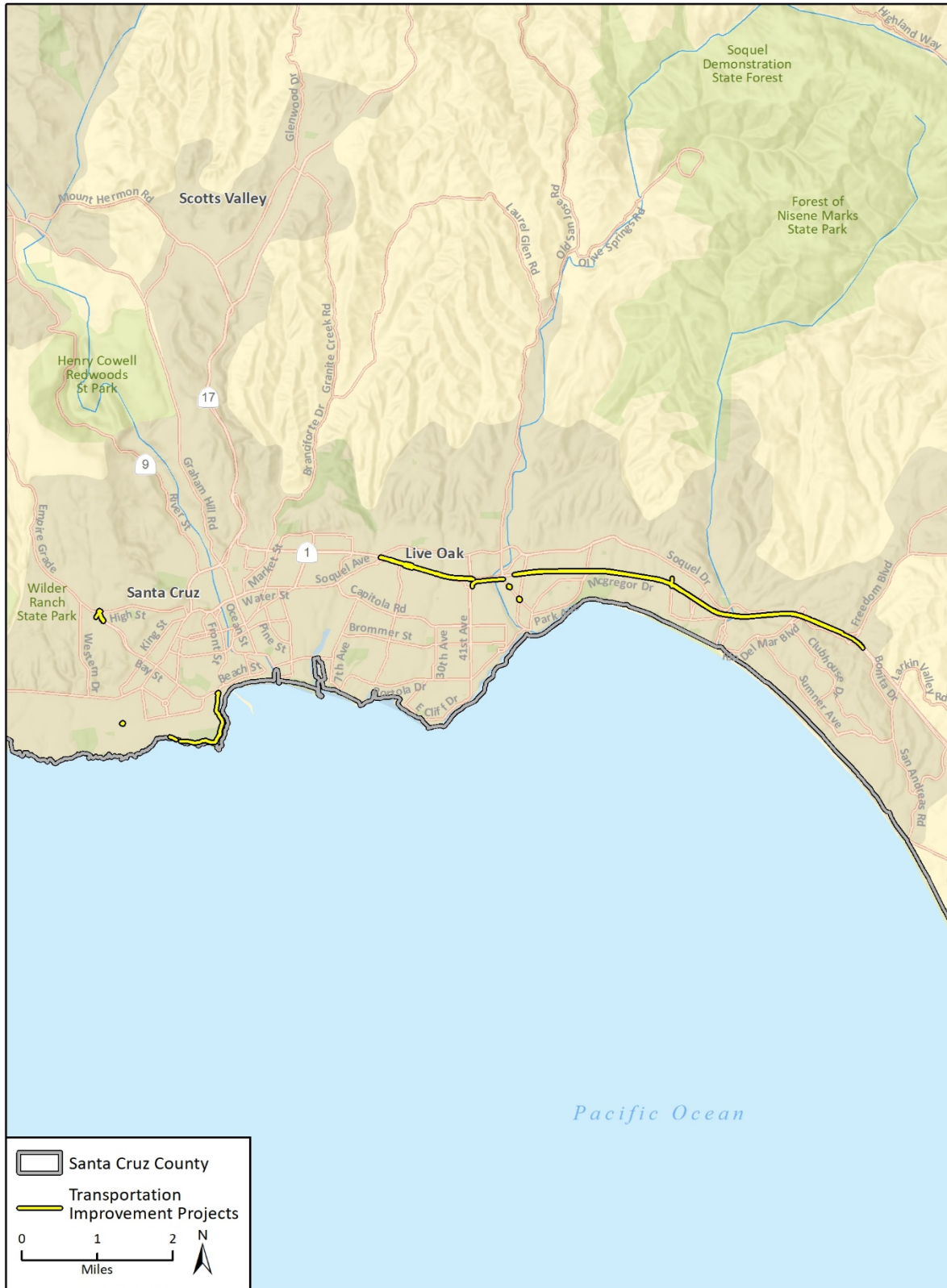
Fig 2-5 MTP Projects San Benito County

Figure 2-6 SCS Land Use San Benito County (2045)



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Cruz Counties

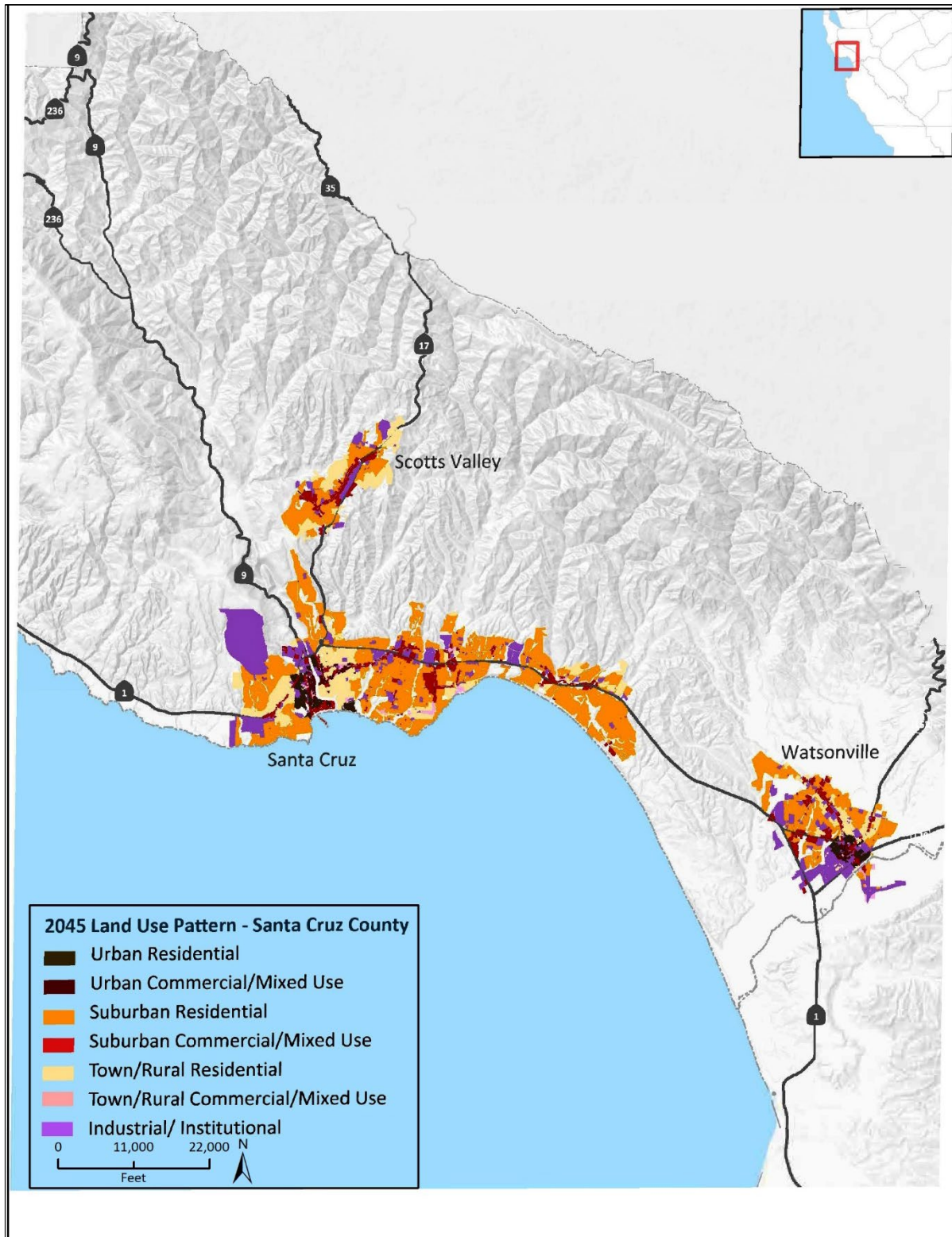
Figure 2-7 MTP Projects Santa Cruz County (2045)



Imagery provided by ESRI and its licensors © 2021.
Additional data provided by AMBAG 2021.

Fig 2-7 MTP Projects Santa Cruz County

Figure 2-8 SCS Land Use Santa Cruz County (2045)



The 2045 MTP/SCS preferred scenario consists of an intensified land use distribution approach that concentrates the forecasted population and employment growth in urban

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areas. The transportation network includes additional highway capacity, local street improvements, active transportation, and transit investments, as well as transportation demand management and system management to serve a more concentrated urban growth pattern.

The 2045 MTP/SCS is organized into seven chapters plus an Executive Summary:

- *Executive Summary.* Includes an overview of the 2045 MTP/SCS, the preferred scenario and its performance, an explanation of the planning process and the allocation of transportation funding.
- *Chapter 1 – Vision.* Discusses legal authority, the overall purpose of the 2045 MTP/SCS and transportation-related issues and challenges faced by the region.
- *Chapter 2 – Transportation Investments.* Defines how to make the most out of the existing transportation system by investing in system preservation and maintenance, along with strategic system expansion and travel demand and system management strategies. The transportation investments are intended to provide more safe and efficient travel choices for the region’s residents, businesses, and visitors.
- *Chapter 3 – Financial Plan.* The financial plan presents funding strategies that are reasonably available by 2045.
- *Chapter 4 – Sustainable Communities Strategy.* Describes how the SCS was developed, identifies the land use and transportation connection, identifies the transportation system and programs, discusses resource areas and farmland, methods to accommodate the region’s housing needs, how AMBAG will meet GHG reduction targets and implementation strategies.
- *Chapter 5 – Outcomes.* Introduces the concept of performance measures as they relate to accomplishing the 2045 MTP/SCS goals while meeting social equity responsibilities.
- *Chapter 6 – Public Participation.* Provides a public participation process including methods for engaging the community and local jurisdictions in the development of the 2045 MTP/SCS.
- *Chapter 7 – Glossary.* Identifies key terms and their definitions.
- *Appendices.* The appendices include the following:
 - A. Regional Growth Forecast
 - B. Financial Plan
 - C. Project Lists
 - D. Public Participation
 - E. SCS Documentation
 - F. Travel Demand Model and Land Use Model Documentation
 - G. Performance Measures
 - H. Complete Streets Guidebook
 - I. SCS Maps
 - J. MTP Checklist

Of these seven chapters, the Vision Element, Transportation Investments, Financial Plan and Sustainable Communities Strategy (Chapters 1, 2, 3 and 4) are the four components that include provisions with the potential to create physical changes to the environment and are the primary focus for analysis in this EIR. These chapters are described in more detail below.

2.3.1 Vision

The 2045 MTP/SCS serves as a blueprint for addressing the mobility and sustainability challenges faced in the region. The vision of the 2045 MTP/SCS is to improve the quality of life for residents by implementing suitable or appropriate land use and transportation choices for the future.

The 2045 MTP/SCS is built on a set of integrated policies, strategies, and investments to maintain and improve the transportation system to meet the diverse needs of the region through 2045. AMBAG began developing the 2045 MTP/SCS by confirming the following goals and policy objectives:

- **Access and Mobility.** Provide convenient, accessible, and reliable travel options while maximizing productivity for all people and goods in the region.
- **Economic Vitality.** Raise the region's standard of living by enhancing the performance of the transportation system.
- **Environment.** Promote environmental sustainability and protect the natural environment.
- **Healthy Communities.** Protect the health of residents; foster efficient development patterns that optimize travel, housing and employment choices and encourage active transportation.
- **Social Equity.** Provide an equitable level of transportation services to all segments of the population.
- **System Preservation and Safety.** Preserve and ensure a sustainable and safe regional transportation system.

It is AMBAG's intent that the goals and policy objectives be supported by the individual RTPs prepared by Monterey, San Benito, and Santa Cruz counties. The goals, policies and objectives that create the framework for each RTP that comprise the MTP are summarized below.

2.3.1.1 2022 Monterey County RTP

The 2022 MC-RTP Policy Element is intended to address transportation issues affecting Monterey County. For each issue, a goal to address that issue is adopted, and then policies/objectives are adopted to accomplish that goal. Goals for the 2022 MC-RTP include:

- **Goal 1: Access and Mobility.** Deliver a reliable and efficient transportation system for all users.
- **Goal 2: Safety and Health.** Create a safer transportation system that fosters countywide health.

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- **Goal 3: Environmental Stewardship.** Protect the County's natural environment and promote resiliency of the built environment.
- **Goal 4: Equity.** Promote social and geographic equity through transportation planning, engineering and design.
- **Goal 5: Economic Vitality.** Foster an economically viable transportation system that supports the regional economy.

2.3.1.2 2045 San Benito County RTP

The 2045 SBC-RTP Policy Element is intended to address transportation issues affecting San Benito County. For each issue, a goal to address that issue is adopted, and then policies/objectives are adopted to accomplish that goal. Goals for the 2045 SBC-RTP include:

- **Goal 1: Access and Mobility.** Provide convenient, accessible, and reliable travel options while maximizing productivity for all people and goods in the region. Promote cross jurisdictional coordination to bring about efficiency and connectivity.
- **Goal 2: System Preservation & Safety.** Preserve and ensure a sustainable and safe regional transportation system.
- **Goal 3: Economic Vitality.** Raise the region's standard of living by enhancing the performance of the transportation system. Pursue suitable and flexible funding to maintain and improve the System.
- **Goal 4: Healthy Communities.** Protect the health of our residents; foster efficient development patterns that optimize travel, housing, and employment choices and encourage active transportation.
- **Goal 5: Social Equity.** Provide an equitable level of transportation services and projects to all segments of the population. Encourage community participation, paying close attention to traditionally underrepresented communities.
- **Goal 6: Environment.** Promote environmental sustainability and protect the natural environment.

2.3.1.3 2045 Santa Cruz County RTP

The 2045 SCC-RTP Policy Element is intended to address transportation issues affecting Santa Cruz County. For each issue, a goal to address that issue is adopted, and then policies and objectives are adopted to accomplish that goal. Goals for the 2045 SCC-RTP include:

- **Goal 1:** Establish livable communities that improve people's access to jobs, schools, recreation, healthy lifestyles and other regular needs in ways that improve health, reduce pollution and retain money in the local economy.
- **Goal 2:** Reduce transportation related fatalities and injuries for all transportation modes.
- **Goal 3:** Deliver access and safety improvements cost effectively, within available revenues, equitably and responsive to the needs of all users of the transportation system and beneficially for the natural environment

This framework of goals and policy objectives was used to guide the development of the 2045 MTP/SCS and specifically the performance measures developed by AMBAG to evaluate how well the 2045 MTP/SCS and alternatives perform. For reference, the performance objectives are provided in the 2045 MTP/SCS and addressed in more detail in Section 7, *Alternatives*.

2.3.2 Transportation Investments

Chapter 2 sets forth the proposed investments and strategies within the 2045 MTP/SCS. The investments discussed in the chapter are intended to optimize the performance and to strategically expand the existing transportation system as shown on Figure 2-2, Figure 2-5 and Figure 2-7. The investments address transportation system preservation, roadway, rail, bus, airport, bicycle and pedestrian facilities and demand and systems management. The Monterey Bay area has invested and placed a high priority on protecting the region's existing multimodal transportation system to ensure that the system is operating efficiently, safely, and effectively as possible. Transportation investment strategies have not changed in this 2045 MTP/SCS update. As described previously, project cost estimates and revenue assumptions have been updated, along with some minor changes to the transportation project lists. However, the overall vision, policies and goals have not changed from 2040. The performance metrics have been updated and expanded from the 2040 MTP/SCS (see Appendix C).

One of the primary goals of the 2045 MTP/SCS is to reduce per capita GHG emissions over the next approximately 25 years. A strategic transportation system expansion would provide the region with mobility and accessibility by targeting expansion around bus transit, rail, key roadways, and active transportation. The 2045 MTP/SCS provides over \$7.5 billion for highway, local streets and roads investments which include corridor improvements, roadway widenings and extensions, new roads, and maintenance/repair. A significant portion of local streets and road investments also include bicycle and pedestrian improvements.

Another focus of the 2045 MTP/SCS is providing \$3.9 billion for a long-term public transit network that meets the regions mobility needs. The remaining transit funding is separated between maintenance and operation costs, as well as adding new transit vehicles and infrastructure.

The 2045 MTP/SCS emphasizes active transportation projects, which refers to bicycle and pedestrian facilities. Since one of the primary goals of the 2045 MTP/SCS is to reduce GHG emissions, active transportation plays a large role in reducing congestion, increasing health and improving overall quality of life. The 2045 MTP/SCS intends to make active transportation more attractive, safe and feasible for all different users in the region, and the 2045 MTP/SCS has provided nearly \$988 million for active transportation projects. These investments and improvements include addition of bike lanes, widenings and extensions, sidewalks, and trails. These investments are in addition to the active transportation improvements included as part of the local streets and roads investments. These efforts are consistent with the Complete Streets Act of 2008 (AB 1358).

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The 2045 MTP/SCS also considers airport improvements which would improve regional and state system capacity and safety. AMBAG is not responsible for approving improvements to airports.

The transportation network is crucial for the region as the network provides the access and means of travel for the agricultural products grown in the region. The health of all the major roads, highways and railways is vital to the success and safety of the region. Finally, the 2045 MTP/SCS also includes TDM and TSM programs and projects which intend to improve the efficiency and effectiveness of the network. The strategies employed by these management programs would reduce vehicular demand and congestion, which is directly in line with the goal of reducing GHG emissions. The 2045 MTP/SCS allocates nearly \$127 million to TDM strategies which include vanpool and telecommuting. The 2045 MTP/SCS allocates \$106 million to TSM projects and programs which include, but are not limited to, autonomous vehicles, shared vehicles, incident management, ramp metering, and traffic signal synchronization.

The 2045 MTP/SCS transportation projects are further described in Section 2.4, below. A complete discussion of 2045 MTP/SCS transportation investments and plans is provided in Chapter 2 of the 2045 MTP/SCS.

The 2045 MTP/SCS includes financially constrained projects which identify the programs and projects proposed by RTPAs, local and county government, public transit operators and airport operators in the tri-county region for which funding will likely be available. These include a full range of programs and projects intended to improve roadway capacity/vehicular flow, enhance transit operations, improve safety, support transportation planning and travel demand management, promote high occupancy vehicle use, encourage active transportation travel and improve multimodal and intermodal facilities.

The 2045 MTP/SCS does not provide project designs or a construction schedule. Adoption of the 2045 MTP/SCS would not represent an approval action for any of the individual transportation programs and projects listed in the financially constrained Plan. Detailed site specific alignment, location, design and scheduling of the improvement projects which are included in the 2045 MTP/SCS are not fixed by the 2045 MTP/SCS, and these individual projects may be modified substantially from their initial description in the 2045 MTP/SCS at the time they are considered for implementation.

2.3.3 Financial Plan

The Financial Plan identifies how much money is available to support the region's surface transportation investments, including transit, highways, local road improvements, system preservation and demand management goals. It also addresses the need for investment in goods movement infrastructure. The projects included in the 2045 MTP/SCS are "financially constrained," which means there is a plan in place to secure the funding. In most cases, future programming action will be required.

The financial forecasts in the 2045 MTP/SCS are based on reasonably foreseeable revenues. The projections are calculated using a combination of historical averages, current trends

and/or state and federal actions. Actual revenues will vary from year to year. The financial projections and estimation methods used in the 2045 MTP/SCS were developed collectively with the transportation planning, state and local agencies in the Monterey Bay Area including AMBAG, TAMC, SBtCOG, SCCRTC, Caltrans, Monterey-Salinas Transit (MST), the Santa Cruz Metropolitan Transit District (SC METRO), the three counties and 18 cities.

The Financial Plan identifies major federal, state, and regional/local funding sources anticipated to be available during the life of the 2045 MTP/SCS. Most federal revenue is projected to come from the Highway Bridge Program, FEMA funding for emergency road repairs, the Urbanized Area Formula Program (Section 5307), the FAA Airport Improvement Program, and the Regional Surface Transportation Program. State revenue sources include the State Highways Operation and Protection Program (SHOPP), State Transportation Improvement Program (STIP) and Senate Bill 1 (SB 1) funding. Local revenue sources include the Transportation Development Act (TDA)/Local Transportation Fund (LTF), gas tax, transit fares and developer fees. In November 2016, TAMC and SCCRTC passed local sales tax measures, Measure X and Measure D respectively, to fund transportation projects of all modes in their respective counties. In addition, SBtCOG passed Measure G, a local sales tax measure in November 2018 to fund transportation projects in San Benito County. This significant local investment in transportation will provide a stable funding source for local road maintenance, transit operations, active transportation investments and other congestion reducing projects. Together, these measures are expected to generate roughly \$1.4 billion over 25 years.

Total revenue is projected to be nearly \$13.3 billion in current year dollars. A complete discussion of the 2045 MTP/SCS financial plan is provided in Chapter 3 of the 2045 MTP/SCS.

2.3.4 Sustainable Communities Strategy

The SCS ultimately consists of the preferred land use and transportation scenario selected by AMBAG as best capable of meeting MTP objectives, including regional GHG reduction targets set by CARB. The 2045 MTP/SCS simultaneously addresses the region's transportation needs and encourages infill development near transit investments to reduce vehicle miles traveled (VMT) and overall GHG emissions. This strategy selectively increases residential and commercial land use capacity within transit corridors in existing urban areas, shifting a greater share of future growth to these corridors.

The SCS, as outlined in Chapter 4 of the 2045 MTP/SCS, includes a preferred land use scenario, SCS toolkits, opportunity areas, programs and strategies, protection of natural resources, and implementation strategies, as described below:

- **SCS Toolkits.** The SCS toolkits consist of examples of projects and best practices to help achieve regional and local sustainability goals and emission reduction targets through efforts to provide housing, jobs and services in proximity to one another and to better link them by transit, and safe and convenient bicycle and pedestrian access. The tools are grouped in separate Infill Housing, Economic Development and Transportation sections of the toolkit.

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- **Opportunity Areas.** SB 375 includes provisions for CEQA streamlining for developments that meet a specific set of criteria specified in California Public Resources Code Section 21155 et seq. At a minimum, these criteria include proximity to high quality transit. Areas that qualify for streamlining are called “opportunity areas.”
- **Programs and Strategies.** This section describes programs and strategies that are generally less costly than infrastructure improvements to the transportation network, but that can improve traffic flow as well as the effectiveness of the whole transportation system. These programs and strategies include TSM measures, such as ramp metering, and TDM measures, such as promoting telecommuting and expanding vanpool services.
- **Protection of Natural Resources.** The SCS incorporates adopted habitat mitigation plans as well as the conservation of other sensitive resource lands such as steep slopes, wetlands, and floodplains as reflected in plans by local jurisdictions. These local and regional plans ensure the conservation of plant and animal species, and natural habitats through low density zoning, conservation easements, and land purchases.
- **Implementation Strategies.** This section provides a list of strategies that AMBAG, RTPAs, local jurisdictions and other stakeholders may consider to successfully implement the SCS.

The transportation projects, programs, and strategies contained in the 2045 MTP/SCS are major components of the SCS. However, the SCS also focuses on the general land use growth pattern for the region, because the geographic relationships between land uses—including density and intensity— help determine travel demand. Thus, to meet requirements of SB 375, the SCS:

- Identifies existing and future land use patterns;
- Establishes a future land use pattern to meet GHG emission reduction targets;
- Identifies transportation needs and the planned transportation network;
- Considers statutory housing goals and objectives;
- Identifies areas to accommodate long-term housing needs;
- Identifies areas to accommodate eight-year housing needs;
- Considers resource areas and farmland;
- Presents implementation strategies; and
- Complies with federal law for developing an MTP.

Overall, the land use scenario in the SCS provides a diverse mixture of land uses, such as commercial and retail uses, in combination with residential uses that have been shown to reduce vehicle miles traveled and thereby reduce GHG emissions. Combining mixed use development with infill development, rather than building on the fringes of urbanized areas, reduces GHG emissions by reducing the distance that people must travel to meet their basic needs. The SCS land use scenario assumes increased density via infill development and mixed use in existing commercial corridors in combination with high quality transit service that includes bus service that has headways of 15 minutes or less during the peak period or rail

service. By combining increased density and accessibility to transit there is a higher likelihood that people will choose to use transit rather than drive to maximize VMT reduction. Figure 2-2 through Figure 2-8 show the SCS preferred land use scenario, as well as location of the MTP projects.

In developing the SCS scenario alternatives, AMBAG created a set of place types which established a set of land use designations common to general plans for the three counties and 18 cities in the region. The following metrics and characteristics were established as the primary determinants of place type designations:

- **Density.** The general density of a particular land use, expressed as Floor to Area Ratio (FAR) and/or as dwelling units per acre
- **Setting.** The surrounding land use and development context
- **Character.** The urban and built form, including building placement, street pattern and pedestrian or auto-orientation
- **Transportation.** The level of transit access, quality of the pedestrian environment and presence of bicycle infrastructure

The SCS preferred scenario is consistent with the region's RHNA and has enough housing capacity to accommodate the current (6th Cycle) RHNA. The 6th Cycle regional housing need determination (RHND) for AMBAG is 33,274 units and for SBtCOG is 5,005 units. The Draft RHNA Plan is scheduled to be released in early 2022 and approved in summer 2022. In addition to accommodating the RHNA, the SCS identifies areas in the AMBAG region sufficient to house all the population of the region, including all economic segments of the population over the course of the planning period through 2045. Housing in the AMBAG region is further discussed in Section 4.13, *Population and Housing*.

The SCS does not create a mandate for land use policies at the local level. In fact, SB 375 specifically states that the SCS cannot dictate local land use policies (see Government Code Section 65080(b)(2)(K)). Rather, the SCS is intended to provide a regional policy foundation that local governments may build upon as they choose.

2.4 2045 MTP/SCS and County Level RTP Transportation Projects

The types of transportation projects comprising the MTP and county level RTPs are summarized below. All projects by type and jurisdiction are shown in Appendix B.

- **Active Transportation.** These projects are focused on improvements designed to benefit pedestrians and bicyclists. They include the construction of Class I-III bicycle lanes, sidewalk gap closures, ADA accessible ramps and sidewalks, pedestrian bridges, widening shoulders, maintenance, rehabilitation and repair projects, installation of traffic calming devices, roundabouts, new lighting, and trail access. Within Monterey County, specific projects include the Fort Ord Regional Trail and Greenway (FORTAG), which would include approximately 28 miles of bike and pedestrian trails connecting the City of Marina, California State University Monterey Bay campus, and City of Seaside; citywide intersection ADA upgrades in the City of Monterey; and installation of bikeways on

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numerous local streets, such as Williams Road in Salinas, Bluff Road near Moss Landing, Castro Street in Monterey, and Central Avenue in Monterey. Within San Benito County, some specific projects include construction of a portion of the San Benito River Recreational Trail and installation of bike lanes along McCray Street, Cerra Vista Road, Hawkins Street, Clearview Drive, Steinbeck Drive, Meridian Road, Bridgevale Road, Berkeley Drive, Airline Highway, Highway 156, and Valley View Drive in Hollister. In Santa Cruz County, specific projects include several segments of the Monterey Bay Sanctuary Scenic Trail (MBSST) Network, installation of bicycle lanes and pedestrian sidewalks on State Routes (Highway) 9 through Felton, and installation of a bicycle path along the levee of the Pajaro River.

- **Highway Improvements.** These projects are generally focused on U.S. 101 and the state highway system throughout each of the three counties. They include the development of new infrastructure such as new interchanges, new and widened roadway lanes, ramp improvements, new overcrossings, roundabouts, and other modifications designed to improve safety and relieve congestion. Specific projects in Monterey County include the conversion of Highway 156 from an expressway to a freeway, construction of a new interchange on U.S. 101 at Highway 156, and construction of frontage roads along U.S. 101 in South County. In San Benito County, specific projects include widening U.S. 101 between the County line and Highway 156 and the Highway 25 Expressway Conversion Project and construction of a four-lane expressway north of existing Highway 156. Improvements to both U.S. 101 and Highway 156 will serve goods movement in the region. Specific projects in Santa Cruz County include the construction of auxiliary lanes on Highway 1 from State Park Drive to Bay Avenue/Porter Street, from 41st Avenue to Soquel Avenue and from Freedom Boulevard to State Park Drive.
- **Highway Operations, Maintenance and Rehabilitation.** These projects focus on operational improvements to use existing highway system infrastructure more safely and efficiently. These include resurfacing, restriping, signal modifications and other improvements. Representative actions include funding the State Highway Operations and Protection Program (SHOPP) and safety in all three counties; operational relief improvements, such as turn pockets and shoulder widening, to Highway 218 in Monterey County; Highway 156/Fairview Road Intersection Improvements in San Benito County; and replacement of the Highway 1 bridge over San Lorenzo River in Santa Cruz County.
- **Local Street and Road Improvements.** These projects are generally focused on county and local streets and roadways. They include the development of new infrastructure such as street widening, realignments, extensions and related improvements designed to improve safety and capacity. Representative improvements include road widening projects along the Marina-Salinas Corridor, including Davis Road and Imjin Parkway, in Monterey County; widening Fairview Road from McCloskey Road to Highway 25 in south San Benito County and intersection modifications and widening along the Bay Street Corridor from Mission Street to Escalona Drive in Santa Cruz County.

- **Local Street and Road Operations, Maintenance and Rehabilitation.** These projects focus on improvements to existing county and local streets and roadway infrastructure. These include resurfacing, restriping, signal modifications, streetscapes and other improvements designed to maintain and more efficiently and effectively use existing facilities. Specific projects in Monterey County include the Broadway corridor improvement project in Seaside and routine rehabilitation and maintenance of paved roadways. Specific projects in San Benito County include system preservation and maintenance within unincorporated San Benito County and the City of Hollister and installation of a new bridge at Union Road over the San Benito River. Projects in Santa Cruz County include ongoing maintenance, repair, and operation of the street system within unincorporated Santa Cruz County and the cities of Santa Cruz, Watsonville, Capitola, and Scotts Valley
- **Rail Projects.** The only regular rail passenger train currently operating in the region is provided by Amtrak, the Coast Starlight. It connects Los Angeles to Seattle and stops in Salinas, the only Amtrak rail station in the region. This route operates one train in each direction daily. In the future, Amtrak plans to expand service by offering the Coast Starlight service with stations in Soledad and King City. There is also bus service in the region for connections to the Capital Corridor route between San Jose and Sacramento. TAMC and Caltrain have collaborated to establish an extension of the Caltrain system from Gilroy to Salinas, with future stations planned for Pajaro. This will provide a critical passenger rail connection from the Monterey Bay area to San Jose, Silicon Valley, San Francisco, and all connecting interregional and local transit routes.
- **Other Projects.** These projects are primarily focused on the construction of various improvements at public airports within the study area. This EIR focuses on ground transportation projects that improve access to airports. Other airport site improvements such as additional taxiways or on-airport access roads (MON-MAA015-MAA), pavement rehabilitation (MON-MAA021-MAA), and airport property infrastructure improvements (MON-MAA027-MAA) as runway expansions or terminal upgrades are not part of the proposed project analyzed in this EIR. Future project-specific environmental review will be required for these projects, to be completed by the applicable airport district. Other projects in San Benito County include COG planning and administration. Other projects in Santa Cruz County include constructing multi-modal infrastructure improvements associated with the Sustainable Santa Cruz County Plan, RTC administration and planning, and Measure D administration and implementation.
- **Transportation Demand Management.** Within Monterey County, these projects are focused on administering the Monterey County Go831 Travel Demand Management Program. In Santa Cruz County, projects are focused on administering the Cruz511 Traveler Information and GO Santa Cruz County commuter incentive programs. Funds would cover the existing vanpool program within Monterey County and the commute solutions rideshare program in Santa Cruz County. TDM projects include a rideshare/commute alternatives program in Monterey County; rideshare and vanpool programs in San Benito County; and various vanpool, bicycling and commuter incentive programs designed to reduce VMT in Santa Cruz County.

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- **Transit ADA.** These funds would cover paratransit services and related requirements in Monterey and Santa Cruz counties. In Monterey County, this also includes administration of the Countywide Senior & Disabled Transportation Program, a grant program funded through Measure X and Monterey-Salinas Transit's implementation of Measure Q, Mobility Management services. No new transit ADA projects are proposed for San Benito County.
- **Transit Improvements.** These projects include improvements such as the purchase of rolling stock, bus rehabilitation, purchase of communication equipment, bus shelters and ancillary equipment used to rehabilitate/upgrade existing transit stops/stations. Specific improvements would include a rail extension and bus rapid transit projects in Monterey County and commuter rail to connect San Benito County with Santa Clara County. Specific projects in Santa Cruz County include bus on shoulder on Highway 1 between interchanges and on the outside shoulder through interchanges.
- **Transit Operations.** Funds would cover transit operations and preventative maintenance projects. Within Monterey, San Benito and Santa Cruz counties, the majority of funds would cover transit operations. Within Monterey County, funds would cover fixed-route and public demand response services; within San Benito County, funds would cover general transit operations and transit planning and technology improvements; within Santa Cruz County, funds would cover operations and maintenance for exiting bus services.
- **Transit Rehabilitation.** Within Monterey County, these projects include bus preventative maintenance, bus station rehabilitation and renovations. In San Benito County, these projects include transit vehicle replacement and bus stop improvements. In Santa Cruz County, these projects include bus replacement and maintenance, transit system technology improvements and bus stop improvements.
- **Transportation System Management.** These projects include signal adaptive system and upgrades to signals within the Pacific, Franklin, and Munras corridors in the City of Monterey; emergency call boxes and intelligent transportation systems in San Benito County; and freeway service patrols on Highways 1 and 17, call box system maintenance and transit priority queues in Santa Cruz County.

2.5 Intended Use of EIR

2.5.1 Agencies Expected to Use EIR in Decision-making

The *State CEQA Guidelines* (Section 15124(d)) require EIRs to identify the agencies that are expected to use the EIR in their decision-making and the approvals for which the EIR will be used to the extent known at the time the EIR is released. This EIR will inform AMBAG, in addition to other responsible agencies, persons, and the public, of the environmental effects of the proposed 2045 MTP/SCS, MC-RTP, SC-RTP, and SB-RTP and the identified alternatives. AMBAG will use the EIR for the purposes of review and approval of the 2045 MTP/SCS and the RTPAs will use the EIR for the purposes of review and approval of the county level 2045 RTPs.

The lead agencies for projects analyzed in this program EIR may use it as the basis for first-tier analyses of topics such as regional growth, regional transportation and land use alternatives and cumulative impacts. RTPAs may incorporate information provided in this EIR into future transportation plans such as congestion management programs, countywide transportation plans, or county bicycle and pedestrian plans. Other agencies expected to use the EIR include: Caltrans, RTPAs, transit providers in the region (such as MST, SC METRO and San Benito County Express), the Monterey Bay Air Resources District (MBARD), cities and counties.

2.5.2 Project Permits and Approvals

To complete the 2045 MTP/SCS and county level RTPs process, AMBAG will first certify the EIR and then consider adopting the 2045 MTP/SCS. Subsequently, TAMC, SBtCOG, and SCCRTC will consider adopting the EIR and their RTPs. Additional environmental review will be conducted by implementing agencies, as the lead agency for the individual projects contained within the 2045 MTP/SCS, prior to project implementation.

Depending on the location of the project, individual transportation projects identified in the 2045 MTP/SCS, MC-RTP, SC-RTP, and SB-RTP would have to be approved by one or more of the following agencies:

- California Department of Transportation
- Monterey Bay Air Resources District
- California Coastal Commission
- Transportation Agency for Monterey County
- Council of San Benito County Governments
- Santa Cruz Regional Transportation Commission
- Monterey-Salinas Transit
- Santa Cruz Metropolitan Transit District
- San Benito County Express
- Cities and counties in the AMBAG region (which are also responsible for approving land use projects)
- Airports
- California Department of Fish & Wildlife
- Regional Water Quality Control Board
- California Public Utilities Commission
- California Coastal Commission

Caltrans would be a Responsible Agency for all projects planned within its rights-of-way. Any public agencies or private developers contemplating work within a Caltrans right-of-way are required to obtain an approved encroachment permit from Caltrans prior to beginning that work.

2.6 Relationship with Other Plans and Programs

The 2045 MTP/SCS and the RTPs prepared by the Monterey, San Benito, and Santa Cruz RTPAs have been evaluated for consistency with the goals, policies and objectives currently being implemented by municipal and county planning agencies within the region as well as the Local Area Formation Commissions (LAFCO) for Monterey, San Benito, and Santa Cruz counties. This discussion is provided in Section 5.0, *MTP Consistency with Other Plans Analysis*.

The 2045 MTP/SCS would be implemented with several other existing AMBAG programs designed to reduce adverse impacts to transportation resources, air quality, GHG emissions and energy. As the MPO for the Monterey Bay region, AMBAG strives to provide leadership in the areas of transportation, environmental, and economic planning. One of the ways AMBAG improves the transportation system, while at the same time improving air quality and stimulating the local economy, is to provide commuters with viable options to driving alone. AMBAG works closely with regional partner agencies such as TAMC, SBtCOG, SCCRTC, MST, SC METRO, MBARD, Caltrans and local jurisdictions on various transportation and land use planning projects and activities. AMBAG staff provides technical and program related assistance to partner agencies for project and/or program implementation. The following is a summary of programs that AMBAG and partner agencies support:

1. **AMBAG Sustainability Program.** AMBAG partners with public agencies and non-government organizations to promote sustainability throughout the region and help reduce energy use through energy efficiency. The AMBAG Sustainability Program is currently implementing the following initiatives:
 - a. Creating 2018, 2019 and 2020 Community-wide GHG inventories for all Central Coast Community Energy member jurisdictions.
 - b. Providing technical assistance and support for AMBAG jurisdictions pursuing climate action plans.
 - c. Providing energy efficiency technical support to public sector customers in Monterey County.
 - d. Providing Proposition 39 technical assistance services to all school districts in the AMBAG region.
 - e. Developing the Rural Regional Energy Network in order to bring new energy efficiency programs to the AMBAG region.
2. **Electric Vehicle Infrastructure for the Monterey Bay Area.** AMBAG conducted a suitability study identifying the best locations for electric vehicle (EV) infrastructure in the Monterey Bay Area. TAMC, SCCRTC, and other partner agencies have used the EV master plan to identify priority areas for other charging locations under this project, and additional studies built on this plan to expand EV infrastructure throughout the Monterey Bay Area.

AMBAG is working with the Santa Barbara County Association of Governments (SBCAG) and the San Luis Obispo Council of Governments (SLOCOG) to develop the Central Coast Zero Electric Vehicle Strategy (CCZEVS). The CCZEVS will identify gaps and opportunities to implement ZEV infrastructure on the Central Coast, including on or near the State Highway System, major freight corridors, and transit hubs. This strategy is important as it will seek to accelerate large scale, affordable, and equitable ZEV development across all altitudes of the public sphere in the wake of Governor Newsom's EO N-79-20. This strategy will directly advance the goals outlined in the 2045 MTP/SCS as well as the goals of CalSTA's CAPTI.

3. **Complete Streets Planning & Design Guidelines.** Complete streets are streets for everyone that are designed and operated to enable safe access for all users including pedestrians, bicyclists, motorists, and transit riders. Complete streets are designed for all ages and abilities and are designed to take the focus away from automobiles. An existing transportation budget can incorporate complete streets projects with little to no additional funding, accomplished through reprioritizing projects and allocating funds to projects that improve overall mobility. Complete streets gain more productivity out of the existing roadway and public transportation system, which is vital to reducing congestion and at a low cost, can be fast to implement and have a high impact.
4. **Rideshare.** RTPAs provide Rideshare and Commute Alternatives, Rideshare and Emergency, developing Park & Ride Lots. SCCRTC provides ridematching services, multi-modal trip planning, and traveler information via the Cruz511 and GO Santa Cruz County programs.

TAMC oversees the Go831 Program in Monterey County. The purpose of the Go831 Program is to reduce vehicle miles travelled, traffic and greenhouse gas emissions in Monterey County through the implementation of travel demand management (TDM) strategies. The Go831 Program works directly with major employers, schools and visitor-serving businesses to provide planning assistance, tools and support to these institutions so they can establish and manage their own "smart commute" programs. The core travel demand management strategies promoted through the Go831 Program are:

- Re-mode (try carpool, vanpool, transit, walking, bicycling or teleworking);
- Re-time (travel at a different time);
- Reduce (# of trips via telecommuting); and
- Re-route (choose alternative route) when possible.

Additional strategies include providing ongoing incentives, challenges, communications and social networking opportunities to create norms around smart commuting.

In 2010, AMBAG completed the AMBAG Vanpool Program Study funded by Caltrans grants, which identified the existence and extent of the unmet transportation needs among the agricultural worker population in the region. The study provided valuable information about the population and areas that needed the service. This program is operated by CalVans and AMBAG is a member agency.

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5. **Bike to School Day and Bike to Work Day Program.** International Programs supported by AMBAG and RTPAs to promote students and residents to bicycle to school and work. More information can be found at: www.walkbiketoschool.org
6. **Safe Routes to School Program.** This program aims to improve the health of kids and the community by making walking and bicycling to and from school safer, easier, and more enjoyable.
 - TAMC's Safe Routes to Schools Program addresses both planning for safe routes, and educational programs on how to safely walk and bike to school formally classified under the names "Bike Smart", "Walk Smart" and "Evaluation." The Evaluation program includes the development of safe routes to school plans, data collection and reporting. TAMC recently completed development and adoption of the Safe Routes to School Plan for the cities of Seaside and Marina and is actively developing the Salinas Safe Routes to School Plan. TAMC submitted a grant application to develop a Salinas Valley Safe Routes to Schools Plan in 2021, which includes the cities of Gonzales, Greenfield, King City and Soledad. After plan adoption, TAMC works with the local jurisdiction to pursue funding to implement the identified improvements.
7. **Regional Ecological Framework Project.** The Regional Ecological Framework Project is a project that produces a series of maps identifying sensitive resource areas near planned regional transportation projects in the Monterey Bay Area Region (AMBAG 2014). The maps allow transportation agencies in the region to identify sensitive resources and develop mitigation early in the project planning process.
8. **Zero Emission Electric Motorcycle Pilot Project.** To reduce air pollution while contributing to the safety of the community, providing electric motorcycles to regions' police departments is an important first step in demonstrating the effectiveness of electric vehicles.
9. **Freeway Service Patrol and Motorist Assistance Program.** The Freeway Service Patrol (FSP) is a joint program provided by the California Department of Transportation (Caltrans), the California Highway Patrol (CHP) and the local transportation agency. The FSP program is a free service of privately owned tow trucks that patrol designated routes on congested urban California freeways.
10. **Seniors & Accessible Transportation Services.** Focused transportation services to meet the unique needs of seniors and other individuals with accessibility issues.

3 Environmental Setting

This section provides a general overview of the environmental setting for the 2045 MTP/SCS, including a regional setting, sub-regional setting, and a description of the regional transportation system. This section also outlines the EIR baseline and approach to both direct and cumulative impact analyses. More detailed descriptions of the environmental setting for each environmental issue area can be found in Section 4, *Environmental Impact Analysis*.

3.1 Regional Setting

The AMBAG region is comprised of Monterey, San Benito, and Santa Cruz counties. These counties are located along the Central Coast of California and generally surround Monterey Bay. Monterey Bay is located south of the San Francisco Bay area and north of San Luis Obispo County. San Mateo and Santa Clara counties are located to the north; Merced and Fresno counties are located to the east. Monterey County shares a short border segment with Kings County to the southeast. The combined area encompasses approximately 3.3 million acres, incorporating the Pajaro and Salinas River Valleys, adjacent coastal lowland, and surrounding mountains. Terrain within the region is varied. The Santa Cruz, Gabilan, and Santa Lucia mountain ranges and the Diablo range are located along the eastern border of the tri-county region. The highest elevation is the Junipero Serra Peak (5,685 feet above sea level), located in Monterey County. The Pajaro and Salinas Valleys contain some of the most productive agricultural soils in the United States of America.

3.2 Sub-Region Descriptions

Monterey County covers approximately 2.1 million acres with a population of approximately 441,143 people according to AMBAG's 2022 Regional Growth Forecast (AMBAG 2021). San Benito County covers approximately 890,000 acres with a population of approximately 62,353 people as of 2020. Santa Cruz County covers approximately 285,000 acres with a population of approximately 271,233 people as of 2020.

The total population within the AMBAG region is estimated at approximately 774,729 people as of 2020. Most of the population is concentrated within the coastal plain that extends from the Santa Cruz/Capitola area in the north and the Monterey Peninsula to the south. The largest city in Monterey County is Salinas, with an estimated population of 162,222 people or approximately 21 percent of the total population within the AMBAG region (AMBAG 2021). Other urban or centralized population centers include the cities of Monterey, Carmel-by-the-Sea, Pacific Grove, Marina, Sand City, Seaside and Del Rey Oaks. The cities of Gonzales, Soledad, Greenfield, and King are in the Salinas River Valley southeast of Salinas. Monterey County contains several unincorporated communities, including Bradley, Carmel Valley, Del Monte Forest, Pine Canyon, Castroville, Elkhorn, Las Lomas, Pajaro, Prunedale and San Ardo. The cities of Hollister and San Juan Bautista are the only incorporated cities in San Benito County and are generally the only urbanized areas. Within Santa Cruz County, the population

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is concentrated in the cities of Capitola, Santa Cruz, Scotts Valley, and Watsonville. Unincorporated communities include Aptos, Freedom, Live Oak and Soquel.

The tri-county economy is primarily based on agriculture. Tourism also is important particularly in Santa Cruz and Monterey during summer months. Cities such as Santa Cruz/Scotts Valley, Hollister and unincorporated areas located in the northern portion of the region serve as bedroom communities for people working in Silicon Valley and Santa Clara County to the north.

3.3 Regional Transportation System

3.3.1 Monterey County

Monterey County owns and maintains approximately 1,240 miles of roads. In addition, there are 575 miles of private roads, two minor highways (25 and 146) and six highways that include Highways 1, 68, 101, 156, 183 and 218.

Within northern Monterey County, U.S. 101 is a rural four-lane highway with left-turn channelization at most intersections. In southern Monterey County, U.S. 101 is the primary north-south corridor through the Salinas Valley, between Salinas and the cities of Gonzales, Soledad, Greenfield, and King City. This four-lane freeway/expressway provides connections to Highways 198 and 146 in southern parts of the County. U.S. 101 is critical for interregional transportation needs, including goods movement and tourism.

State Route 68 is a designated scenic route that connects the world-renowned Monterey Peninsula to U.S. 101 and the Salinas Valley, spanning approximately 20 miles. State Route 218, locally known as Canyon Del Rey Boulevard, runs 2.85 miles from State Route 1 in the west to State Route 68 in the east, traversing the cities of Seaside and Del Rey Oaks and provides a major west-east route for the area.

State Route 1 in Monterey County traverses through the Coastal region of Big Sur and through the Monterey Peninsula, connecting at the south to San Luis Obispo County and north to Santa Cruz County.

Highway 183 is 10 miles in length, beginning at the junction of U.S. 101 in Salinas and continuing westerly to the junction of Highway 1 in Castroville. Highway 156 is a two-lane highway, serving as an east-west connector from U.S. 101 to Highway 1 and the Monterey Peninsula. Highway 146 is a two-lane highway beginning in Soledad and continuing to the junction of Highway 25 in San Benito County. This is a primary access route to the Pinnacles National Park.

Highway 198 is a 25.8-mile, two-lane conventional highway, beginning at U.S. 101 just west of San Lucas and continuing east to the Fresno County line. Highway 25 is a two-lane rural highway, beginning at the junction of Highway 198 and continuing north to the San Benito County line. It primarily serves inter-regional traffic between Monterey, San Benito, and Santa Clara counties.

Both passenger and freight rail service are available in Monterey County. Amtrak provides rail services twice daily via a station stop in Salinas. Four freight stations are located at Castroville, Gonzales, Salinas, and Watsonville Junction (Pajaro Community Area). Public transit services are provided by Monterey-Salinas Transit (MST). MST is a publicly owned and operated system providing service to the greater Monterey and Salinas areas with routes serving Carmel Valley and unincorporated areas in northern and southern Monterey County. Greyhound provides intercity passenger service between Monterey Peninsula cities, Salinas, and Salinas Valley cities, as well as destinations across California and nationally.

Monterey County has approximately 887 miles of bicycle and pedestrian routes. One of the major continuous bicycle paths in the county is the Monterey Bay Coastal Recreation Trail, which is approximately 29 miles long stretching from Castroville to the Monterey Peninsula and parts of Pebble Beach. The Monterey Bay Coastal Recreation Trail runs adjacent to the Fort Ord Dunes State Park located between the cities of Marina and Seaside. The state park also contains its own bike path that is accessible on both ends of the Fort Ord Dunes Park from the Monterey Coastal Recreation Path. Sections of the Monterey Bay Sanctuary Scenic Trail Network have been completed in Monterey County between Pacific Grove and Monterey, between Sand City and Seaside and between Marina and Castroville. Most of these sections are Class I bikeways, but short sections are Class II and Class III (TAMC 2008). The Monterey Bay Sanctuary Scenic Trail Network will connect to trail sections that have either been constructed or will be constructed in Santa Cruz County.

Monterey County is served by four airports: Monterey Regional Airport, Salinas Municipal Airport, Marina Municipal Airport and Mesa Del Rey Airport (King City). The Monterey Regional Airport is owned and operated by the Monterey Peninsula Airport District and is served by commercial air carriers (Monterey County 2007). Currently, flights from the Monterey Regional Airport connect to several major cities or destinations in the western United States, including Burbank, California; Dallas, Texas; Denver, Colorado; Las Vegas, Nevada; Los Angeles, California; Orange County, California; Phoenix, Arizona; Portland, Oregon; San Diego, California; San Francisco, California; and Seattle, Washington.

Agriculture is the largest land use in Monterey County and represents about 56 percent of the total land area in the county. The second largest land use, about 23.5 percent of the total land area, consists of public and quasi-public land uses such as parks, military facilities, recreational and community facilities. Approximately 4.8 percent of Monterey County (including the incorporated cities) is developed with residential, commercial, and industrial land uses. The remaining 16 percent is in resource conservation or other land uses. Most of the urban development is concentrated in the northern one-third of the county, near several incorporated cities including Salinas, Marina and Monterey. Likewise, most of the county's population is concentrated in the incorporated cities located in the northern one third of the county (Monterey County 2007).

3.3.2 San Benito County

San Benito County owns and maintains approximately 432 miles of roads with approximately 90 miles of state highways (Caltrans 2019). Within unincorporated San Benito County, there

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are approximately 540 miles of local County roadways. Caltrans maintains five state highways in San Benito County: Highway 25, 129, 146, 156, and U.S. 101.

Highway 25 traverses the entire length of San Benito County from the southern county boundary at the junction of Highway 198 near King City north through Paicines, Tres Pinos, and Hollister to the northern county boundary near Gilroy, where it connects to U.S. 101.

Highway 129 extends from Santa Cruz County into the northwestern portion of San Benito County connecting to U.S. 101 approximately 2.6 miles from the Santa Cruz-San Benito County Line. Highway 129 is a two-lane rural road providing access to Santa Cruz and Monterey County Beaches.

Highway 146 in San Benito County is a two-lane minor arterial used primarily to provide access from Highway 25 to the Pinnacles National Park.

Highway 156 traverses northern San Benito County from U.S. 101 west of San Juan Bautista through San Juan Bautista and Hollister to the San Benito/Santa Clara County Line where it connects with Highway 152.

U.S. 101 passes through the northwestern portion of San Benito County for 7.4 miles and serves primarily inter-regional traffic.

San Benito County Express is the primary transit provider in the county with services in Hollister and countywide via intercounty connections. The County Express system currently provides an On Demand and Tripper services in the City of Hollister, complementary ADA paratransit service, and a public Dial-A-Ride program. There is currently no passenger rail service in San Benito County. The County Express provides a connection to commuter and regional rail service in Gilroy, in south Santa Clara County. Freight rail service to Hollister and northern San Benito County is provided by the Union Pacific Hollister Branch Line.

Bicycle facilities in the county are generally concentrated in and around Hollister. Within San Juan Bautista, a short section of San Juan Highway in the northern part of town has designated bike lanes. The Juan Bautista de Anza National Historic Trail traverses San Juan Bautista and the western part of the county. The cities of Hollister and San Juan Bautista generally have continuous sidewalks on most streets in their central and core areas and in newer neighborhoods. Pedestrian sidewalks in unincorporated areas of the county are generally provided in discontinuous segments or they are non-existent.

San Benito County has one public airport (Hollister Municipal Airport), one private airport (Frazier Lake Airpark), and several landing strips. Regional airport services are provided by San Jose International Airport and Monterey Peninsula Airport (San Benito County 2010).

San Benito County occupies over 890,000 acres or 1,391 square miles, of which approximately 882,675 acres or 99.5 percent is unincorporated (San Benito County 2015). Agriculture, which includes grazing, is the predominant use, totaling approximately 734,826 acres or 83.2 percent of the unincorporated County. The incorporated cities of Hollister and San Juan Bautista account for roughly 4,044 acres, or approximately 0.5 percent of the land within the County (San Benito County 2015). There are also several historic unincorporated

communities in the County, including Aromas, Paicines, Panoche, Ridgemark, Tres Pinos, and New Idria.

3.3.3 Santa Cruz County

There are six state highways in Santa Cruz County. Highway 1 runs north/south through the entire county. Highway 17 traverses the Santa Cruz Mountains connecting the county with the San Jose/San Francisco Bay Area. Highway 9 is a mountainous road connecting Santa Cruz to towns in the San Lorenzo Valley, as well as providing another route over the Santa Cruz Mountains to Los Gatos and Saratoga in Santa Clara County. Highway 236 connects Boulder Creek to Big Basin Redwoods State Park and Highway 152 and Highway 129 connect Watsonville in south Santa Cruz County. There are 1,137 total miles of roadway in the county. Arterial roads comprise approximately 15 percent of the roadway miles.

The Santa Cruz Metropolitan Transit District (or METRO) provides essential bus transit services for all residents, including students, Highway 17 commuters, and transit dependent and choice riders. The county's network of local and express bus routes includes transit centers in Felton, Scotts Valley, Santa Cruz, Capitola, and Watsonville. METRO buses serve 479 miles of road throughout the county and cover most arterial and collector routes. Transit to Monterey County is provided at the Watsonville Transit Center via connections with MST. Greyhound provides service from Santa Cruz to surrounding regions.

Freight rail service, once operated by Southern Pacific Railroad, then by Union Pacific and now by Saint Paul & Pacific Railroad (SPPR), has been a historically important form of transportation within Santa Cruz County. There are currently three rail lines in or adjacent to Santa Cruz County. The Santa Cruz Branch rail line extends from Watsonville Junction in Pajaro north to Davenport and passes through much of the county's urban area. The Felton Branch rail line is owned and operated by the private Santa Cruz Big Trees & Pacific Railway Company and primarily provides summertime and holiday excursions between Felton and the Beach Boardwalk in Santa Cruz. The line is also occasionally used for freight. The Coast Rail Route is the Union Pacific main coastal line extending from San Jose to San Diego. A stop for the proposed Amtrak Coast Daylight service is planned at the Pajaro Station located at the Watsonville Junction.

Santa Cruz County has at least 215 miles of bikeways, with approximately 190 of them (bi-directional) bike lanes and approximately 25 of those are separated paths. Sidewalks and pedestrian infrastructure are located throughout the urbanized areas of the county and considered in all new project designs.

The Watsonville Municipal Airport, developed in 1942, is the only public use airport in Santa Cruz County. There are also three private airstrips within the county, located in Bonny Doon, at the Monterey Bay Academy and Las Trancas/Big Creek. The closest scheduled air service is available at Monterey Airport and Norman Y. Mineta San Jose International Airport (Santa Cruz County 1994).

Santa Cruz County is 441 square miles in size and is comprised of four incorporated cities and several unincorporated towns. The largest is the City of Santa Cruz, with a population of

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59,946 people. The remaining three incorporated cities within the County are Watsonville which has a population of 51,199 people, Scotts Valley with a population of 11,580 people, and Capitola has a population of 9,918 people (Santa Cruz County 2021). Unincorporated areas include Aptos, Ben Lomond, Bonny Doon, Boulder Creek, Brookdale, Corralitos, Davenport, Felton, Freedom, La Selva Beach, Rio Del Mar, Soquel and Zayante. The State of California owns and maintains 42,334 acres of parks in the coastal and mountainous areas of the County. The County maintains an additional 1,593 acres of parks, not including the numerous parks also found within the cities (Santa Cruz County 2021).

3.4 Plan Consistency

State CEQA Guidelines Section 15125(d) requires an EIR to discuss any inconsistencies between the proposed project and applicable general plans, specific plans, and regional plans. This analysis is presented in Section 5, *MTP Consistency with Other Plans Analysis*, as well as in several topical analyses in Section 4, in particular Section 4.11, *Land Use*. In addition, consistency of the proposed project with applicable regional plans prepared for specific resources is discussed in other Chapter 4 subsections, which analyze the impacts on specific resources.

4 Environmental Impact Analysis

This section discusses the possible environmental effects of the 2045 AMBAG MTP/SCS for the specific issue areas that were identified through the scoping process as having the potential to experience significant effects. A “significant effect” as defined by the *State CEQA Guidelines* Section 15382:

means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

The assessment of each issue area begins with a discussion of the environmental and regulatory setting related to the issue, which is followed by the impact analysis. In the impact analysis, the first subsection identifies the methodologies used and the “significance thresholds,” which are those criteria identified by AMBAG, universally recognized, or developed specifically for this analysis to determine whether effects are significant. The next subsection describes each impact of the proposed project, mitigation measures for significant impacts, and the level of significance after mitigation. Each effect under consideration for an issue area is separately listed in bold text with the discussion of the effect and its significance. Each bolded impact statement also contains a statement of the significance determination for the environmental impact as follows:

- **Significant and Unavoidable.** An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures.
- **Less than Significant with Mitigation Incorporated.** An impact that is significant, but can be reduced to below the threshold level given feasible mitigation measures.
- **Less than Significant.** An impact that may be adverse but does not exceed the threshold levels and does not require mitigation measures.
- **No Impact.** The proposed project would have no effect on environmental conditions or would reduce existing environmental problems or hazards.

Following each environmental impact discussion is a list of mitigation measures (if required) and the residual effects or level of significance remaining after implementation of the measure(s). The impact analysis concludes with a discussion of cumulative effects, which evaluates the impacts associated with the proposed project in conjunction with other in the area listed in Section 3.0, *Environmental Setting*.

Mitigation Approach, EIR Baseline, Approach for Impact Analyses

Mitigation Approach

This EIR includes proposed mitigation measures to reduce impacts and identifies agencies for implementation of those mitigation measures. AMBAG, TAMC, SBtCOG, and SCCRTC have lead or responsible agency status; and therefore, authority to enforce mitigation measures for projects for which they have discretionary authority. However, AMBAG, TAMC, SBtCOG, and SCCRTC do not have authority to require recommended mitigation measures be implemented by other implementing agencies (e.g., Caltrans, counties, cities, transit agencies) that are responsible agencies for this EIR, but will be lead agencies for future transportation and land use development projects. It is the responsibility of the lead agency implementing specific 2045 MTP/SCS projects to conduct environmental review consistent with CEQA and where applicable, incorporate mitigation measures provided herein and developed specifically for the project. Project specific environmental documents may adjust the mitigation measures identified in this EIR as necessary to respond to site specific conditions.

EIR Baseline

Under CEQA, the impacts of a proposed project must be evaluated by comparing expected environmental conditions after project implementation to conditions at a point in time referred to as the baseline. *State CEQA Guidelines* Section 15125 states that an EIR should describe physical environmental conditions of the project as they exist at the time the Notice of Preparation (NOP) is published, or if no NOP is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.

As the *State CEQA Guidelines* Section 15125 states, ordinarily the appropriate baseline will be the actual environmental conditions existing at the time of CEQA analysis, typically when NOP is published. However, the CEQA Guidelines also contemplate times when a deviation from the use of the NOP date to establish the baseline is appropriate to present an accurate description of the expected environmental impacts of a proposed project.

This EIR evaluates impacts against existing conditions which are generally conditions existing at the time of the release of the NOP in January 2020. It was determined that a comparison to current, existing baseline conditions would provide the most relevant information for the public, responsible agencies and AMBAG decisionmakers. However, the release date of the NOP in January 2020 was just at the beginning of an unplanned global pandemic caused by the COVID-19 coronavirus. Beginning in March 2020, the AMBAG region was in varying stages of compliance with shelter-in-place orders directed by various county health officers. These orders modified commercial and office business operations, employee commutes, and travel behavior, resulting in secondary effects related to vehicle miles traveled (VMT), air quality, and energy use.

Because the pandemic orders began in early March 2020, there is insufficient transportation data to accurately establish measured or observed conditions for VMT and other transportation metrics, such as transit use, for baseline year 2020. Also, most pandemic orders, including shelter in place orders, have been lifted. Therefore, AMBAG's Regional Transportation Demand Model (RTDM) was utilized to model 2020 baseline conditions for these transportation metrics, as the model reflects more typical transportation patterns in the AMBAG region that would otherwise exist had the pandemic never occurred. For physical conditions that were not as altered by the pandemic and shelter-in-place orders, such as aesthetics, biological resources, and hydrology and water quality, the conditions for the analysis are generally as they existed in January 2020 and do not require modeling.

For some issue areas, this EIR also includes consideration of project effects against a forecast no project condition in addition to the current, existing, or modeled 2020 baseline conditions, controlling for impacts caused by population growth and other factors that would occur whether or not the 2045 MTP/SCS or the RTPs prepared by the Monterey, San Benito, and Santa Cruz RTPAs are adopted. This no project analysis is provided for informational purposes only. However, all impact determinations are based on a comparison to 2020 baseline conditions. Whenever this EIR refers to the 2020 baseline year, it refers to the modeled 2020 conditions or the 2020 conditions that generally existed unaltered by the COVID-19 pandemic.

Interim Timeframes

2045 is the horizon year of the proposed 2045 MTP/SCS. While the 2045 MTP/SCS would be implemented gradually over the planning period, this EIR does not analyze interim time frames because the four-year update cycle of the MTP/SCS and the RTPs prepared by the Monterey, San Benito, and Santa Cruz RTPAs already requires short-term adjustments to the Plan. The one exception to this approach is in Section 4.8, *Greenhouse Gas Emissions/Climate Change*, which examines impacts for 2020, 2030, and 2035, as well as a comparative baseline of both 1990 and 2005, to satisfy statutory requirements and address state targets related to GHG emissions.

Approach for Direct Impact Analysis

The programmatic nature of the 2045 MTP/SCS necessitates a general approach to the evaluation of existing conditions and impacts associated with the proposed project. As a programmatic document, this EIR presents a regionwide assessment of the impacts of the 2045 MTP/SCS. These impacts are examined for both transportation network improvements and the regional growth and land use changes forecasted. Because the EIR is a long-term document intended to guide actions over 25 years into the future, program-level and qualitative evaluation is involved. Regional quantitative analyses are provided where applicable with available information. During future stages in planning and implementation of specific elements of the 2045 MTP/SCS, including land development resulting from regional growth and transportation improvements identified in the 2045 MTP/SCS, project specific CEQA documents will be prepared by the appropriate project implementation agency.

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4.1 Aesthetics and Visual Resources

This section evaluates the aesthetics and visual resource impacts of the proposed 2045 MTP/SCS.

4.1.1 Setting

a. Visual Character of the Region

AMBAG's planning area is predominantly rural, with urban development clustered along the Monterey Bay coastline and in agricultural inland valleys. The specific visual characteristics of Monterey, San Benito and Santa Cruz counties are discussed below.

Monterey County

Monterey County is characterized by a scenic ocean coastline along its western and northern borders, with rugged coastal mountains inland along its eastern boundary. The most substantial visual resources are located along the County's approximately 100-mile-long coastline. Monterey County includes dramatic shoreline scenery along the Big Sur coast, which is bounded on the east by the very steep Santa Lucia Mountain range. Other scenic resources within Monterey County include the Fort Ord National Monument in western Monterey County and Pinnacles National Park located east of Soledad. Elevations in Monterey County range from sea level at the coastline to nearly 5,700 feet above sea level at Junipero Serra Peak.

The Conservation and Open Space Element of the Monterey County General Plan also identifies the Salinas and Carmel Valleys and Elkhorn Slough as prominent features (Monterey 2010). The 130-mile-long Salinas Valley stretches the length of the County and offers the greatest visual expanse within inland Monterey County which includes primarily agricultural areas. Development in the valleys originated with the agricultural industry and is located along major travel corridors such as U.S. 101. Cities and towns within the valleys include Castroville, Salinas (the largest city in the County), Gonzales, Soledad, Greenfield, King City and Carmel Valley. Foreground, middle ground and background views of agriculture fields/pastures and the surrounding ranges and hills comprise the viewshed. The majority of urban development is concentrated in northern Monterey County, in the lower Salinas Valley and around the Monterey Bay.

San Benito County

In contrast to the other two counties in the Monterey Bay region, San Benito County has no coastline. It is characterized by the Diablo and Gabilan Mountain Ranges and their associated inland agricultural valleys. Elevations range from 80 feet above sea level near Aromas in the northwest portion of the County to more than 5,200 feet above sea level at the peak of San Benito Mountain in the southeast. Prominent elements of San Benito County's scenic landscape include views of mountains, undeveloped rangelands, large agricultural fields and croplands, natural ridgelines along the Diablo and Gabilan Ranges and annual grasslands (San

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Benito 2015). Agricultural land and rangeland account for approximately 75 percent of all land in San Benito County and commonly form the foreground of scenic views. Urban development is concentrated in the City of Hollister, which is characterized by a commercial downtown with low density residential areas to the west, south and east and industrial areas to the north (San Benito 2015).

Santa Cruz County

Santa Cruz County is characterized by scenic ocean coastlines along its western and southern borders, with rugged coastal mountains inland along its northern and eastern boundary, with visual resources generally similar to those of Monterey County described above. One of the distinct visual features of Santa Cruz County is the extensive forest cover of the Santa Cruz Mountains in the north and northeast, including stands of coast redwoods. The Santa Cruz Mountains are the southern edge of this species' range in coastal California (Santa Cruz 1994). A large portion of the County's population is located in the mid-County coastal terraces, while the alluvial south County is mainly in agricultural use. The aesthetic character of urban areas in the coastal terraces between the Santa Cruz and Aptos is influenced by coastal vistas and stream valleys running southward from the Santa Cruz Mountains. Elevations in Santa Cruz County range from sea level to more than 3,200 feet above sea level at Mt. Bielawski, which is located near the Santa Cruz-Santa Clara county line.

b. Primary View Corridors

Monterey County

The following roadway segments within Monterey County have been officially designated as "State Scenic Highways" under the California Scenic Highway System (Caltrans 2019):

- State Route (SR) 1 from San Luis Obispo County to Highway 68
- Highway 25 from Highway 198 to the San Benito County line
- Highway 68 from Highway 1 in Monterey to the Salinas River
- Highway 156 from one mile east of Castroville to U.S. 101 near Prunedale

Portions of other highways traversing Monterey County are eligible for "Scenic Highway" designation (Caltrans 2019). The eligible highways are:

- Highway 1 from Highway 68 to the San Mateo County line
- Highway 68 from the Salinas River to U.S. 101 near Salinas
- U.S. 101 from Highway 156 northeasterly to the San Benito County line
- Highway 198 from U.S. 101 near San Lucas to the Fresno County line

In addition to the designated and eligible State Scenic Highways listed above, the Monterey County General Plan includes existing and proposed County Scenic Routes (Monterey County 2010). These roadways are shown in Figures 13 through 16 of the Monterey County General Plan. The following roadways are designated as County Scenic Routes:

- Old Stage Road
- San Benancio Road
- Corral de Tierra Road
- Laureles Grade Road
- Robinson Canyon Road

The following roadways in Monterey County are proposed for designation as County Scenic Routes:

- Carmel Valley Road
- Reservation Road
- River Road
- Corral de Cielo Road
- Underwood Road
- Crazy Horse Canyon Road
- San Juan Grade Road
- San Miguel Canyon Road

San Benito County

The following roadways in San Benito County have been identified as eligible for inclusion in the California Scenic Highway System (Caltrans 2019):

- Highway 25 from the Monterey County line to Highway 156
- Highway 156 from the Monterey County line to the Santa Clara County line
- Highway 198 from the Monterey County line to the Fresno County line
- Highway 146 from Pinnacles National Monument to State Route 25
- U.S. 101 from the Monterey County line to Highway 156

The Natural and Cultural Resources Element of the San Benito County 2035 General Plan (San Benito 2015) also designates the following roadways as Scenic Highways and describes the widths of the associated Scenic Corridors:

- U.S. 101 (entire length within San Benito County - the Scenic Corridor width includes all land 400 feet on either side of the centerline of the road)
- Highway 129 from its intersection with U.S. 101 to the San Benito County boundary (the Scenic Corridor width includes all land within 340 feet on either side of the centerline of the road)
- Highway 146 between Highway 25 and the Monterey County line (the Scenic Corridor width includes all land 340 feet on either side of the centerline of the road)

Santa Cruz County

Although no State Scenic Highways have been designated in Santa Cruz County, the following roadways (Caltrans 2019) are eligible for designation as such:

- Highway 1 from the Monterey to San Mateo County line
- Highway 9 from Highway 1 near Santa Cruz to the Santa Clara County line
- Highway 17 from Highway 1 near Santa Cruz to the Santa Clara County line
- Highway 35 from Highway 17 to the Santa Clara County line
- Highway 152 from Highway 1 to the Santa Clara County line at Hecker Pass
- Highway 236 from Highway 9 near Boulder Creek to Highway 9 northeast of Big Basin Redwoods State Park

In addition to the above scenic routes eligible for State Scenic Highway designation, the Santa Cruz County General Plan and Local Coastal Program (Santa Cruz 1994) identifies the following routes as “[valued] for their vistas”:

- Highway 1 from San Mateo to Monterey County lines
- Highway 9 from Highway 1 to Santa Clara County line
- Highway 17 from Highway 1 to Santa Clara County line
- Highway 35 from Highway 17 to San Mateo County line
- Highway 129 from Highway 1 to San Benito County line
- Highway 152 from Highway 1 to Santa Clara County line
- Highway 236 from Highway 9 in Boulder Creek to Highway 9 at Waterman Gap

4.1.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

National Scenic Byway Program

The National Scenic Byway Program was established to preserve and protect the nation’s scenic and less-traveled roads in an effort to promote tourism. For designation as a National Scenic Byway, a road must have one of the following six intrinsic qualities: scenic, natural, historic, cultural, archeological, or recreational. Within California, there are eight federally-designated byways (FHWA 2021).

U.S. Department of Transportation Act, Section 4(f)

Section 4(f) of the Department of Transportation Act (DOT Act) of 1966 (49 U.S.C. § 303) was enacted to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges and historic sites. Section 4(f) requires a comprehensive evaluation of all environmental impacts resulting from federal-aid transportation projects administered by the Federal Highway Administration (FHWA), Federal Transit Administration

(FTA) and Federal Aviation Administration (FAA) that involve the use, or interference with use, of the following types of land:

- Public park lands;
- Recreation areas;
- Wildlife and waterfowl refuges; and
- Publicly- or privately-owned historic properties of federal, state, or local significance.

This evaluation, called the Section 4(f) statement, must be sufficiently detailed to permit the U.S. Secretary of Transportation to determine that:

- There is no feasible and prudent alternative to the use of such land;
- The program includes all possible planning to minimize harm to any park, recreation area, wildlife and waterfowl refuge, or historic site that would result from the use of such lands; or
- If there is a feasible and prudent alternative, a proposed project using Section 4(f) lands cannot be approved the by Secretary; or if there is no feasible and prudent alternative, the proposed project must include all possible planning to minimize harm to the affected lands.

Detailed inventories of the locations and likely impacts on resources that fall into the Section 4(f) category are required in project level environmental assessments.

In August 2005, Section 4(f) was amended to simplify the process for approval or projects that have only minimal impacts on lands affected by Section 4(f). Under the new provisions, the U.S. Secretary of Transportation may find such a minimal impact if consultation with the State Historic Preservation Officer (SHPO) results in a determination that a transportation project will have no adverse effect on the historic site or that there will be no historic properties affected by the proposed action. In this instance, analysis of avoidance alternatives is not required and the Section 4(f) evaluation process is complete.

b. State Laws, Regulations, and Policies

California Scenic Highway Program

Recognizing the value of scenic areas and view from roads in such areas, the State Legislature established the California Scenic Highway Program in 1963 (Streets and Highways Code Sections 260 et seq). This legislation preserves and protects scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to highways. The goal of the Scenic Highway Program is to preserve and enhance the natural beauty of California. Under this program, a number of State Routes have been designated as eligible for inclusion as scenic routes. Once the local jurisdiction through which the roadway passes have established a corridor protection program and the Departmental Transportation Advisory Committee recommends designation of the roadway, the State may officially designate roadways as scenic routes. Interstate highways, State Routes and county roads may be designated as scenic under the program. The Master Plan of State Highways Eligible for

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Official Scenic Highway Designation maps designated highway segments, as well as those that are eligible for designation. Changes to the map require an act of the State Legislature.

As noted, a corridor protection program must be adopted by the local governments with land use jurisdiction over the area through which the roadway passes as the first step in moving a road from “eligible” to “designated” status. Each designated corridor is monitored by the State and designation may be revoked if a local government fails to enforce the provisions of the corridor protection program. While there are no restrictions on scenic highway projects, local agencies and the California Department of Transportation (Caltrans) must together to coordinate transportation and development projects and ensure the protection of the corridor’s scenic value to the greatest extent possible, including undergrounding all visible electric distribution and communication utilities within 1,000 feet of a Scenic Highway. In some cases, local governments have their own land use and site planning regulations in place to protect scenic values along a designated corridor. At a minimum, each corridor protection program must include:

- Regulation of land use and density of development,
- Detailed land and site planning,
- Control of outdoor advertising devices,
- Control of earthmoving and landscaping and
- Regulation of the design and appearance of structures and equipment.

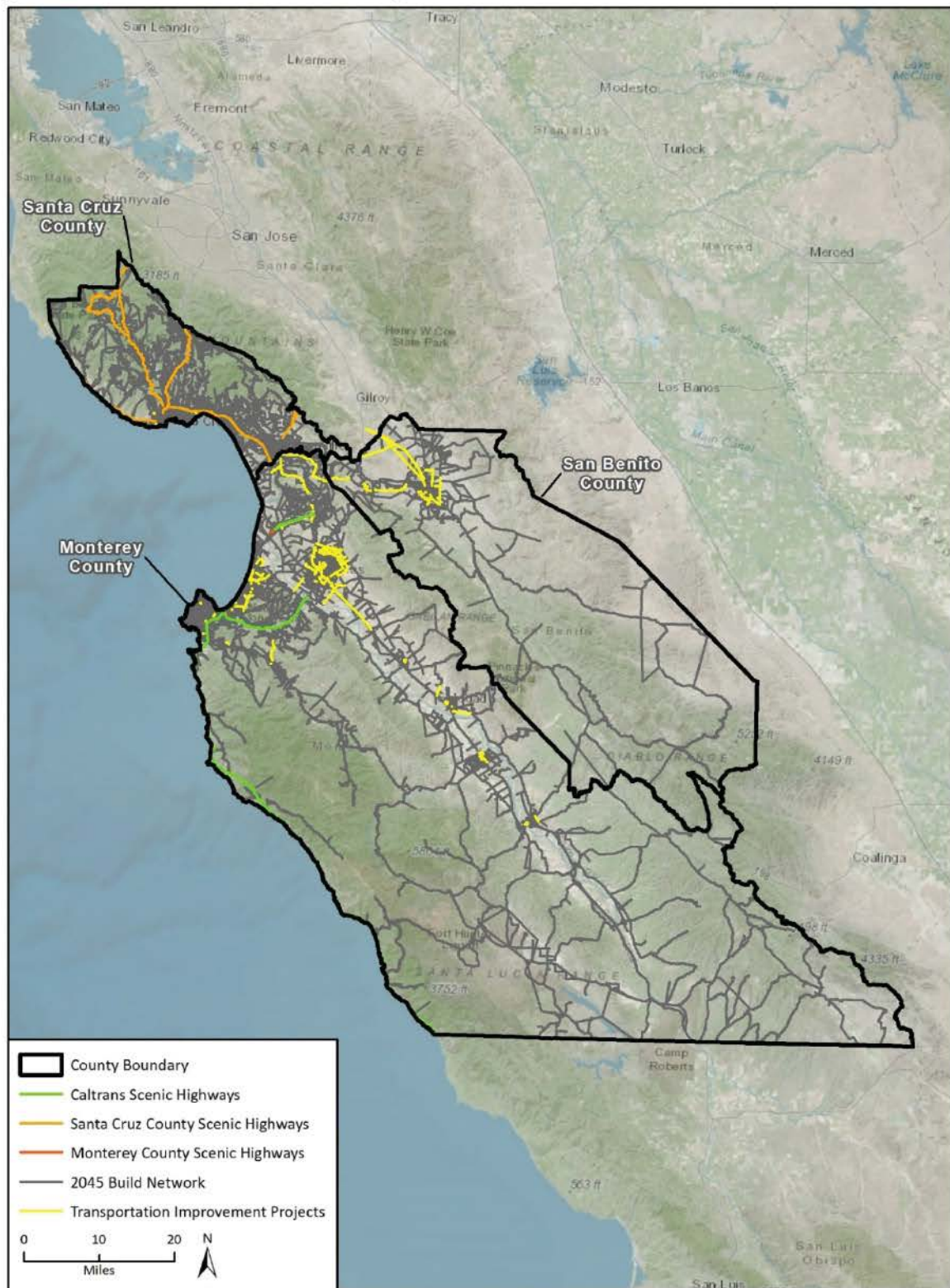
The Master Plan of State Highways Eligible for Official Scenic Highway Designation requires that proposed realignments and route improvements be evaluated for their impact on the scenic qualities of the corridor. The Plan Area includes numerous designated or eligible State Scenic Highways, which can be seen below in Figure 4.1-1.

California Coastal Act

The California Coastal Act of 1976 (Public Resources Code [PRC] § 30000 et seq.) establishes policies guiding development and conservation along the California coast. Section 30001 of the Coastal Act finds:

1. That the California coastal zone is a distinct and valuable natural resource of vital and enduring interest to all the people and exists as a delicately balanced ecosystem.
2. That the permanent protection of the state’s natural and scenic resources is a paramount concern to present and future residents of the state and nation.
3. That to promote the public safety, health and welfare and to protect public and private property, wildlife, marine fisheries and other ocean resources and the natural environment, it is necessary to protect the ecological balance of the coastal zone and prevent its deterioration and destruction.

Figure 4.1-1 AMBAG Plan Area Designated Scenic Routes¹



Imagery provided by Microsoft Bing and its licensors © 2021.
Additional data provided by AMBAG 2021, Caltrans 2014, Monterey County 2014, and Santa Cruz County 2021.

Fig. 4.1-1 AMBAG Plan Area Designated Scenic Routes

¹ 2045 Build Network is the entire transportation network in 2045, including existing facilities; Transportation Improvement Projects are the 2045 MTP/SCS and County level RTP transportation projects.

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4. That existing developed uses and future developments that are carefully planned and developed consistent with the policies of this division, are essential to the economic and social well-being of the people of this state and especially to working persons employed within the coastal zone.
5. According to the California Coastal Act Policy 30251, the scenic and visual qualities of coastal areas shall be considered and protected as resources of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas and, where feasible, to restore and enhance visual quality in development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

California Building Energy Efficiency Standards

California Code of Regulations Title 24, Part 6 contains California's Energy Efficiency Standards for Residential and Non-residential Buildings. California Building Energy Efficiency Standards were established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and nonresidential buildings. The 2019 Energy Code contains standards to reduce energy consumption for outdoor lighting application in residential and non-residential developments. Mandatory measures for outdoor lighting and glare are specified in §110.9, §130.0, and §130.2 of the 2019 Energy Code.

Caltrans Adopt-a-Highway Program

To improve and maintain the visual quality of California highways, Caltrans administers the Adopt-a-Highway program, which was established in 1989. The program provides an avenue for individuals, organizations, or businesses to help maintain sections of roadside within California's State Highway System. Groups have the option to participate as volunteers or to hire a maintenance service provider to perform the work on their behalf. Adoptions usually span a two-mile stretch of roadside, and permits are issued for five-year periods. Since 1989, more than 120,000 California residents have kept 15,000 shoulder miles of state roadways clean by engaging in litter removal, tree and flower planting, graffiti removal and vegetation removal.

c. Local Laws, Regulations, and Policies

City and County General Plans

The general plans and zoning ordinances of the cities within the Monterey Bay area regulate design and the built environment within those communities, while the general plans for each county perform the same function within unincorporated areas. In all cases, the general plans and zoning typically prescribe visual resource policies and, in some cases, require design

review of projects. In general, little direction is provided regarding the design of roadways, which are typically subject to adopted Caltrans or local engineering standards related to safety and capacity, rather than aesthetics.

Local jurisdictions in the Monterey Bay area have policies for the protection of scenic corridors. In the Monterey County General Plan (Monterey 2010), Policy C-5.6 requires “special scenic treatment and design within the rights-of-way of officially designated State Scenic Highways and/or County Road.” The San Benito County 2035 General Plan (San Benito 2015) Policy NCR-8.1 in Natural and Cultural Resources Element states that “[t]he County shall endeavor to protect the visual characteristics of certain transportation corridors that are officially designated as having unique or outstanding scenic qualities” . Additionally, Policy 5.10.2 of the Conservation and Open Space Element in the Santa Cruz County General Plan and Local Coastal Program (Santa Cruz 1994) states that the County shall “[r]equire projects to be evaluated against the context of their unique environment and regulate structure height, setbacks and design to protect these resources consistent with the objectives and policies of [the General Plan].” Cities within the AMBAG region have similar policies pertaining to scenic corridors, visual character and lighting.

Furthermore, several local jurisdictions have “dark sky” ordinances or other exterior lighting standards intended to reduce light pollution and glare, and to protect the nighttime visual environment. For example, Monterey County has specific design guidelines for exterior lighting to require that exterior lighting be unobtrusive, reduce off-site glare and only light an intended area. The design guidelines establish criteria for the location and direction of fixtures, number of fixtures and design of fixtures (Monterey 2016). Chapter 19.31 of the San Benito County Code (Development Lighting) establishes three lighting zones, with Zone I imposing the strictest regulations and Zone III imposing the least restrictive, and outlines specific lighting restrictions within each zone (San Benito 2017). In Santa Cruz County, Section 13.10.363 of the County Code requires that all exterior lighting in the Public and Community Facilities District include cut-offs that prevent light from extending beyond the boundaries of the property, while Section 13.10.581 outlines restrictions for illuminated signs (Santa Cruz 2017). Many cities also have similar types of ordinances. For example, the City of Seaside’s Municipal Code contains Chapter 17.30.070, Outdoor Lighting, which limits the maximum height, energy efficiency, position and maximum illumination, among other parameters, to reduce lighting and glare impacts.

4.1.3 Impact Analysis

a. Methodology and Significance Thresholds

Environmental assessment of a proposed project’s impacts to the aesthetic and visual resources of a site begins with identification of the existing visual resources on and off that site, including the site’s physical attributes, its relative visibility and its relative uniqueness. The assessment of aesthetic impacts involves a qualitative analysis that is inherently subjective in nature. Different viewers react to viewsheds and aesthetic conditions differently. This evaluation measures the existing visual resource against the proposed action, analyzing the nature of the change.

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It is important to distinguish between public and private views. Private views are those views seen from privately-owned land, including views from private residences and are typically enjoyed by individuals. Public views are experienced by the collective public. These include views of significant landscape features such as the Monterey Bay, as seen from public viewing space, not privately-owned properties. California Environmental Quality Act (CEQA) (PRC §21000 et seq.) case law has established that only public views, not private views, need be analyzed under CEQA. See *Association for Protection etc. Values v. City of Ukiah* (1991) 2 Cal. App. 4th 720 and *Topanga Beach Renters Assn. v. Department of General Services* (1976) 58 Cal. App. 3d 188. Therefore, for this analysis, only public views will be considered when analyzing the visual impacts of implementing the 2045 MTP/SCS.

Appendix G of the *State CEQA Guidelines* identifies the following criteria for determining whether a project's impacts would have a significant impact related to aesthetics/visual resources:

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

b. Project Impacts and Mitigation Measures

The following section describes aesthetic and visual resource impacts associated with the transportation improvements and future land use scenario in the 2045 MTP/SCS. Table 4.1-1 summarizes the specific transportation projects that would result in aesthetics impacts. Due to the programmatic nature of the 2045 MTP/SCS, a precise, project level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2045 MTP/SCS would result in the impacts as described in the following section.

Threshold 1: Have a substantial adverse effect on a scenic vista

Threshold 2: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway

Impact AES-1 PROPOSED TRANSPORTATION IMPROVEMENT PROJECTS AND LAND USE PROJECTS ENVISIONED BY THE 2045 MTP/SCS WOULD HAVE A SUBSTANTIAL ADVERSE EFFECT ON SCENIC VISTAS AND SUBSTANTIALLY DAMAGE SCENIC RESOURCES WITHIN A STATE SCENIC HIGHWAYS. THIS WOULD BE A SIGNIFICANT AND UNAVOIDABLE IMPACT.

As discussed previously, there are four officially designated state scenic highways and numerous County-designated scenic view corridors in the AMBAG region. Visual resource impacts from construction on or adjacent to these roadways would include: blockage of views by construction equipment and staging areas; disruption of views by temporary signage; and exposure of slopes and removal of vegetation. These effects would be temporary during the construction phase.

In the long-term, implementation of the 2045 MTP/SCS would generally result in modification of existing transportation facilities within existing highway, roadway, or railroad rights-of-way. Further, many of the proposed projects are at-grade with the surrounding environment. As such, most of the road and highway investments are not likely to result in massive obstructions or blockages of surrounding views nor modify or substantially alter existing scenic resources viewed from a scenic vista or state scenic highway.

Similarly, land use development envisioned by the 2045 MTP/SCS would be focused primarily in urban infill areas. Scenic vistas and designated scenic highways are generally located in undeveloped, rural areas, such that most future land use development envisioned in the 2045 MTP/SCS would be unlikely to block or substantially alter scenic vistas.

While most transportation and land use projects would not result in significant impacts to scenic vistas or scenic resources within a state scenic highway, some projects have the potential to result in substantial adverse effects. For example, widening projects would occur on Highway 25 (a designated scenic highway) between Sunset Drive and Fairview Road and on Highway 156 (an eligible scenic highway) at its intersection with U.S. 101. These projects would change existing visual conditions of the area within which they are proposed through modification or removal of existing vegetation or the introduction of structures that could block existing views from the roadway. Proposed overcrossings of Highway 1 in Santa Cruz County could also obstruct scenic views from this roadway. In addition, in some areas, higher density infill development would obstruct scenic views of mountains or the coastline from urban-area roadways.

Although some of the 2045 MTP/SCS projects would result in significant impacts to scenic vistas, it should be noted that the 2045 MTP/SCS includes several active transportation projects that would create new viewpoints from which the public would enjoy a scenic vista. Specifically, the Monterey Bay Sanctuary Scenic Trail Network in Santa Cruz and Monterey counties, the San Benito River Recreation Trail in San Benito County and the Fort Ord Regional Trail and Greenway (FORTAG) in Monterey County would all provide regional multi-use trails

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in rural and highly scenic areas, such as the Monterey Bay coastline, the rolling hills of the former Fort Ord and the San Benito River. These trails would introduce paving and some signage into scenic areas, but would not include structures or other features that would substantially detract from existing views. Rather, these trails would improve public access to scenic areas, thus creating new public viewpoints from which existing scenic vistas can be viewed.

Development near state-designated scenic highway corridors would be minimized to some extent through compliance with the Caltrans Corridor Protection Program, which requires that the local jurisdiction adopt ordinances, zoning and/or planning policies to preserve the scenic quality of the state-designated scenic highway corridor, or document such regulations that already exist in various portions of local codes. Many local jurisdictions also have their own general plan policies relating to the protection of scenic vistas. These policies would limit the amount or type of development in designated scenic corridors or require special design guidelines when developing in certain areas. However, because scenic vistas and scenic resources are protected unevenly among the various jurisdictions in the AMBAG region, the 2045 MTP/SCS would result in a substantial adverse effect on a scenic vista or substantially damage scenic resources within a state scenic highway.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the 2045 MTP/SCS program where applicable for transportation projects that would degrade scenic vistas or scenic resources within a state scenic highway, and where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

AES-1(a) Discouragement of Architectural Features that Block Scenic Views

Implementing agencies shall, or can and should, design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. Setbacks and acoustical design of adjacent structures shall be preferentially used as mitigation for potential noise impacts arising from increased traffic volumes associated with adjacent land development. The use of sound walls, or any other architectural features that could block views from the scenic highways or other view corridors, shall be discouraged to the extent possible. Where use of sound walls is found to be necessary, walls shall incorporate offsets, accents and landscaping to prevent monotony. In addition, sound walls shall be complementary in color and texture to surrounding natural features.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review.

AES-1(b) Tree Protection and Replacement

New roadways and extensions and widenings of existing roadways shall avoid the removal of existing mature trees to the extent possible. The implementing agency of a particular 2045 MTP/SCS project shall, or can and should, replace any trees lost at a minimum 2:1 basis and incorporate them into the landscaping design for the roadway when feasible. The implementing agency also shall ensure the continued vitality of replaced trees through periodic maintenance.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

Significance After Mitigation

Although identified mitigation would help reduce impacts related to state-designated scenic highway corridors and scenic resources, individual transportation infrastructure projects as well as land use development included in the 2045 MTP/SCS would still result in obstructions to panoramic views and views of important landscape features or landforms (mountains, oceans, rivers, bays, or important man-made structures) as seen from public viewing areas. Given the extent of planned land use development and the potential for site specific visual obstructions from future land use and transportation projects, impacts related to the obstruction of scenic vistas from public viewing areas and impacts to state-designated scenic highway corridors and scenic resources would be significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site or its surroundings; if the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality

Impact AES-2 PROPOSED TRANSPORTATION IMPROVEMENT PROJECTS AND LAND USE PROJECTS ENVISIONED BY THE 2045 MTP/SCS WOULD SUBSTANTIALLY DEGRADE EXISTING VISUAL CHARACTER IN THE AMBAG REGION. THIS WOULD BE A SIGNIFICANT AND UNAVOIDABLE IMPACT.

The proposed MTP/SCS includes improvements to existing facilities such as road widenings, intersection or interchange improvements, auxiliary and transition lanes, highway maintenance and other improvements. The 2045 MTP/SCS would include some new road and highway facilities such as new interchanges, new roadways and overcrossings and road extensions. Most road and highway projects would occur in areas where transportation infrastructure is already a dominant feature of the landscape. Such transportation projects would not likely degrade the existing visual character of the region because transportation infrastructure is already a dominant feature of the landscape in those areas. In less developed areas of the region, adding new transportation infrastructure would add an element of urban character to previously undeveloped lands. New and extended roadways would alter the character of agricultural areas near the cities of Salinas and Soledad, in particular, by converting farmland and introducing paved surfaces. Ancillary facilities constructed along new or existing roads (such as lighting, bus shelters and signs) would further contribute to the trend toward a more suburban visual character. Depending on the design and siting of transportation projects, this would be considered a degradation of the visual character or quality of an area. A complete listing of transportation projects with potential to alter the rural character of the AMBAG region is included Table 4.1-1.

The 2045 MTP/SCS emphasizes infill development and development near existing transportation corridors, which are generally located in urbanized areas of cities and unincorporated communities. Infill development can be favorable in terms of visual character, as it occurs in areas already designated for and receiving growth and precludes growth in undeveloped and/or agricultural and rural areas. However, when compared to existing conditions, the 2045 MTP/SCS land use scenario would intensify the built environment within existing urban areas through the implementation of infill and transit oriented development (TOD) projects, thereby resulting in an overall change in the character of existing urbanized areas to a denser development pattern. In addition, land use projects that do occur in rural or agricultural areas would introduce urban development to areas that were previously undeveloped. Depending on the design and siting of these projects, the resulting change would degrade the visual character or quality of their surroundings.

Some of the proposed transportation improvements would introduce visual features that would alter the existing rural or semi-rural character of the area in which they are proposed. Ancillary facilities constructed along new or existing roads (such as lighting, bus shelters, and signs) would further contribute to the trend toward a more suburban visual character. It should be noted that the majority of the projects included in 2045 MTP/SCS would occur in

developed areas or adjacent to urban environments. In addition, the land use scenario envisioned by the 2045 MTP/SCS is intended to encourage infill development and development near existing transportation corridors. This type of development would help to avoid impacts to the region's rural and agricultural character by concentrating development within existing urbanized areas when compared to a future scenario without 2045 MTP/SCS. However, not all projects and development included in 2045 MTP/SCS would be infill projects in urbanized areas, and some projects would inevitably be located in rural and other areas in Monterey, San Benito, and Santa Cruz counties. However, development facilitated under the 2045 MTP/SCS would be required to comply with applicable zoning standards or acquire an approved zoning amendment, both of which would be subject to separate environmental review.

Projects implemented under the 2045 MTP/SCS would be subject to existing regulations that would help to minimize impacts to visual character. For example, in visually sensitive areas, local land use agencies would apply development standards and guidelines to maintain compatibility with surrounding natural areas, including site coverage, building height and massing, building materials and color, landscaping and site grading. Nevertheless, even with compliance with these standards, the overall visual effect of planned roadway projects and envisioned land use projects would contribute to an incremental, but irreversible transformation in visual character from rural or semi-rural to more urban or suburban throughout the AMBAG region. Therefore, the impact on visual character resulting from implementation of the 2045 MTP/SCS would be significant.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measure developed for the 2045 MTP/SCS program where applicable for transportation projects that would substantially degrade visual character, and where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region can and should implement this measure, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

AES-2 Design Measures for Visual Compatibility

The implementing agency shall, or can and should, require measures that minimize contrasts in scale and massing between the project and surrounding natural forms and developments. Strategies to achieve this include:

- Siting or designing projects to minimize their intrusion into important viewsheds;
- Avoiding large cuts and fills when the visual environment (natural or urban) would be substantially disrupted;
- Ensuring that re-contouring provides a smooth and gradual transition between modified landforms and existing grade;

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- Developing transportation systems to be compatible with the surrounding environments (e.g., colors and materials of construction material; scale of improvements);
- Protecting or replacing trees in the project area;
- Designing and installing landscaping to add natural elements and visual interest to soften hard edges, as well as to restore natural features along corridors where possible after widening, interchange modifications, re-alignment, or construction of ancillary facilities. The implementing agency shall provide a performance security equal to the value of the landscaping/irrigation installation to ensure compliance with landscaping plans; and
- Designing new structures to be compatible in scale, mass, character and architecture with existing structures.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

Significance After Mitigation

Implementation of the above mitigation measure would reduce project -specific impacts to the extent feasible. Nevertheless, the incremental alteration of current rural or semi-rural character to a more suburban environment is considered a significant and unavoidable impact because mitigation measures may not be feasible for all projects. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 4: Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area

Impact AES-3 PROPOSED TRANSPORTATION IMPROVEMENT PROJECTS AND LAND USE PROJECTS ENVISIONED BY THE 2045 MTP/SCS WOULD CREATE NEW SOURCES OF SUBSTANTIAL LIGHT OR GLARE THAT WOULD ADVERSELY AFFECT DAY OR NIGHTTIME VIEWS IN THE AREA. THIS WOULD BE A SIGNIFICANT AND UNAVOIDABLE IMPACT.

New or intensified lighting from land use development envisioned in the 2045 MTP/SCS, which is focused on infill and TOD development, would be concentrated in areas with existing sources of light and glare. In these infill areas, such increases may not adversely affect nighttime views because existing sources of light, glare and shadow are already a dominant feature of the urban landscape. However, the intensity of light and glare in these urban areas would increase as a result of infill and TOD projects under the 2045 MTP/SCS, depending on site specific conditions and lighting design associated with new structures. Exterior lighting in some areas would be limited by compliance with existing lighting regulations, as discussed in the Regulatory Setting. For example, Chapter 19.31 of the San Benito County Code (Development Lighting) (San Benito County, 2017), Section 13.10.363 of the Santa Cruz County Code (Santa Cruz County, 2017) and Chapter 17.30.070 of the City of Seaside's

Municipal Code (City of Seaside 2017) contain limitations to the maximum height, energy efficiency, position and maximum illumination of new lighting fixtures, among other parameters, to reduce lighting and glare impacts. However, not all jurisdictions have adopted dark sky ordinances or similar restrictions, and because the restrictiveness of these regulations varies throughout the region, impacts from land use development on the potential for increased lighting affecting nighttime views would be significant.

Improvements to existing roadways and highways would not significantly increase the amount of light and glare in an area, as these improvements would take place on existing facilities that have existing sources of light and glare. Increases in light and glare from new reflective signage, streetlights, intersection control devices and other improvements would be relatively minor compared to existing conditions. However, the expansion of existing roadways or construction of new roadways would allow a greater volume of vehicles to travel through a given segment of roadway or highway throughout the day, or introduce vehicles into a new area, which would have the potential to introduce new or additional vehicle headlights as new light sources. In addition, some of the new transportation facilities included in the 2045 MTP/SCS would directly introduce light, including: the replacement of existing lighting at the Monterey Municipal Airport, construction of pedestrian lighting along various City streets and installation of lighting along bike paths in Monterey County. The introduction of light and glare would adversely affect day or nighttime views.

Overall, light and glare impacts from transportation improvements and infill and TOD development envisioned under the 2045 MTP/SCS would be significant because there would be new sources of substantial light or glare.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures for transportation projects that would result in light and glare impacts, and where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

AES-3(a) Roadway Lighting

Roadway lighting shall be minimized to the extent possible, consistent with safety and security objectives and shall not exceed the minimum height requirements of the local jurisdiction in which the project is proposed. This may be accomplished through the use of hoods, low intensity lighting and using as few lights as necessary to achieve the goals of the project.

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IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction, as applicable.

AES-3(b) Lighting Design Measures

As part of planning, design and engineering for projects, implementing agencies shall, or can and should, ensure that projects proposed near light-sensitive uses avoid substantial spillover lighting. Potential design measures include, but are not limited to, the following:

- Lighting shall consist of cutoff-type fixtures that cast low angle illumination to minimize incidental spillover of light into adjacent properties and undeveloped open space. Fixtures that project light upward or horizontally shall not be used.
- Lighting shall be directed away from habitat and open space areas adjacent to the project site.
- Light mountings shall be downcast and the height of the poles minimized to reduce potential for backscatter into the nighttime sky and incidental spillover of light onto adjacent private properties and undeveloped open space. Light poles will be 20 feet high or shorter. Luminary mountings shall have non-glare finishes.
- Exterior lighting features shall be directed downward and shielded in order to confine light to the boundaries of the subject project. Where more intense lighting is necessary for safety purposes, the design shall include landscaping to block light from sensitive land uses, such as residences.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction, as applicable.

AES-3(c) Glare Reduction Measures

Implementing agencies shall, or can and should, minimize and control glare from transportation and infill development projects near glare-sensitive uses through the adoption of project design features such as:

- Planting trees along transportation corridors to reduce glare from the sun;
- Creating tree wells in existing sidewalks;
- Adding trees in new curb extensions and traffic circles;
- Adding trees to public parks and greenways;
- Landscaping off-street parking areas, loading areas and service areas;
- Limiting the use of reflective materials, such as metal;

- Using non-reflective material, such as paint, vegetative screening, matte finish coatings and masonry;
- Screening parking areas by using vegetation or trees;
- Using low reflective glass; and
- Complying with applicable general plan policies or local controls related to glare
- Tree species planted to comply with this measure shall provide substantial shade cover when mature. Utilities shall be installed underground along these routes wherever feasible to allow trees to grow and provide shade without need for severe pruning.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction, as applicable.

Significance After Mitigation

In the absence of regulations specifically addressing light and glare impacts, the aforementioned mitigation measures would limit the use of reflective building materials and the potential spillage of light both upward and onto adjacent properties from exterior lighting fixtures. However, mitigation measures may not be feasible for all projects. Therefore, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

c. Specific MTP/SCS Projects That May Result in Impacts

Table 4.1-1 identifies examples of transportation projects with the potential to cause or contribute to direct or indirect impacts to aesthetics and visual resources such as those discussed above. These projects are representative and were selected based on their potential scope and likelihood to result in the impacts identified above. Additional specific analysis would be required as individual projects are implemented to determine the project specific magnitude of impact. Mitigation discussed above would apply to these specific projects.

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Table 4.1-1 2045 MTP/SCS Projects That May Result in Aesthetic/Visual Resource Impacts

AMBAG Project No.	Project	Location	Potential Impact
MON-GRN001-GR	Apple Avenue Bridge over U.S. 101	Monterey County	AES-1
MON-GRN005-GR	Thorne Road Bridge over U.S. 101	Monterey County	AES-1
MON-MAR157-MA	Reservation Road/Beach Road Improvements	Monterey County	AES-1
MON-MRY002-MY	Del Monte – Washington Improvements	Monterey County	AES-1
MON-MYC075-UM	River Road Operational Improvements	Monterey County	AES-1
MON-SCY009-SA	Bike Path Lighting	Monterey County	AES-2
MON-SNS078-SL	Natividad Creek Bike Path	Monterey County	AES-1
MON-SNS141-SL	East Laurel Drive Sidewalks	Monterey County	AES-2
MON-SOL043-SO	Pedestrian Lighting	Monterey County	AES-2
MON-CT011-CT	SR 68 – Commuter Improvements	Monterey County	AES-1
MON-CT022-CT	SR 156 – Corridor Widening Project	Monterey County	AES-1
MON-CT023-CT	State Route 156 and US 101 Interchange	Monterey County	AES-1
MON-CT030-SL	U.S. 101 – Salinas Corridor	Monterey County	AES-1
MON-CT031-CT	U.S. 101 – South County Frontage Roads	Monterey County	AES-1
MON-GRN008-GR	U.S. 101 – Walnut Avenue Interchange	Monterey County	AES-1
MON-MAR136-MA	SR 1 & Imjin Bridge	Monterey County	AES-1
MON-MAR137-MA	SR 1 & Imjin Bridge	Monterey County	AES-1
MON-SOL002-SO	U.S. 101 – North Interchange	Monterey County	AES-1
MON-SOL003-SO	U.S. 101 – South Interchange	Monterey County	AES-1
MON-SOL014-SO	SR 146 Bypass (Pinnacles Parkway)	Monterey County	AES-2
MON-SNS012-SL	Boronda Road Widening	Monterey County	AES-1
MON-SNS044-SL	Natividad Road Widening	Monterey County	AES-1
MON-SNS050-SL	Russell Road Widening	Monterey County	AES-1
MON-SNS059-SL	Williams Road Widening	Monterey County	AES-1
MON-SNS090-SL	Russell Road Extension	Monterey County	AES-1
MON-SNS092-SL	San Juan Natividad Collector	Monterey County	AES-1
MON-SNS093-SL	Independence Boulevard Extension	Monterey County	AES-1
MON-SNS094-SL	Hemingway Drive Extension	Monterey County	AES-1
MON-SNS095-SL	Constitution Boulevard Extension	Monterey County	AES-1
MON-SNS096-SL	Sanborn Road Extension	Monterey County	AES-1
MON-SNS097-SL	Williams Russel Collector	Monterey County	AES-1
MON-SNS-098-SL	Alisal Street Extension	Monterey County	AES-1
MON-SNS099-SL	Moffett Street Extension	Monterey County	AES-1
MON-SNS100-SL	Rossi Street Widening	Monterey County	AES-1

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AMBAG Project No.	Project	Location	Potential Impact
MON-SNS101-SL	Bernal Drive Extension	Monterey County	AES-1
MON-SNS102-SL	Constitution Boulevard Extension	Monterey County	AES-1
MON-SNS103-SL	Williams Road Widening	Monterey County	AES-1
MON-SNS104-SL	Alisal Street Widening	Monterey County	AES-1
MON-SNS108-SL	Laurel Drive Widening	Monterey County	AES-1
MON-SNS121-SL	McKinnon Street Extension	Monterey County	AES-1
MON-SNS282-SL	Abbott Street Widening	Monterey County	AES-1
SB-CT-A01	SR 156 Widening – San Juan Bautista to Union Road	San Benito County	AES-1
SB-CT-A17	Airline Highway Widening/SR 25 Widening: Sunset Drive to Fairview Road	San Benito County	AES-1
SB-CT-A44	Highway 25 Widening, Phase 1	San Benito County	AES-1
SB-CT-A45	Highway 25 Widening, Phase 2	San Benito County	AES-1
SB-CT-A02	Highway 156/Fairview Road Intersection Improvements	San Benito County	AES-1
SB-COH-A16	Memorial Drive Extension: Meridian Street to Santa Ana Road	San Benito County	AES-1
SB-COH-A18	Westside Boulevard Extension	San Benito County	AES-1
SB-COH-A55	Memorial Drive North Extension: Santa Ana Road to Flynn Road/Shelton Intersection	San Benito County	AES-1
SB-SBC-A04	Union Road Widening (East): San Benito Street to Highway 25	San Benito County	AES-1
SB-SBC-A05	Union Road Widening (West): San Benito Street to Highway 156	San Benito County	AES-1
SB-SBC-A09	Fairview Road Widening: McCloskey to SR 25	San Benito County	AES-1
SB-SBC-A14	San Benito Regional Park Access Road	San Benito County	AES-1
SB-SBC-A50	Hospital Road Bridge	San Benito County	AES-1
SB-SBC-A67	Shore Road Extension	San Benito County	AES-1
SB-SBC-A79	Enterprise Road Extension	San Benito County	AES-1
SB-SBC-A81	Meridian Street Extension: 185 feet east of Clearview Road to Fairview Road	San Benito County	AES-1
SB-SBC-A82	Flynn Road Extension	San Benito County	AES-1
SB-SJB-A07	Third Street Extension	San Benito County	AES-1
SB-SJB-A09	Lang Street	San Benito County	AES-1
SB-LTA-A53	Commuter Rail to Santa Clara County	San Benito County	AES-1
SC-SC-P105-SCR	Market Street Sidewalks and Bike Lanes	Santa Cruz County	AES-1
SC-WAT-P65-WAT	Upper Struve Slough Trail	Santa Cruz County	AES-1

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AMBAG Project No.	Project	Location	Potential Impact
SC-RTC-24e-RTC	3 - Hwy 1: Auxiliary Lanes from State Park Drive to Park Avenue and from Park Avenue to Bay Avenue/Porter Street	Santa Cruz County	AES-1
SC-RTC-24f-RTC	2 – Hwy 1: Auxiliary Lanes from 41st Avenue to Soquel Avenue and Chanticleer Bike/Ped Bridge	Santa Cruz County	AES-1
SC-RTC 24r-RTC	94 – Hwy 1: Northbound Auxiliary Lane from San Andreas Road/Larkin Valley Road to Freedom Boulevard	Santa Cruz County	AES-1
SC-SC-38-SCR	Hwy 1/San Lorenzo Bridge Replacement	Santa Cruz County	AES-1
SC-CO-P88-USC	Either Way Lane Bridge Replacement Project	Santa Cruz County	AES-1
SC-CO-P91-USC	Larkspur Bridge at San Lorenzo River	Santa Cruz County	AES-1
SC-CT-P48-CT	Hwy 17 Wildlife Habitat Connectivity	Santa Cruz County	AES-1

4.2 Agriculture and Forestry Resources

This section evaluates the agriculture and forestry resource impacts of the proposed 2045 MTP/SCS.

4.2.1 Setting

AMBAG's planning area includes expansive agricultural lands as well as forestry resources. The specific agricultural and forestry resources of Monterey, San Benito, and Santa Cruz counties are discussed below.

a. Definitions

Important Farmland

To characterize the environmental baseline for agricultural resources, Important Farmland Maps produced by the California Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (FMMP) were reviewed. Unless otherwise expressed, the future use of "Important Farmland" specifically includes the following definitions provided by the DOC (DOC 2019):

Prime Farmland

Land which has the best combination of physical and chemical characteristics for producing crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming standards.

Unique Farmland

Land of lesser quality soils used for the production of specific high economic value crops. It has the special combination of soil quality, location, growing season and moisture supply needed to produce sustained high quality or high yields of a specific crop when treated and managed according to current farming methods. It is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Examples of crops include oranges, olives, avocados, rice, grapes and cut flowers.

Farmland of Local Importance

Land of importance to the local agricultural economy as determined by each county's board of supervisors following recommendations by a local advisory committee.

As noted in Chapter 4 of the 2045 MTP/SCS, within the AMBAG region, the Farmland Mapping and Monitoring Program has identified 313,188 acres of land as "Important Agricultural Lands" combined with Williamson Act Lands. The AMBAG region has a total of 1,668,261

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acres of preserved agricultural land which represents 51 percent of the region's total land area.

Forestry Resources

The AMBAG region has forestry resources, primarily within northern Santa Cruz County and parts of Monterey and San Benito counties. Forestry resources include forestland, timberland, and timberland production zones. Definitions used for forest land and timberland are those found in the California Public Resources Code (PRC) Sections 12220(g) and 4789.2(g) and California Government Code (CGC) Section 51104(g). These codes define forestland, timberland, and timberland production zones as follows:

Forest Land

Forest land is land that can support, under natural conditions, 10 percent native tree cover of any species, including hardwoods, and that allows for the preservation or management of forest-related resources such as timber, aesthetic value, fish and wildlife, biodiversity, water quality, recreational facilities, and other public benefits (PRC Section 12220(g)).

Timberland

Timberland means 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 a commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species are determined by the board on a district basis (PRC Section 4526(g)).

Timberland Production Zones

Timberland production zones or "TPZ" means 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) (CGC Section 51104).

b. Existing Conditions

Farmland Trends

According to the DOC, irrigated farmland in California decreased by 11,165 net acres between 2014 and 2016. The highest quality farmland, known as Prime Farmland, decreased by 18,312 net acres, coupled with a Farmland of Statewide Importance decrease of 26,557 net acres. Partially offsetting these losses was the addition of 33,704 net acres of irrigated crops on lesser quality soils, mapped as Unique Farmland (DOC 2017). Although this farmland conversion was partially caused by urbanization, long-term land idling was the largest factor contributing to irrigated land decreases over this time period. Land idling, where irrigated land was converted to non-irrigated land due to a lack of irrigation over time or conversion

to dry farming, was responsible for 85 percent of this type of conversion. Irrigated land conversions due to idling are often associated with water resource limitations, market conditions, and salinity-related land idling. Land was removed from irrigated categories at a rate 17 percent lower than compared with the prior update (153,766 acres in 2014 and 128,105 acres in 2016) (DOC 2017).

As shown in Table 4.2-1, between 2014 and 2016, total Farmland in the counties of Monterey, Santa Cruz and San Benito saw a net decrease of 59 acres. Santa Cruz County experienced a decrease of 355 acres, while Monterey County and San Benito County experienced an increase of 98 and 198 acres, respectively (DOC 2019).

Table 4.2-1 Farmland Conversion by County 2014-2016

Land Use Category	Total Acreage Inventoried 2014	Total Acreage Inventoried 2016	Total Acreage Inventoried Acres Lost (-)	Total Acreage Inventoried Acres Gained (+)	Total Acreage Inventoried Total Acreage Changed	Total Acreage Inventoried Net Acreage Changed
Monterey County						
Farmland ¹	236,282	236,380	3,085	3,183	6,268	+98
San Benito County						
Farmland ¹	36,154	36,352	855	1,053	1,908	+198
Santa Cruz County						
Farmland ¹	19,647	19,292	582	227	809	-355
Total	292,083	282,024	4,522	4,463	8,985	-59

¹ Farmland represents all Prime Farmland, Farmland of Statewide Importance, and Unique Farmland within the given County.

Source: California Department of Conservation (DOC). 2019.

Agricultural Productivity

Monterey County

Agriculture consisting of crop farming and livestock grazing is the largest industry in Monterey County and contributes a substantial amount of money to Monterey County's economy. The County's gross agricultural production in 2019 totaled approximately \$4.4 billion, representing a 3.6 percent increase in value over the previous year (Monterey County 2020). The most productive and lucrative farmlands in the County are located in the North County, Greater Salinas and Central Salinas Valley Planning Areas (Monterey County 2010b). The main type of crop production in the County consists of cool season vegetables, strawberries, wine grapes and nursery crops.

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As noted previously, 236,380 acres in Monterey County are designated under the FMMP as containing Important Farmlands. According to the FMMP, between the years 2014 and 2016, approximately 2,319 acres of Important Farmland were converted to Grazing Land, four acres were converted to Urban and Built-Up Land and 493 acres were converted to Other Land in the county (DOC 2019). Figure 4.2-1 compares the locations of Farmland to the locations of transportation projects included in the 2045 MTP/SCS in Monterey County.

San Benito County

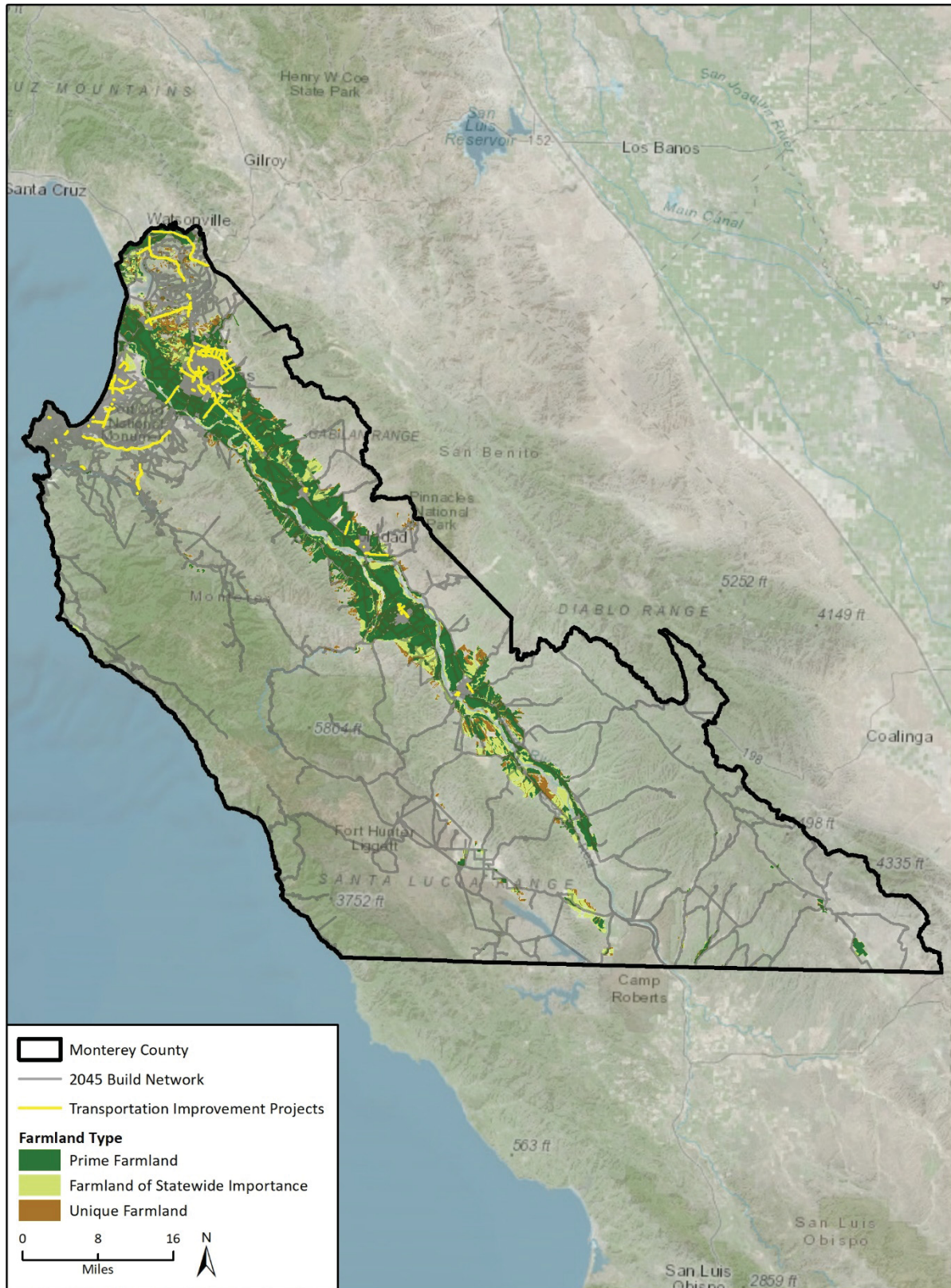
The San Benito River Valley supports some of the most productive farmland in the State. Agriculture makes a substantial contribution to the County economy and accounts for an overwhelming amount of the privately-owned land in the County. The primary crops are fruits and nuts, vegetables and other row crops and small grains, and County lands also support the livestock industry, namely beef cattle and sheep (San Benito 2019).

The County's gross agricultural production in 2019 totaled approximately \$396 million, representing a nearly 13 percent increase in value over the previous year (San Benito County 2019). According to the 2019 Crop Report, the highest grossing agricultural commodity was vegetable and row crops, representing approximately 65 percent of total agricultural sales, followed by field crops at 15 percent, fruit and nut crops at 14 percent, cattle at 6 percent and miscellaneous livestock and poultry at one percent. As noted previously in Table 4.2-1, 36,352 acres in San Benito County designated under the FMMP as containing Important Farmlands. According to the FMMP, between the years 2014 and 2016, nearly 1,271 acres of Important Farmland were converted to Grazing Land, two acres were converted to Urban and Built-Up Land and 42 acres were converted to Other Land in the county (DOC 2019). Figure 4.2-2 compares the locations of Farmland to the locations of transportation projects included in the 2045 MTP/SCS in San Benito County.

Santa Cruz County

The top ten revenue crops that were produced in Santa Cruz County in 2015 included strawberries, raspberries, nursery stock, indoor cut and field grown flowers, blackberries, miscellaneous vegetables, lettuce, brussels sprouts, livestock and animal products and apples (Santa Cruz County 2019). The most common crop types (by acreage) in Santa Cruz County include strawberries, raspberries, apples, lettuce, brussels sprouts and miscellaneous vegetables. As noted previously in Table 4.2-1, 19,292 acres in Santa Cruz County are designated under the FMMP as containing Important Farmlands. According to the FMMP, between the years 2014 and 2016, approximately 31 acres of Important Farmland were converted to Grazing Land, one acre was converted to Urban and Built-Up Land and 56 acres were converted to Other Land in the county (DOC 2019). Figure 4.2-3 compares the locations of Farmland to the transportation projects included in the 2045 MTP/SCS in Santa Cruz County.

Figure 4.2-1 Farmland in Monterey County



Imagery provided by Microsoft Bing and its licensors © 2021.
Additional data provided by AMBAG, 2021 and FMMP, 2016.

Fig 4.2-1_Important Farmland in Monterey County

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Figure 4.2-2 Farmland in San Benito County

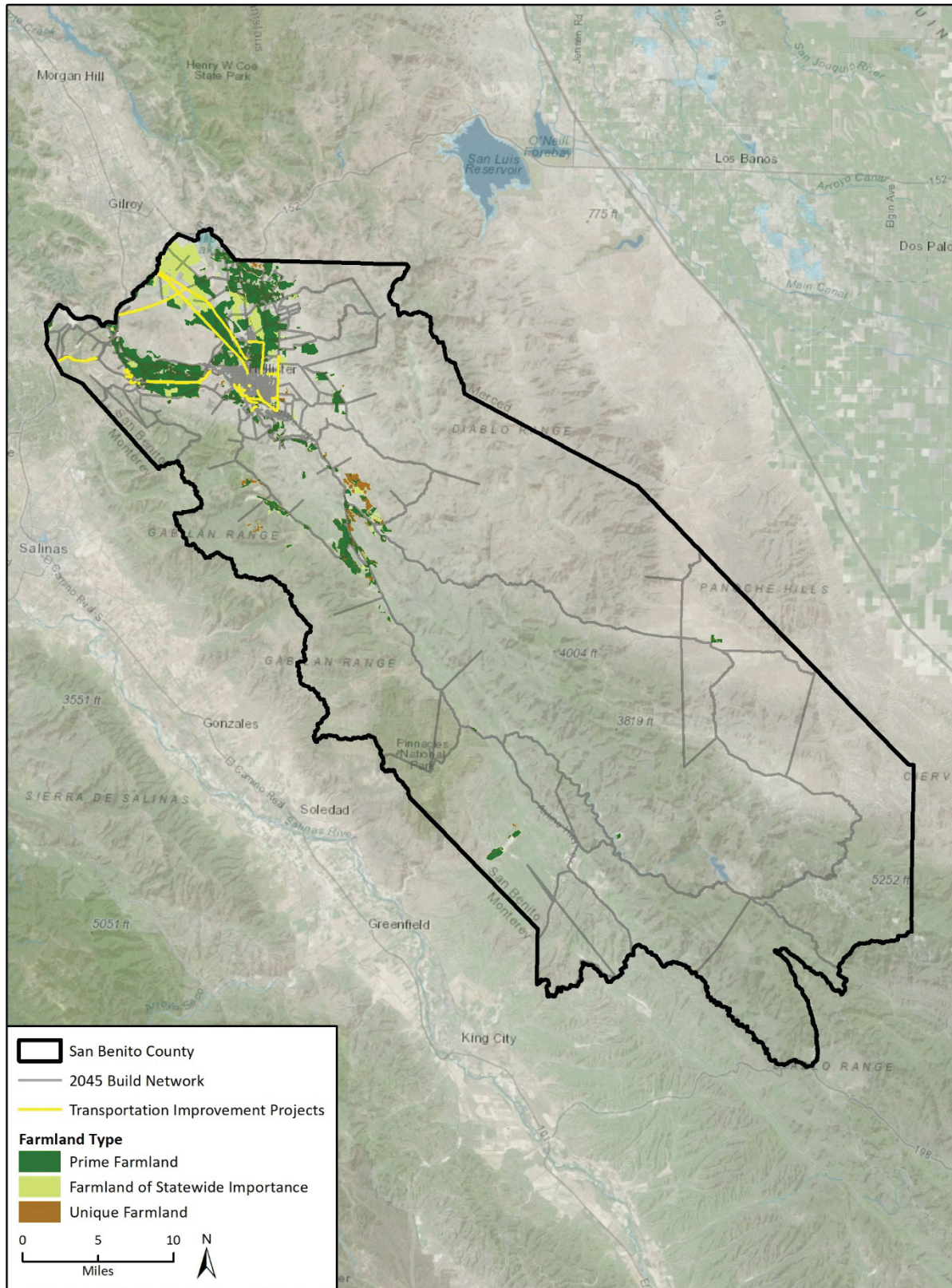


Fig 4.2-2, Important Farmland in San Benito County

Figure 4.2-3 Farmland in Santa Cruz County

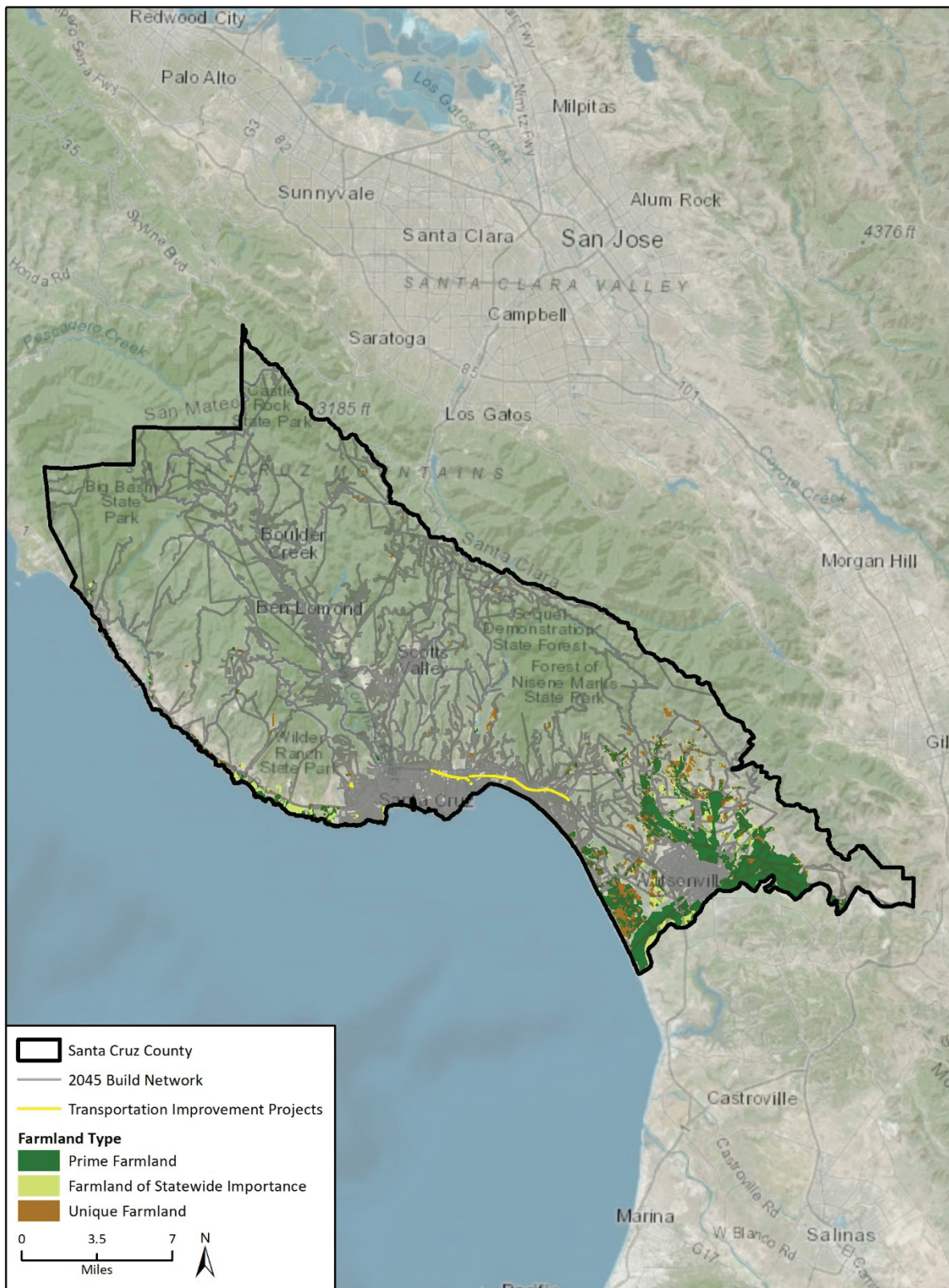


Fig 4.2-3. Important Farmland in Santa Cruz County

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Santa Cruz County has a large concentration of organic farms. There are approximately 145 organic growers in Santa Cruz County with over 8,000 acres in organic crops and pasture. These crops have an estimated value of over \$147 million and represent approximately 23 percent of the total gross production value of Santa Cruz County agricultural commodities (Santa Cruz County 2019).

Forestry Resources

Monterey County

Monterey County contains expansive forest land areas, particularly along the coast in the southern portion of the County, in the Big Sur region and Los Padres National Forest. Major protected areas in the County with forestry resources include Los Padres National Forest, Fort Ord National Monument, Pinnacles National Park, and Palo Corona Regional Park. Monterey County historically had timber production; however, there are currently no parcels zoned for timberland production pursuant to the California Timberland Productivity Act of 1982 [Chapter 6.7 (commencing with Government Code Section 51100) of Part 1 of Division 1 of Title 5] within the County (Monterey County 2010).

San Benito County

Forest land, as defined by Public Resources Code Section 12220(g) and timberland, as defined by Public Resources Code Section 4526, and timberland production areas, as defined by Government Code Section 51104(g), do not exist within San Benito County. There are no large, forested areas in the County, no commercial forestry production, and no known timber resources. While the southern, far northwestern, far western, and eastern portions of the County within the Gabilan and Diablo mountain ranges include oak woodland habitat and some very small and scattered forested areas, these areas are not classified as timber lands according to the existing San Benito County zoning designations as well as the governing statutes and regulations. Instead, according to the Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program (FRAP) land use cover maps, the majority of these areas are classified as a combination of woodland and shrub habitat (San Benito County 2015a).

Santa Cruz County

Santa Cruz County supports extensive areas of productive timber and protected forest land. The Santa Cruz Mountains and inter-mountain valleys support extensive forests with active timber production operations, particularly in the North Coast and Mountain regions. Forested lands and timberland occupy a substantial portion of the County with large areas of timber production in the Santa Cruz Mountains (Santa Cruz County 2017). Timber Resources within the County are areas as defined by the General Plan, if they are on lands zoned CA or M3 – Mineral Extraction. On these lands, timber may be grown and harvested if there are sufficient timber resources to meet minimum stocking standards. Timberlands may occur within all zoning districts of the County and primarily located within Timber Production areas.

In its General Plan, Santa Cruz County designates Timber Production Zones (TPZ), defined as timberlands devoted to and used for growing and harvesting timber and capable of producing an average annual volume of wood fiber of at least 15 cubic feet per acre (Santa Cruz County 1994). As shown in Figure 4.2-4, most TPZs are located along the Santa Cruz-San Mateo and Santa Cruz-Santa Clara county lines, as well as in the northwestern portion of the county, near the unincorporated communities of Swanton and Davenport (Land Trust of Santa Cruz County 2011). In 2020, 27,130 acres of TPZ in Santa Cruz County were affected by the CZU Lighting Complex Fires. TPZs within fire boundary were affected to varying degrees and a significant amount of underwent salvage logging (RCDSC 2021). The County also has Timber Harvesting Plans (THP), as approved by the CAL FIRE. Most of the THPs in the county are located along the Santa Cruz-San Mateo and Santa Cruz-Santa Clara county lines, becoming smaller and sparser close to the cities of Santa Cruz and Watsonville.

4.2.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

Farmland Protection Policy Act (FPPA)

The FPPA is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that to the extent possible federal programs are administered to be compatible with state, local units of government and private programs and policies to protect farmland. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or with assistance from a Federal agency.

Federal Forest Legacy Program

The Federal Forest Legacy Program was a part of the 1990 Farm Bill. Its purpose is to identify and protect environmentally important forestlands that are threatened by present or future conversion to non-forest uses. The program provides conservation easements and gives priority to lands that can be effectively protected and managed, as well as lands that have significant scenic, recreational, timber, riparian, fish and wildlife, threatened and endangered species, and other cultural or environmental values. Properties that are “working forests,” whereby the forestland is managed for the production of forest products, are also eligible under this program. Involvement in this program by private landowners is voluntary.

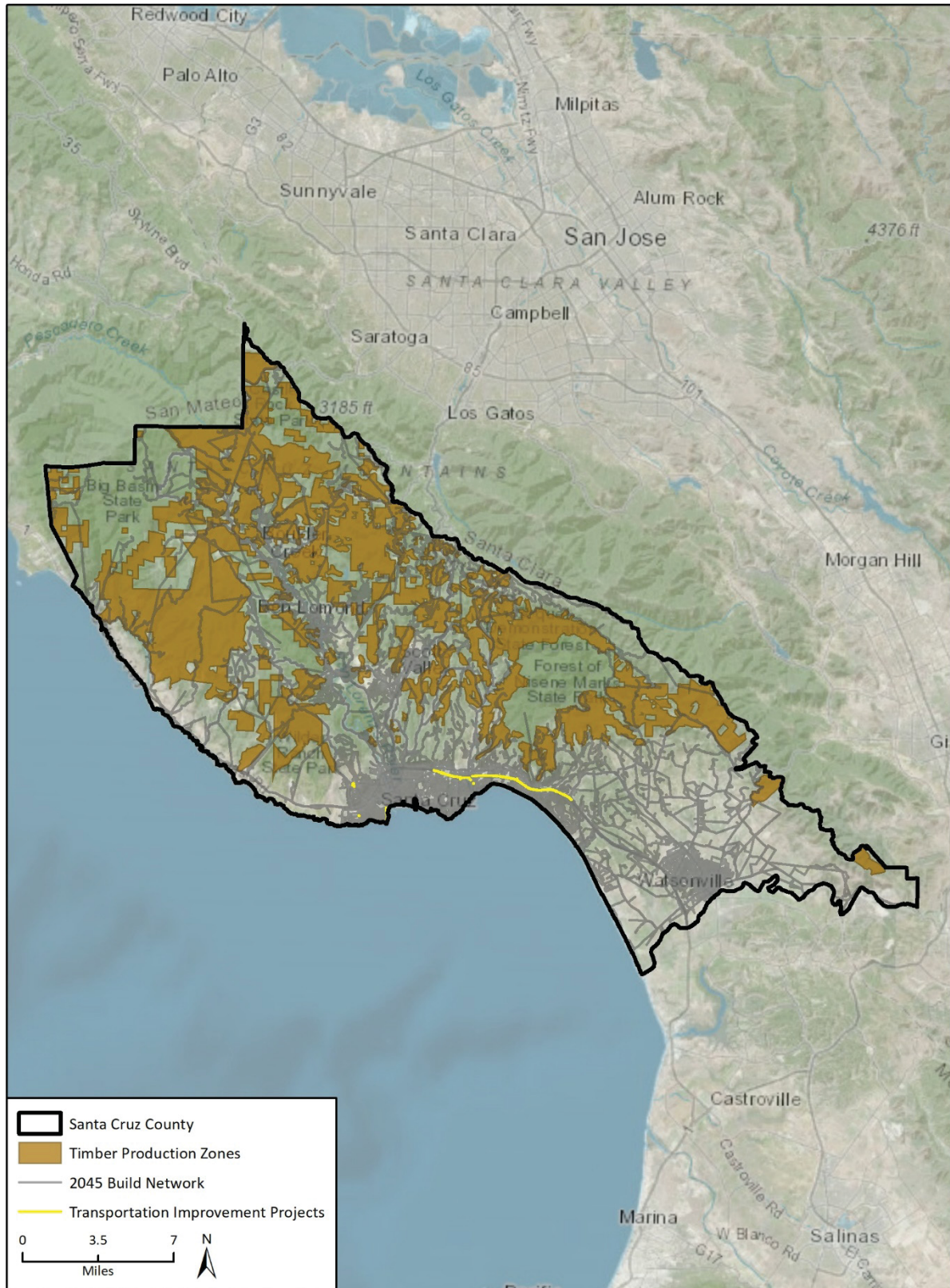
b. State Laws, Regulations, and Policies

Farmland Mapping and Monitoring Program (FMMP)

The DOC, under the Division of Land Resource Protection, developed the FMMP to monitor the conversion of the state’s farmland to and from agricultural use. Data is collected at the

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Figure 4.2-4 Timber Production Zones in Santa Cruz County



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 Additional data provided by AMBAG, 2021 and FMMP, 2018.

Fig 4.2-4 Timber Production Zones Within Santa Cruz County

county level to produce a series of maps identifying eight land use classifications using a minimum mapping unit of 10 acres. The program also produces a biannual report on the amount of land converted from agricultural to non-agricultural use. The program maintains an inventory of state agricultural land and updates the “Important Farmland Series Maps” every two years (DOC 2016).

Right to Farm Act 1981

The Right to Farm Act (Civil Code Section 3482.5) is designed to protect commercial agricultural operations from nuisance complaints that may arise when an agricultural operation is conducting business in a “manner consistent with proper and accepted customs.” The code specifies that established operations that have been in business for 3 or more years that were not nuisances at the time they began shall not be considered a nuisance as a result of new land use.

Williamson Act

The California Land Conservation Act of 1965, Sections 51200 et seq. of the California Government Code, commonly referred to as the “Williamson Act”, enables local governments to restrict the use of specific parcels of land to agricultural or related open space use. Landowners enter into contracts with participating cities and counties and agree to restrict their land to agriculture or open space use for a minimum of ten years. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market (speculative) value.

Coastal Zone Management Act

The Coastal Zone Management Act requires the protection of agricultural lands within the coastal zone. It does so by directly mandating that the maximum amount of prime agricultural land be maintained in production and by supporting various techniques to limit threats to agricultural productivity. These include establishing stable urban-rural boundaries, agricultural buffers, development priority on lands not suitable for agriculture, subdivision restrictions and public service expansion controls (Public Resource Code Section 30241).

The Cortese-Knox-Hertzberg Local Government Reorganization Act

The Cortese-Knox-Hertzberg Local Government Reorganization Act (Government Code Sections 56000 et seq.) establishes procedures for local government changes of organization, including city incorporations, annexations to a city or special district and city and special district consolidations. This act requires that development or use of land for other than open space will be guided away from existing prime agricultural lands in open space use toward areas containing nonprime agricultural lands, unless that action would not promote that planned, orderly, efficient development of an area.

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Forest Practice Act of 1973

CAL FIRE enforces the laws that regulate logging on privately owned lands in California under the Forest Practice Act. Under the Forest Practice Act, timber operations may only be conducted pursuant to an approved THP, an environmental review document prepared by a Registered Professional Forester and submitted by landowners to CAL FIRE. The THP outlines the timber they want to harvest, how it will be harvested, and the steps that will be taken to prevent damage to the environment. Because a THP is the functional equivalent to an EIR for tree removal activities, the approval of a THP could depend on the inclusion of required mitigation.

A landowner that proposes to carry out a project that will result in timberland being converted to a non-timber growing use must apply for either a TCP or a notice of exemption. Grounds for exemption include conversions of less than three acres, conversions to construct or maintain a right-of-way by a public agency or a public or private utility, and development of subdivisions on forest land where approved by local government. When a TCP is issued, restocking of the timber resources is not required, as the land is converted to a non-timber growing use.

c. Local Laws, Regulations, and Policies

Each of the three counties' General Plans highlights the importance of protecting agricultural land. The Monterey County General Plan (Monterey County, 2010a) contains goals to promote the long-term protection, conservation and enhancement of productive and potentially productive agricultural land and ensure that the County's land use policies are consistent with ongoing agricultural activities. The Santa Cruz County's General Plan (Santa Cruz County, 1994) pays particular attention to the County's timber resources and provides policies that limit and regulate development in TPZ. The San Benito County 2035 General Plan (San Benito County, 2015a) also contains goals and policies to protect agricultural lands, but also contains the concept "right to farm and ranch." Specifically, San Benito County aims to protect the rights of operators of productive agricultural properties and ranching properties to continue their practices even though established urban uses in the general area may foster complaints against those agricultural and ranching practices.

Several cities within the AMBAG region have adopted policies in their General Plans aimed at preserving agricultural land. Representative policies for cities within each of the three counties are discussed below.

Cities in Monterey County

The City of Greenfield's Conservation, Recreation and Open Space Element of its General Plan (Greenfield, 2005) contains several policies which aim to allow agriculture to continue as a viable use of land that reflects the community's origin while minimizing conflicts between agricultural and urban uses. For example, Policy 7.1.2 expresses the intent to minimize conflicts and negative impacts resulting from development that occurs in close proximity to

agricultural uses. Moreover, Policy 7.1.3 encourages the promotion and marketing of locally grown agricultural products.

The Conservation and Open Space Element of the City of Soledad's General Plan (Soledad, 2005) also contains policies aimed at preserving existing agricultural uses. Policy C/OS-1 states that "[t]he City shall discourage 'leapfrog' development and development in peninsulas extending into agricultural lands to avoid adverse effects on agricultural operations." Furthermore, Policy C/OS-3 aims to reduce urban encroachment upon agricultural lands by ensuring that new development and public infrastructure projects do not encourage expansion of urban uses outside the General Plan area into area designated as Agriculture by the Monterey County General Plan. Lastly, Policy C/OS-5 requires a right-to-farm condition to all future subdivision maps adjacent to farmlands.

The Conservation and Open Space Element of the City of Gonzales' General Plan (Gonzales, 2010) contains goals, policies and implementing actions that focus on minimizing development on the agricultural edge. For example, Goal COS-4 states that the City aims for "[m]inimal disruption of agricultural operations and the loss of prime farmland and agricultural open space outside the Gonzales 2010 General Plan growth area. Furthermore, Policy COS-4.1 aims to maintain agricultural as the core of the local economy by conserving and protecting agricultural lands and operations within the Planning Area and where agricultural land is planned for eventual urbanization, work to keep such land in production up until the time when the land is converted to urban use. The Land Use Element of the City of Salinas' General Plan (Salinas, 2002) contains several goals and policies aimed specifically at preserving existing agriculture land uses. For example, Goal LU-2 states that the City aims to "[m]anage future growth to minimize impacts to the existing community and surrounding agricultural lands." This is executed by the City of Salinas by maintaining a compact city form and directing urban expansion to the North and East, away from the most productive agricultural land. Moreover, the City's Conservation and Open Space Element also provides goals and policies aimed at protecting important agricultural land. Goal COS-3 in the Conservation and Open Space Element aims to "[i]dentify, preserve and protect the significant agricultural resources within and surrounding Salinas, while minimizing conflicts between agricultural and urban uses."

Cities in San Benito County

The Open Space and Agriculture Element of the City of Hollister's General Plan (Hollister, 2005) contains policies specifically aimed at preserving important and prime farmland. Policy OS2.1, *Premature Conversion of Prime Farmland*, aims to minimize the premature conversion of prime farmland to non-agricultural uses by directing urban growth toward portions of the Hollister Planning Area which have not been identified as prime farmland. Likewise, Policy OS2.2, *Coordination with San Benito County to Preserve Prime Farmlands*, encourages the County of San Benito to maintain existing County land use policies that discourage urban development in rural areas within the County as a way to ensure continuing agricultural operations within portions of the Hollister Planning Area. This policy also encourages the City to coordinate with the County of San Benito in efforts to maintain prime farmlands in active agricultural use whenever possible and in all efforts to maintain the continued economic

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viability of agricultural within the Hollister Planning Area. Finally, Policy OS2.3, *Williamson Act Contracts*, encourages the sponsors of subdivisions on agriculturally viable land to enter and maintain prime soils of the proposed subdivision in Williamson Act contracts as a means of off-setting the loss of agricultural land.

The Conservation Element of the City of San Juan Bautista 2035 General Plan (San Juan Bautista, 2015) outlines several policies which aim to preserve important environmental resources. For example, Policy CO 1.1.1 discourages the conversion of prime agricultural land into non-agricultural uses.

Cities in Santa Cruz County

The City of Santa Cruz 2030 General Plan (City of Santa Cruz, 2012b) includes Policy LU1.2 in its Land Use and Natural Resources and Conservation Elements, which ensures that growth and development do not lead to the loss of prime agricultural land. In addition, Policy NRC3.4 aims to conserve agricultural resources in the Planning Area.

The City of Watsonville's 2005 General Plan (City of Watsonville, 1994) Growth and Conservation Element contains Goal 3.3, *Agricultural Land Use*, which encourages the continuation of agriculture in the Pajaro Valley, and Implementation Measure 3.A.1, *Government Cooperation*, which expresses the City's intent to cooperate with Santa Cruz and Monterey counties to establish mutually reinforcing goals of city-centered development to prevent the intrusion of rural residential uses and urban development into agricultural lands.

4.2.3 Impact Analysis

a. Methodology and Significance Thresholds

Appendix G of the *State CEQA Guidelines* identifies the following criteria for determining whether a project's impacts would have a significant impact on agricultural resources:

1. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use;
2. Conflict with existing zoning for agricultural use, or a Williamson Act contract;
3. Conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timber Production;
4. Result in the loss of forest land or conversion of forest land to non-forest use; and/or
5. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use.

b. Project Impacts and Mitigation Measures

The following section describes agricultural resources impacts associated with the transportation improvements and future land use scenario included in the 2045 MTP/SCS. Table 4.2-2 summarizes the specific transportation projects that could result in agriculture

and forestry resource impacts. Due to the programmatic nature of the 2045 MTP/SCS, a precise, project level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2045 MTP/SCS could result in the impacts as described in the following section.

Threshold 1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use

Threshold 2: Conflict with existing zoning for agricultural use, or a Williamson Act contract

Threshold 5: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use

Impact AG-1 PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE 2045 MTP/SCS WOULD RESULT IN THE CONVERSION OF PRIME FARMLAND, UNIQUE FARMLAND, OR FARMLAND OF STATEWIDE IMPORTANCE TO NONAGRICULTURAL USE, OR CONFLICT WITH EXISTING ZONING FOR AGRICULTURE OR A WILLIAMSON ACT CONTRACT. THIS WOULD BE A SIGNIFICANT AND UNAVOIDABLE IMPACT.

As noted in Table 4.2-1, there were 282,024 acres of Farmland (consisting of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland, as defined by the DOC) in the AMBAG region in 2016 (DOC 2019). The AMBAG region has a total of 1,668,261 acres of preserved agricultural land, which represents 51 percent of the region's total land area.

The 2045 MTP/SCS emphasizes infill development and development near existing transportation corridors, which are generally located in urbanized areas of cities and unincorporated communities. Such land use development within urbanized areas would limit agricultural resource impacts since development would be located within existing urban areas. However, some development would still occur in agricultural areas, resulting in the conversion of approximately 2,635 acres of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance to non-agricultural use by 2045 (refer to Chapter 5 and Appendix G of the 2045 MTP/SCS). This represents 0.9 percent of the total Farmland in the region in 2016 (refer to Table 4.2-1). All of the Farmland being consumed in the 2045 MTP/SCS is within existing spheres of influence or is within Community Plan Areas as designated by the General Plans in the region.

Transportation improvement projects under the 2045 MTP/SCS adjacent to agricultural areas, particularly those requiring new rights-of-way, could also convert Important Farmland to non-agricultural use, or conflict with agricultural zoning and/or Williamson Act contracts. Although incorporated cities in Monterey, San Benito, and Santa Cruz County are fairly urbanized, many cities border agriculture, including FMMP-designated Important Farmland. These include the City of Watsonville in Santa Cruz County; the cities of Salinas, Soledad, Gonzales, Greenfield and King City in Monterey County; and the cities of San Juan Bautista and Hollister in San Benito County. Transportation improvement projects that involve roadway widening have the potential to affect narrow segments of agricultural land located

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immediately along the existing right-of-way of proposed improvements. For example, the widening of Boronda Road in Salinas would have the potential to impact agricultural fields immediately adjacent to its western edge, and the widening planned for Highway 25 between Felipe Road and Hudner Lane in Gilroy would have the potential to impact adjacent agricultural land on either side of the roadway. In addition, improving, expanding and extending existing roadways, along with the installation of new roadways, could remove some barriers to development taking place on the urban edge as the region's connectivity and access improves from these projects. Additionally, construction of projects adjacent to agricultural fields could result in introduction of invasive species or weeds, which could out compete agricultural crops. It is important to note that for federally funded projects, implementing and local agencies are required to follow the rules and regulations of the Farmland Protection Policy Act (FPPA) including determining the impact by completing the Farmland Conversion Impact Rating form (AD-1006). The FPPA assures that to the extent possible, federal programs are administered to be compatible with state and local programs and policies to protect farmland.

A determination of the impacts to Farmland, agricultural zoning and conflicts with Williamson Act contracts would be made on a case-by-case basis as individual projects are implemented. Many individual projects would likely not create significant impacts, particularly those that involve only minor widening along existing rights-of-way or would be located in urbanized areas zoned for development. Nevertheless, because implementation of the 2045 MTP/SCS would directly result in conversion of Important Farmland and conflict with agricultural zoning and Williamson Act contracts, this would be a significant impact.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the 2045 MTP/SCS program where applicable for transportation projects that would result in impacts to Important Farmland, and where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

AG-1 Agricultural Land Impact Avoidance and Minimization

Implementing agencies shall implement measures, where feasible based on project and site specific considerations, that include, but are not limited to those identified below.

- Require project relocation or corridor realignment, where feasible, to avoid Important Farmland, agriculturally zoned land and/or land under Williamson Act contract;
- Manage project construction to minimize the introduction of invasive species or weeds that may affect agricultural production on agricultural land adjacent to project sites. Managing project construction may include washing construction equipment before

bringing equipment on-site, using certified weed-free straw bales for construction Best Management Practices (BMPs), and other similar measures.

- Provide buffers, berms, setbacks, fencing, or other project design measures to protect surrounding agriculture, and to reduce conflict with farming that could result from implementation of transportation improvements and/or development included as a part of the MTP/SCS;
- Achieve compensatory mitigation in advance of impacts through purchase or creation of mitigation credits or the implementation of mitigation projects through Regional Advance Mitigation Planning, as deemed appropriate by permitting agencies; and/or
- Require acquisition of conservation easements on land in the same jurisdiction, if feasible, and at least equal in quality and size to converted Important Farmland, to offset the loss of Important Farmland.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

Significance After Mitigation

Implementation of Mitigation Measure AG-1 would require avoidance or compensation for Important Farmland impacts by specific projects included in the 2045 MTP/SCS, thereby reducing the impact of conversion of Important Farmland to non-agriculture use and conflicts with agricultural zoning and Williamson Act contracts. However, the mitigation would not ensure that the future land use development pattern and transportation projects could feasibly relocate or realign to avoid conversion of Farmland, lands zoned for agriculture, and lands under Williamson Act contract to a less than significant level. As a result, the aforementioned mitigation would reduce impacts, but impacts would remain significant and unavoidable.

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Threshold 3: Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))

Threshold 4: Result in the loss of forest land or conversion of forest land to non-forest use

Impact AG-2 PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE 2045 MTP/SCS WOULD NOT CONFLICT WITH EXISTING ZONING FOR FOREST LAND, TIMBERLAND, OR TIMBERLAND PRODUCTION, NOR RESULT IN THE LOSS OF FOREST LAND OR CONVERT FOREST LAND TO NON-FOREST USES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Most timber resources in the AMBAG region are in Santa Cruz County. All but one Timber Harvest Plan (in southern Monterey County) are in the mountains of Santa Cruz County (CAL FIRE 2021). Additionally, according to the CAL FIRE FRAP 2010 Assessment, Santa Cruz County is the only county in the AMBAG region that contains land zoned with a Timber Production Zone designation (FRAP 2019; refer to Figure 4.2-4).

The land use development pattern in Santa Cruz County, as shown in Section 2, *Project Description*, would concentrate development within existing urbanized areas. Some development could occur within and around Scotts Valley and along Highway 9. Limited development could overlap with existing Timber Harvest Plans. However, these areas of overlap are primarily Town/Rural Residential and would not result in the loss of forest land or land zoned for forest land, timberland, or timberland production. In addition, the SCS land use pattern would not result in rezoning of any existing land, including within the Santa Cruz Mountains.

There are several local street improvement projects that occur near densely forested areas within the Santa Cruz Mountains, such as the San Lorenzo Valley Bridge Replacement Project and Empire Grade Improvements Project. These projects, as well as other future development in areas zoned as forest land would be required to comply with existing development standards and zoning regulations, and thus would by design comply with then-existing zoning for forest land, timberland, and timberland production. In addition, projects within the 2045 MTP/SCS that are located near forest lands would be required to comply with all applicable construction standards to reduce impacts on forest land and timber resources.

Because land use strategies contained within the 2045 MTP/SCS would help to encourage growth in developed areas, and because of the majority of timber areas are outside the identified land use development areas in Santa Cruz County, impacts on conversion of forest land or conflicts with land zoned for forest land, timberland, or timberland production would be less than significant.

Mitigation Measures

None required.

c. Specific MTP/SCS Projects That May Result in Impacts

Table 4.2-2 identifies examples of transportation projects with the potential to cause or contribute to direct or indirect impacts to agricultural resources such as those discussed above. These projects are representative and were selected based on their potential scope and likelihood of disturbing agricultural lands. Additional specific analysis would be required as individual projects are implemented to determine the project specific magnitude of impact. Mitigation discussed above would apply to these specific projects.

Table 4.2-2 2045 MTP/SCS Projects That May Result in Agriculture and Forestry Impacts

AMBAG ID	Project	Potential Impact
MON-GRN001-GR	Apple Avenue Bridge over U.S. 101	AG-1
MON-GRN005-GR	Thorne Road Bridge over U.S. 101	AG-1
MON-MYC075-UM	River Road Operational Improvements	AG-1
MON-SNS078-SL	Natividad Creek Bike Path	AG-1
MON-CT030-SL	U.S. 101 – Salinas Corridor	AG-1
MON-CT031-CT	U.S. 101 – South County Frontage Roads	AG-1
MON-CT036-CT	SR 156 - Castroville Boulevard Interchange	AG-1
MON-GON015-GO	US 101 / Gloria Road Interchange	AG-1
MON-GRN008-GR	U.S. 101 – Walnut Avenue Interchange	AG-1
MON-SOL002-SO	U.S. 101 – North Interchange	AG-1
MON-SOL003-SO	U.S. 101 – South Interchange	AG-1
MON-SNS012-SL	Boronda Road Widening	AG-1
MON-SNS037-SL	Main Street (North) Widening	AG-1
MON-SNS044-SL	Natividad Road Widening	AG-1
MON-SNS048-SL	Romie Lane Widening	AG-1
MON-SNS050-SL	Russell Road Widening	AG-1
MON-SNS059-SL	Williams Road Widening	AG-1
MON-SNS090-SL	Russell Road Extension	AG-1
MON-SNS092-SL	San Juan Natividad Collector	AG-1
MON-SNS093-SL	Independence Boulevard Extension	AG-1
MON-SNS094-SL	Hemingway Drive Extension	AG-1
MON-SNS095-SL	Constitution Boulevard Extension	AG-1
MON-SNS096-SL	Sanborn Road Extension	AG-1
MON-SNS097-SL	Williams Russel Collector	AG-1
MON-SNS098-SL	Alisal Street Extension	AG-1
MON-SNS099-SL	Moffett Street Extension	AG-1
MON-SNS100-SL	Rossi Street Widening	AG-1
MON-SNS101-SL	Bernal Drive Extension	AG-1
MON-SNS102-SL	Constitution Boulevard Extension	AG-1

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AMBAG ID	Project	Potential Impact
MON-SNS103-SL	Williams Road Widening	AG-1
MON-SNS104-SL	Alisal Street Widening	AG-1
MON-SNS108-SL	Laurel Drive Widening	AG-1
MON-SNS121-SL	McKinnon Street Extension	AG-1
MON-MYC147-UM	Castroville Improvements/Blackie Road	AG-1
SB-CT-A01	SR 156 Widening – San Juan Bautista to Union Road	AG-1
SB-CT-A17	Airline Highway Widening/SR 25 Widening: Sunset Drive to Fairview Road	AG-1
SB-CT-A44	Highway 25 Widening, Phase 1	AG-1
SB-COH-A11	Union Road (Formerly Crestview Drive) Construction	AG-1
SB-COH-A16	Memorial Drive Extension: Meridian Street to Santa Ana Road	AG-1
SB-COH-A18	Westside Boulevard Extension	AG-1
SB-COH-A55	Memorial Drive North Extension: Santa Ana Road to Flynn Road/Shelton Intersection	AG-1
SB-SBC-A04	Union Road Widening (East): San Benito Street to Highway 25	AG-1
SB-SBC-A05	Union Road Widening (West): San Benito Street to Highway 156	AG-1
SB-SBC-A09	Fairview Road Widening: McCloskey to SR 25	AG-1
SB-SBC-A14	San Benito Regional Park Access Road	AG-1
SB-SBC-A67	Shore Road Extension	AG-1
SB-SBC-A79	Enterprise Road Extension	AG-1
SB-SBC-A81	Meridian Street Extension: 185 feet east of Clearview Road to Fairview Road	AG-1
SB-SBC-A82	Flynn Road Extension	AG-1
SB-SJB-A09	Lang Street	AG-1

4.3 Air Quality and Health Impacts/Risks

This section analyzes the impacts of the 2045 MTP/SCS on local and regional air quality, including both temporary impacts relating to construction activities and long-term impacts associated with population and employment growth and associated growth in transportation and energy consumption. In addition, the potential health risks associated with the development and growth induced by the 2045 MTP/SCS are discussed. Greenhouse gas emissions are analyzed in Section 4.8, *Greenhouse Gas Emissions/Climate Change*.

4.3.1 Setting

a. Local Climate and Topography

Air quality is affected by the rate and location of pollutant emissions and by climatic conditions that influence the movement and dispersion of pollutants. Atmospheric conditions, such as wind speed, wind direction and air temperature gradients, along with local and regional topography, mediate the relationship between air pollutant emissions and air quality.

The North Central Coast Air Basin (NCCAB) is comprised of Monterey, Santa Cruz, and San Benito counties. The Basin lies along the central coast of California and covers an area of 5,159 square miles. The Diablo Range marks the northeastern boundary and, together with the southern extent of the Santa Cruz Mountains, forms the Santa Clara Valley, which extends into the northeastern tip of the NCCAB. Further south, the Santa Clara Valley transitions into the San Benito Valley, which runs northwest-southeast and has the Gabilan Range as its western boundary. To the west of the Gabilan Range is the Salinas Valley, which extends from Salinas at its northwestern end to King City at its southeastern end. The western side of the Salinas Valley is formed by the Sierra de Salinas, which also forms the eastern side of the smaller Carmel Valley. The coastal Santa Lucia Range defines the western side of the Carmel Valley (Monterey Bay Air Resources District [MBARD] 2008).

The semi-permanent high-pressure cell in the eastern Pacific is the basic controlling factor in the climate of the NCCAB. In the summer, the high-pressure cell is dominant and causes persistent west and northwest winds over the entire California coast. Air descends in the Pacific High forming a stable temperature inversion of hot air over a layer of cool coastal air. The onshore air currents pass over cool ocean waters to bring fog and relatively cool air into the coastal valleys. The warmer air loft acts as a lid to inhibit vertical air movement (MBARD 2008).

The generally northwest-southeast orientation of mountainous ridges tends to restrict and channel the summer onshore air currents. Surface heating in the interior portion of the Salinas and San Benito Valleys creates a weak low pressure which intensifies the onshore air flow during the afternoon and evening. In the fall, the surface winds become weak, and the marine layer grows shallow, dissipating altogether on some days. The air flow is occasionally reversed in a weak offshore movement, and the relatively stationary air mass is held in place by the Pacific high-pressure cell, which allows pollutants to build up over a period of a few

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days. It is most often during this season that the north or east winds develop to transport pollutants from either the San Francisco Bay Area or the Central Valley into the NCCAB (MBARD 2008).

During the winter, the Pacific High migrates southward and has less influence on the NCCAB. Air frequently flows in a southeasterly direction out of the Salinas and San Benito Valleys, especially during night and morning hours. Northwest winds are nevertheless still dominant in winter, but easterly flow is more frequent. The general absence of deep, persistent inversions and the occasional storm systems usually result in good air quality for the NCAAB in winter and early spring (MBARD 2008).

In Santa Cruz County, coastal mountains exert a strong influence on atmospheric circulation, which results in generally good air quality. Small inland valleys such as Scotts Valley with low mountains on two sides have poorer circulation than at Santa Cruz on the coastal plain. In addition, Scotts Valley is downwind of major pollutant generating centers, and these pollutants have time to form oxidants during transit Scotts Valley. Consequently, air pollutants tend to build up more in Scotts Valley than in Santa Cruz (MBARD 2008).

Monterey Bay is an approximately 25-mile-wide inlet, which allows marine air at low levels to penetrate the interior. The Salinas Valley is a steep-sloped coastal valley which opens out on Monterey Bay and extends southeastward with mountain ranges of two to three thousand feet elevation on either side. The broad area of the valley floor near the mouth is approximately 25 miles wide, narrowing to about six miles at Soledad, which is 40 miles inland, and to about three miles wide at King City, which is about 60 miles from the coast. At Salinas, near the northern end of the Valley, west and northwest winds occur about one-half the time during the entire year. Although the summer coastal stratus rarely extends beyond Soledad, the extended sea breeze, which consists of warmer and drier air currents, frequently reaches far down the Salinas Valley. In the southern end of the Valley, which extends into the South Central Coast Air Basin to Paso Robles, winds are generally weaker most of the year except during storm periods (MBARD 2008). The regional air patterns are important in context with air quality because meteorology influences how pollutants move through the air basin and how long pollutants remain in the air basin.

b. Air Pollutants of Primary Concern

The federal and State Clean Air Acts (CAA) mandate the control and reduction of certain air pollutants, referred to as “criteria pollutants.” Under these laws, described more below in Section 4.3.2, *Regulatory Setting*, the U.S. Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for criteria pollutants. Primary criteria pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere and include carbon monoxide (CO), reactive organic gasses (ROG), nitrogen oxides (NO_x), fine particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide (SO₂) and lead (Pb). Secondary criteria pollutants are created by atmospheric chemical and photochemical reactions. ROG, together with nitrogen oxides, form the building blocks for the creation of photochemical (secondary) pollutants. Secondary

pollutants include oxidants, ozone, sulfate and nitrate particulates (smog). The characteristics, sources, and effects of selected air contaminants are provided in Table 4.3-1.

Table 4.3-1 Description of Selected Air Contaminants

Photochemical Oxidant (Ox)

Characteristics. The term “photochemical oxidant” can include several different pollutants but consists primarily of ozone (more than 90 percent) and a group of chemicals called organic peroxy nitrates. Photochemical oxidants are created in the atmosphere rather than emitted directly into the air. Reactive organic gases and oxides of nitrogen are the emitted contaminants, which participate in the reaction. Ozone is a pungent, colorless toxic gas, which is produced by the photochemical process. Photochemical oxidant is a characteristic of southern California-type smog and reaches highest concentrations during the summer and early fall.

Sources. Ozone is caused by complex atmospheric reactions involving oxides of nitrogen and reactive organic gases with ultraviolet energy from sunlight. Motor vehicles are the major source of oxides of nitrogen and reactive organic gases in the basin.

Effects. The common manifestations of ozone and other photochemical oxidants are damage to vegetation and cracking of untreated rubber. Ozone in high concentrations (ranging from 0.15 ppm to 0.50 ppm) can also directly affect the lungs, causing respiratory and coronary irritation and possible changes in lung functions. These health problems are particularly acute in children and elderly people exposed to these pollutants.

Carbon Monoxide (CO)

Characteristics. CO is a colorless, odorless, toxic gas produced through the incomplete combustion of fossil fuels. Concentrations are higher in winter when more fuel is burned for heating purposes and weather conditions favor the build-up of directly emitted contaminants.

Sources. The use of gasoline-powered engines is the major source of this contaminant, with automobiles being the primary contributor. The CO emissions from gasoline-powered engines are higher during winter months due to poor engine efficiency in cold temperatures. Various industrial processes also produce CO emissions through incomplete combustion of fossil fuels.

Effects. CO does not irritate the respiratory tract. However, it passes through the lungs directly into the blood stream and, by interfering with the transfer of oxygen, deprives sensitive tissues of oxygen.

Nitrogen Oxides (NO_x)

Characteristics. NO_x primarily consists of nitric oxide (NO) (a colorless, odorless gas formed from atmospheric nitrogen and oxygen when petroleum combustion takes place under high temperatures and/or pressure) and nitrogen dioxide (NO₂) (a reddish-brown irritating gas formed by the combination of nitric oxide with oxygen). Due to the role they play as ozone precursors, oxides of nitrogen are one of the two criteria pollutants subject to federal ozone requirements.

Sources. High combustion temperatures cause nitrogen and oxygen to combine and form nitric oxide. Further reaction produces additional oxides of nitrogen. Combustion in motor vehicle engines, power plants, refineries and other industrial operations are the primary sources in the region. Ships, railroads and aircraft are other significant emitters.

Effects. Oxides of nitrogen are direct participants in photochemical smog reactions. The emitted compound, nitric oxide, combines with oxygen in the atmosphere in the presence of sunlight, to form nitrogen dioxide and ozone. Nitrogen dioxide, the most significant of these pollutants, can color the atmosphere at concentrations as low as 0.5 ppm on days of 21 0-mile visibility. NO₂ is an important air pollutant in the region because it is a primary receptor of ultraviolet light. The latter initiates photochemical reactions, helping to form ozone and/or particulate nitrate. It will also react in the air to form nitrate particulates.

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Sulfur Dioxide (SO₂)

Characteristics. SO₂ is a colorless, pungent, irritating gas formed primarily by the combustion of sulfur-containing fossil fuels. In humid atmospheres, SO₂ can form sulfur trioxide and sulfuric acid mist, with some of the latter eventually reacting to produce sulfate particulates.

Sources. This contaminant is the natural combustion product of sulfur or sulfur-containing fuels. Fuel combustion is the major source, while chemical plants, sulfur recovery plants and metal processing are minor contributors.

Effects. At sufficiently high concentrations, sulfur dioxide irritates the upper respiratory tract. At lower concentrations, when in conjunction with particulates, SO₂ appears able to do still greater harm by injuring lung tissues. Sulfur oxides, in combination with moisture and oxygen, can yellow the leaves of plants, dissolve marble and eat away iron and steel. Sulfur oxides can also react to form sulfates, which reduce visibility.

Particulates (Total Suspended Particles and PM₁₀)

Characteristics. Atmospheric particulates are made up of finely divided solids or liquids, such as soot, dust, aerosols, fumes and mists. About 90 percent by weight of the emitted particles are larger than 10 microns in diameter, but about 10 percent by weight, or 90 percent of the total *number* of particulates, are less than 5 microns in diameter. The aerosols formed in the atmosphere, primarily sulfate and nitrate, are usually smaller than 1 micron. In areas close to major sources, particulate concentrations are generally higher in the winter, when more fuel is burned for heating and meteorological conditions favor the build-up of directly-emitted contaminants. However, in areas remote from major sources and subject to photochemical smog (ozone), particulate concentrations can be higher during summer months because the presence of ozone increases the potential for SO₂ and NO₂ to convert to sulfate and nitrate particulates.

Sources. Particulate matter consists of particles in the atmosphere resulting from many kinds of dust and fume-producing industrial and agricultural operations, from combustion and from atmospheric photochemical reactions. Re-entrained road dust from vehicles is a significant source of particulates. Natural activities also put particulates into the atmosphere; wind-raised dust and ocean spray are two such sources of particulates.

Effects. In the respiratory tract, very small particles of certain substances may produce injury by themselves, or may contain absorbed gases that are injurious. Suspended in the air, particulates less than 5 microns in diameter can both scatter and absorb sunlight, producing haze and reducing visibility. They can also cause a wide range of damage to materials.

Diesel Particulate Matter (DPM)

Characteristics. Diesel particulate matter is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is commonly found throughout the environment. Diesel exhaust is composed of two phases, either gas or particle, and both phases contribute to the risk. The gas phase is composed of many of the urban hazardous air pollutants, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde and polycyclic aromatic hydrocarbons. Diesel exhaust has a distinct odor, which is primarily a result of hydrocarbons and aldehydes contained in diesel fuel. The particle phase also has many different types of particles that can be classified by size or composition. The size of diesel particulates that are of greatest health concern are those that are in the categories of fine and ultra-fine particles. The composition of these fine and ultra-fine particles may be composed of elemental carbon with adsorbed compounds such as organic compounds, sulfate, nitrate, metals and other trace elements.

Sources. Diesel exhaust is emitted from a broad range of diesel engines: the on-road diesel engines of trucks, buses and cars and the off-road diesel engines that include locomotives, marine vessels and heavy-duty equipment.

Effects. Acute exposure to diesel exhaust may cause irritation to the eyes, nose, throat and lungs and some neurological effects such as lightheadedness. Acute exposure may also elicit a cough or nausea as well as exacerbate asthma. Chronic exposure in experimental animal inhalation studies has shown a range of dose-dependent lung inflammation and cellular changes in the lung and there are also diesel exhaust

immunological effects. Based upon human and laboratory studies, there is considerable evidence that diesel exhaust is a likely carcinogen. Human epidemiological studies demonstrate an association between diesel exhaust exposure and increased lung cancer rates in occupational settings.

Hydrocarbons and Other Organic Gases (Total Hydrocarbons, CH₄NMHC (non methane), AHC, NHC)

Characteristics. Any of the vast family of compounds consisting of hydrogen and carbon in various combinations are known as hydrocarbons. Fossil fuels are included in this group. Many hydrocarbon compounds are major air pollutants, and those which can be classified as olefins or aromatics are highly photochemically reactive. Atmospheric hydrocarbon concentrations are generally higher in winter because the reactive hydrocarbons react more slowly in the winter and meteorological conditions are more favorable to their accumulating in the atmosphere to higher concentration before producing photochemical oxidants. Due to the role they play as ozone precursors, reactive hydrocarbons are one of the two criteria pollutants subject to federal ozone requirements.

Sources. Motor vehicles are a major source of anthropogenic hydrocarbons (AHC) in the basin. Other sources include evaporation of organic solvents and petroleum refining and marketing operations. Trees are the principal emitters of biogenic or natural hydrocarbons (NHC).

Effects. Certain hydrocarbons can damage plants by inhibiting growth and causing flowers and leaves to fall. Levels of hydrocarbons currently measured in urban areas are not known to cause adverse effects in humans. However, certain members of this contaminant group are important components in the reactions which produce photochemical oxidants.

Lead (Pb)

Characteristics. Lead is an elemental heavy metal found naturally in the environment as well as in manufactured products. Lead can be released directly into the air, as suspended particles. It is soft, malleable and melts at a relatively low temperature. When freshly cut, it has a bluish-white tint; it tarnishes to a dull gray upon exposure to air. Lead has several properties that make it useful: high density, low melting point, ductility and relative inertness to oxidation. Combined with relative abundance and low cost, these factors resulted in the extensive worldwide use of lead. Lead is persistent in the environment and accumulates in soils and sediments through deposition from air sources, direct discharge of waste streams to water bodies, mining and erosion.

Sources. The major sources of lead emissions historically have been mobile and industrial sources. As a result of phasing out leaded gasoline, metal processing currently is the primary source of Pb emissions. The highest level of lead in the air is generally found near lead smelters. Other stationary sources include waste incinerators, utilities and lead-acid battery manufacturers.

Effects. Humans may be exposed to lead from air pollution directly, through inhalation, or through the incidental ingestion of lead that has settled out from the air onto soil or dust. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems and the cardiovascular system. Lead exposure also affects the oxygen carrying capacity of the blood. The lead effects most commonly encountered in current populations are neurological effects in children and cardiovascular effects (e.g., high blood pressure and heart disease) in adults. Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits and lowered IQ. Elevated lead in the environment can result in decreased growth and reproductive rates in plants and animals and neurological effects in vertebrates.

Source: U.S. EPA 2021a

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Ozone is the main pollutant of concern for the NCCAB; ROGs and NO_x join in photochemical reactions that produce ozone and thus are also of concern. The region is “NO_x sensitive,” meaning that ozone formation from local emissions is limited by the availability of NO_x as opposed to the availability of ROGs (MBARD 2017). The primary sources of ROGs within the AMBAG region are on- and off-road motor vehicles, petroleum production and marketing, solvent evaporation and prescribed burning. The primary sources of NO_x are on- and off-road motor vehicles and stationary sources.

The MBARD forecasted 2020 daily emissions in the 2012-2015 Air Quality Management Plan (AQMP) and are included in Table 4.3-2. These are forecasted rather than reported emissions.

Table 4.3-2 Forecasted 2020 Daily Emissions

Emission Type	Total Forecasted Emissions (tons)	Area Wide Percentage	Mobile Source Percentage	Stationary Source Percentage
ROG	57	64%	18%	17%
NO _x	32	13%	50%	37%

Source: MBARD 2017

The most recent reported emissions, 2015, are shown in Table 4.3-3.

Table 4.3-3 Reported 2015 Daily Emissions

Emission Type	Total Forecasted Emissions (tons)	Area Wide Percentage	Mobile Source Percentage	Stationary Source Percentage
ROG	59	60%	23%	17%
NO _x	39	11%	60%	21%
PM ₁₀ ¹	47	86%	11%	3%

¹ Daily emissions of PM₁₀ were from 2020

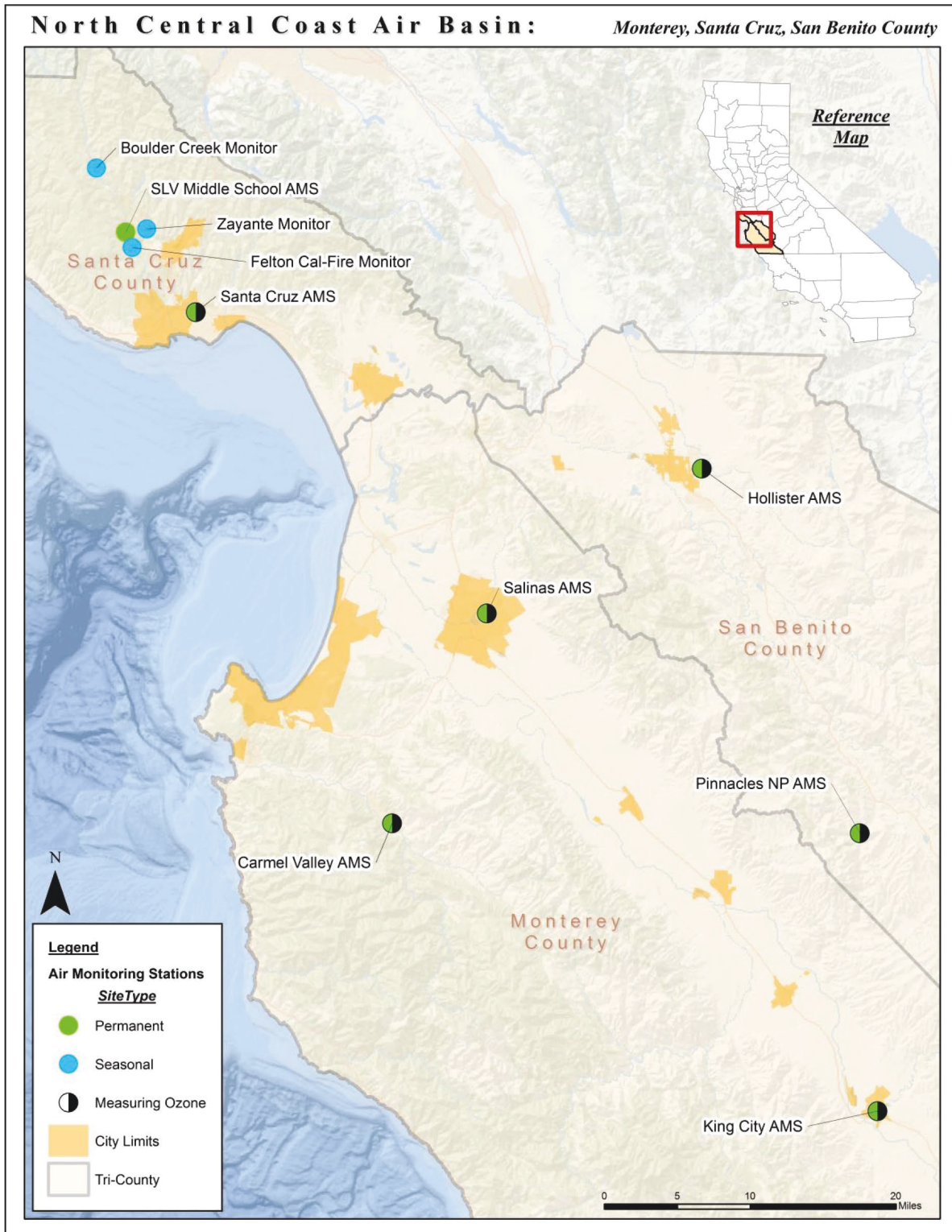
Source: MBARD 2017; CARB 2018

The highest particulate levels and most frequent violations occur in the coastal corridor, which experiences fugitive dust from various geological and man-made sources. Nearly three quarters of all NCCAB exceedances occurred at these coastal sites, where sea salt is often the main factor causing exceedance (MBARD 2005).

c. Current Ambient Air Quality

MBARD is required to monitor air pollutant levels to assure that ambient air quality standards are met and to develop strategies to meet these standards if they are not met. Monitoring of ambient air pollutant concentrations is conducted by CARB and MBARD and industry. Depending on whether measured air pollutant concentrations fall within or exceed standards, the local air basin is classified as being in “attainment” or “non-attainment”. Ambient air quality is currently monitored at seven permanent stations in the NCCAB, which are shown in Figure 4.3-1.

Figure 4.3-1 NCCAB Air Quality Monitoring Stations (2017)



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The NCCAB is currently in non-attainment of the State PM₁₀ standard and eight-hour ozone standard. The NCCAB is in attainment or unclassifiable for all other State standards and all federal standards (MBARD 2017). Table 4.3-4 presents a 10-year summary of the days that the NCCAB exceeded the ozone CAAQS and NAAQS and the PM₁₀ CAAQS and the NAAQS. Table 4.3-5 presents the number of days Monterey, San Benito, and Santa Cruz County exceeded the 8-hour ozone CAAQS. Due to insufficient and limited data for PM₁₀ measurements, a table is not provided.

Table 4.3-4 Ten-Year NCCAB Air Quality Summary (2010-2019) for Days Over the Ozone and PM₁₀ NAAQS and CAAQS

Year	Ozone 1-Hour CAAQS	Ozone 8-Hour NAAQS	Ozone 8-Hour CAAQS	PM ₁₀ 24 Hour NAAQS	PM ₁₀ 24 Hour CAAQS
2010	0	6	6	0	2
2011	0	2	2	0	*
2012	0	8	9	0	*
2013	1	5	5	0	*
2014	0	3	3	0	*
2015	0	0	0	0	*
2016	1	5	5	0	*
2017	0	1	1	0	*
2018	0	1	1	0	*
2019	0	0	0	0	*

CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; PM₁₀ = particulate matter with a diameter of 10 microns or less

* Insufficient data available to determine the value

Note: No measurement data available post-2019

Source: CARB 2021b

Table 4.3-5 Days Exceeding the 8-Hour Ozone CAAQS (2010-2019)

Station by County	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Monterey County	0	0	0	0	0	0	0	0	0	0
San Benito County	6	2	9	5	4	0	5	1	1	0
Santa Cruz County	0	0	1	0	0	0	0	1	0	0

Note: No measurement data available post-2019

Source: CARB 2021b

In addition, emission inventory and forecast data is provided below for ROG, NO_x, and PM₁₀. Data from Pinnacles National Park Monitoring Station is shown since this is the NCCAB's peak "hot spot" station with the highest measured ozone concentrations (MBARD 2017). Table 4.3-6 and Table 4.3-7 show the emissions inventory and forecast for ROG, NO_x and PM₁₀ within the NCCAB through year 2035.¹ Basin-wide historical data on the number of 1- and 8-hour State and 8-hour federal exceedances are provided in Figure 4.3-2.

Table 4.3-6 Emissions Inventory and Forecasts for ROG and NO_x

Tons/Day	2000	2005	2010	2015	2020	2025	2030	2035
ROG	70.97	64.11	60.48	59.16	56.63	55.67	55.59	55.80
NO _x	80.49	60.53	45.58	38.81	31.61	27.18	25.62	25.34

Notes: Emissions include all sources (i.e., mobile, area-wide, and stationary sources). The 2012-2015 AQMP only forecasts emission inventories out till 2035. Thus, there are no future forecasts beyond 2035 available.

Source: MBARD 2017

Table 4.3-7 Emissions Inventory and Forecasts for PM₁₀

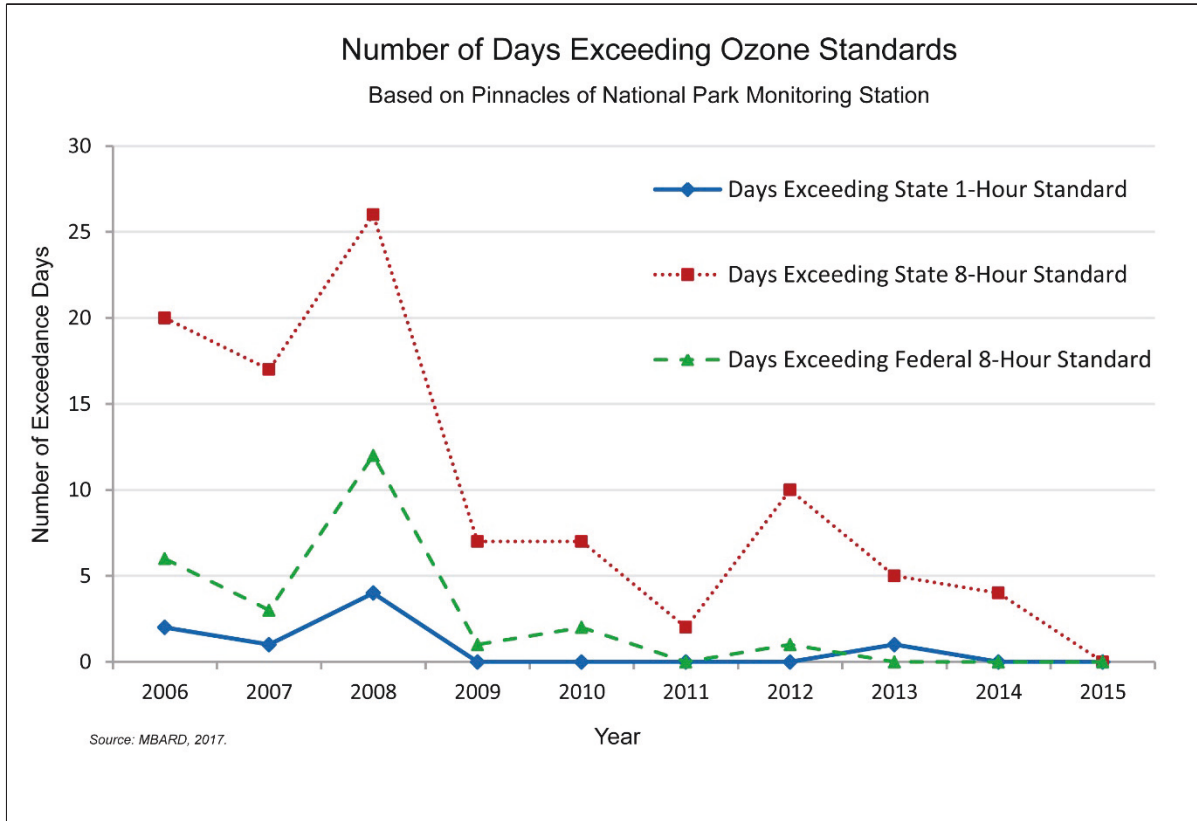
Tons/Day	2000	2005	2010	2015	2020	2025	2030	2035
PM ₁₀ (All Sources)	43.8	47.6	41.8	44.4	47.7	50.2	52.9	55.4
PM ₁₀ (Mobile Sources)	2.8	4.2	2.7	2.0	1.8	1.8	1.8	1.9

Notes: Emission Inventory and forecasts include all sources except natural (non-anthropogenic) sources. The CARB California Emissions Project Analysis Model has no forecasting data available beyond 2035.

Source: CARB 2018

¹ The planning inventories in the MBARD's 2012-2015 AQMP only forecasts emissions out to 2035. The CARB California Emissions Project Analysis Model v 1.05 also forecasts out to 2035. Thus, no forecast data is available for the last 10 years of the planning horizon for the 2045 MTP/SCS.

Figure 4.3-2 Historical NCCAB Ozone Exceedances (2016)²



d. Toxic Air Contaminants

A toxic air contaminant (TAC) is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health. TACs may result in long-term health effects such as cancer, birth defects, neurological damage, asthma, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation, runny nose, throat pain, and headaches. TACs are considered either carcinogenic or non-carcinogenic based on the nature of the health effects associated with exposure. For carcinogenic TACs, potential health impacts are evaluated in terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Non-carcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis (MBARD 2008).

TACs include both organic and inorganic chemical substances. One of the main sources of TACs in California is diesel engines that emit exhaust containing solid material known as diesel particulate matter (DPM; CARB 2021a); however, TACs may be emitted from a variety of

² Per the MBARD's 2012-2015 AQMP, "The data from the Pinnacles National Park monitor are also used by both ARB and EPA to designate the NCCAB as attainment or non-attainment of the ozone standards."

common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities.

CARB reports that diesel particulate matter represents about 70 percent of the potential cancer risk from vehicle travel on a typical urban freeway (CARB 2005). Residences and communities in proximity to TAC sources are disproportionately impacted. To protect people from TACs and reduce exposure, CARB recommends avoiding siting new sensitive land uses, such as residences, schools, daycare centers, playgrounds, or medical facilities, within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. Additional non-cancer health risk attributable to proximity to freeways was seen within 1,000 feet and was strongest within 300 feet. California freeway studies show about a 70 percent drop-off in particulate pollution levels at 500 feet (CARB 2005).

Diesel Particulate Matter

Particulates in diesel emissions, referred to as diesel particulate matter (DPM), are very small and readily respirable. More than 90 percent of DPM is less than one micron in diameter (about 1/70th the diameter of a human hair) and thus is a subset of PM_{2.5}. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs (CARB 2021a). The particles have hundreds of chemicals adsorbed onto their surfaces, including many known or suspected mutagens and carcinogens. The California Office of Environmental Health Hazard Assessment (OEHHA) completed a comprehensive health assessment of diesel exhaust in 1998, which formed the basis for CARB to formally identify the particles in diesel exhaust as a TAC. In California, DPM has a significant impact since it is estimated that 70 percent of total known cancer risk related to air toxics is attributable to DPM. According to CARB, DPM is estimated to increase statewide cancer risk by 520 cancers per million residents exposed over a lifetime (CARB 2021a).

DPM can also be responsible for elevated localized exposures (“hotspots”). Risk characterization scenarios conducted by CARB have determined the potential cancer risk resulting from proximity to DPM sources, such as school buses and high-volume freeways. California freeway studies show about a 70% drop off in particulate pollution levels at 500 feet from freeways and high-traffic roads (CARB 2005).

Besides DPM, several other pollutants are emitted by vehicle exhaust are a public health concern. U.S. EPA has identified five pollutants of highest priority in addition to DPM: acrolein, acetaldehyde, formaldehyde, benzene, and 1,3-butadiene. The latter five pollutants are found in organic gases emitted by vehicles.

4.3.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

Clean Air Act

The federal Clean Air Act (CAA) governs air quality in the United States. At the federal level, the U.S. EPA administers the CAA. CARB administers the CAA at the State level and the local air districts administers the CAA at the regional and local levels. In addition to being subject to federal requirements, air quality in California is also governed by more stringent regulations under the California CAA, which is administered by the CARB at the State level and the air districts at the regional and local levels. The MBARD regulates air quality in the AMBAG region, which includes Monterey, San Benito, and Santa Cruz counties. Table 4.3-8 summarizes the current federal and State air quality standards.

The U.S. EPA is responsible for enforcing the federal CAA, which defines non-attainment areas as geographic regions designated as not meeting one or more of the national ambient air quality standards (NAAQS) that are required under the 1977 CAA and subsequent amendments. The federal CAA requires that a State Implementation Plan (SIP) be prepared for each non-attainment area and a maintenance plan be prepared for each former non-attainment area that subsequently demonstrated compliance with the standards. A SIP is a compilation of a state's air quality control plans and rules, approved by the U.S. EPA. Section 176(c) of the CAA provides that federal agencies cannot engage, support, or provide financial assistance for licensing, permitting, or approving any project unless the project conforms to the applicable SIP. The state and the U.S. EPA's goals are to eliminate or reduce the severity and number of violations of the NAAQS and to achieve expeditious attainment of these standards.

Table 4.3-8 Current Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standards	California Standards
Ozone	1-Hour	–	0.09 ppm
	8-Hour	0.070 ppm	0.070 ppm
Carbon Monoxide	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm
Nitrogen Dioxide	Annual	0.053 ppm	0.030 ppm
	1-Hour	0.100 ppm	0.18 ppm
Sulfur Dioxide	Annual	–	–
	24-Hour	–	0.04 ppm
	1-Hour	0.075 ppm	0.25 ppm
PM ₁₀	Annual	–	20 µg/m ³
	24-Hour	150 µg/m ³	50 µg/m ³
PM _{2.5}	Annual	12 µg/m ³	12 µg/m ³
	24-Hour	35 µg/m ³	–
Lead	30-Day Average	–	1.5 µg/m ³
	3-Month Average	0.15 µg/m ³	–
Visibility Reducing Particles	8-Hour	–	Extinction of 0.23 per kilometer*
Sulfates	24-Hour	–	25 µg/m ³
Hydrogen Sulfide	1-Hour	–	0.03 ppm (42 µg/m ³)
Vinyl Chloride	24-Hour	–	0.01 ppm
			0.02 (26 µg/m ³)

ppm = parts per million; µg/m³ = micrograms per cubic meter

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

Source: CARB 2016

1990 Amendments to the Clean Air Act

The 1990 amendments to the CAA included a provision to address air toxics. Under Title III of the CAA, the U.S. EPA establishes and enforces National Emission Standards for Hazardous Air Pollutants, which are nationally uniform standards oriented toward controlling particular hazardous air pollutants. Section 112(b) of the CAA identifies 189 “Air Toxics” (hazardous air pollutants), directs U.S. EPA to identify sources of the 189 pollutants, and establishes a 10-year time period for EPA to issue technology-based emissions standards for each source category. Title III of the CAA provides for a second phase under which U.S. EPA is to assess residual risk after the implementation of the first phase of standards and impose new standards, when appropriate, to protect public health.

Safer Affordable Fuel-Efficient Vehicles Rule

In August 2018, the U.S. EPA and NHTSA issued a proposed ruling to roll back some of the fuel economy and GHG standards for medium- and heavy-duty trucks. The new ruling proposed by the U.S. EPA and NHTSA, the Safer Affordable Fuel-Efficient (SAFE) Vehicle Rules, would replace the CAFE standards set for model year 2022-2025 passenger car and light trucks, while the 2021 model year vehicles will maintain the CAFE standards. The ruling is split into two parts.

Part One, “One National Program” (84 FR 51310), revokes a waiver granted by U.S. EPA to the State of California under Section 209 of the CAA to enforce more stringent emission standards for motor vehicles than those required by U.S. EPA for the explicit purpose of GHG reduction, and indirectly, criteria air pollutants and ozone precursor emission reduction. This revocation became effective on November 26, 2019, potentially restricting the ability of CARB to enforce more stringent GHG emission standards for new vehicles and set zero emission vehicle mandates in California.

Part Two addresses CAFE standards for passenger cars and light trucks for model years 2021 to 2026. This rulemaking proposes new CAFE standards for model years 2022 through 2026 and would amend existing CAFE standards for model year 2021. The proposal would retain the model year 2020 standards (specifically, the footprint target curves for passenger cars and light trucks) through model year 2026. The proposal addressing CAFE standards was jointly developed by NHTSA and U.S. EPA, with U.S. EPA simultaneously proposing tailpipe CO₂ standards for the same vehicles covered by the same model years.

In September 2019, U.S. EPA and the National Highway Traffic Safety Administration issued the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program, which revoked California’s authority to set its own GHG emissions standards and zero-emission vehicle mandates in California (84 Federal Register 51310). In April 2020, the federal agencies issued the SAFE Vehicles Rule Part Two for Model Years 2021–2026 Passenger Cars and Light Trucks, which relaxed federal GHG emissions and fuel economy standards (85 Federal Register 24174). At the time of preparation of this EIR, the implications of the SAFE Rule on California’s future emissions are uncertain. On February 8, 2021, the incoming federal administration issued a stay in regard to the legal challenges by California and other states to the revocation of California’s waiver (JDSupra 2021a).

As of May 11, 2021, there is currently a proposed rule to withdraw Part One of the SAFE Rule (Docket No. NHTSA-2021-0030).

b. State Laws, Regulations, and Policies

AB 32

Assembly Bill (AB) 32, also known as the Global Warming Solutions Act of 2006 (Nunez), expanded CARB’s role to development and oversight of California’s main GHG reduction programs. These include cap and trade, the Low Carbon Fuel Standard, and the zero-emission vehicle programs. With the passage of additional laws (such as Senate Bill [SB] 32 in 2016 and

AB 398 in 2017), CARB continues to map out how these programs and others can help California reach its next statutory target: reducing GHG emissions an additional 40 percent below 1990 levels by 2030. Reductions in GHG emissions are tied to improvements in air quality.

California Clean Air Act

The California Clean Air Act (CCAA) was enacted in 1988 (California Health & Safety Code Section 39000 et seq.) and amended in 1992. The CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. Air basins or areas that exceed the CAAQS are designated non-attainment until compliance is disclosed in an attainment plan. In California, CARB is responsible for meeting the State requirements of the federal CAA, administering the California CAA, and establishing the California ambient air quality standards (CAAQS). The California CAA, as amended in 1992, requires all air districts in the State to endeavor to achieve and maintain the CAAQS. CARB oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level.

Senate Bill 656 (Chapter 738, Statutes of 2003)

In 2003, the California Legislature enacted SB 656 (Chapter 738, Statutes of 2003), codified as Health and Safety Code Section 39614, to reduce public exposure to PM₁₀ and PM_{2.5}. SB 656 required CARB, in consultation with local air pollution control and air quality management districts (air districts), to develop and adopt, by January 1, 2005, a list of the most readily available, feasible, and cost-effective control measures that could be employed by CARB and the air districts to reduce PM₁₀ and PM_{2.5} (collectively referred to as PM). The legislation established a process for achieving near-term reductions in PM throughout California ahead of federally required deadlines for PM_{2.5} and provided new direction on PM reductions in those areas not subject to federal requirements for PM. Measures adopted as part of SB 656 complement and support those required for federal PM_{2.5} attainment plans, as well as for State ozone plans. This ensures continuing focus on PM reduction and progress toward attaining California's more health protective standards. This list of air district control measures was adopted by CARB on November 18, 2004. The MBARD also complied with this legislation; staff developed a Particulate Matter Implementation Schedule that was adopted in December 2005 (MBARD 2005).

In response to SB 656, MBARD identified several control measures aimed at reducing PM₁₀ and PM_{2.5} emissions in their *2005 Report on Attainment of the California Particulate Matter Standards in the Monterey Bay Region* (i.e., 2005 Particulate Matter Plan). The most applicable measures to mobile emissions listed in Table 4.3-9, specifically to re-entrained road dust, are D-1 and D-2.

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Table 4.3-9 MBARD Fugitive Dust Control Measures

No.	Measure Description	Target Pollutant	Measure Type	Implementation Date
D-1	Unpaved Roads – Best Management Practices (BMPs)	Fugitive Dust	Educational and Grants	December 2006
D-2	Unpaved Roads – Speed Limit	Fugitive Dust	Educational or Regulatory	December 2006
D-3	Agricultural Tilling/Land Planning	Fugitive Dust	Policy	December 2006
D-4	Sea Salt Exemption	None	Regulatory	March 2006
D-5a	Mineral Processing	Fugitive Dust	Contingency Measure	June 2007
D-5b	Cement Manufacturing	Fugitive Dust	Regulatory	Implemented with Mineral Processing measure
D-6a	Integrate Air Quality Management Plan for Ozone	Secondary PM	Regulatory	June 2007
D-6b	Integrate Smoke Management Program	Smoke	Regulatory	June 2007
D-6c	Integrate Environmental Review Under CEQA	Fugitive Dust	Regulatory	October 2006
D-6d	Integrate Air Toxic Control Measure for Naturally Occurring Asbestos	Fugitive Dust	Regulatory	June 2007
D-6e	Integrate Expanding Moyer Program (AB 923)	Diesel Exhaust	Grants	June 2006
D-6f	Integrate Department of Motor Vehicles Renewal Fees (AB 2766)	PM ₁₀	Educational and Grants	June 2006
D-7	Air Toxic Control Measure for Agricultural Irrigation Pumps	Fugitive Dust	Grants	June 2007

*All control measures adopted on December 14, 2005.

Source: MBARD 2005

Toxic Air Contaminant Identification and Control Act of 1983

The Toxic Air Contaminant Identification and Control Act (AB 1807) created California's program to reduce exposure to air toxics. The program involves a two-step process: risk identification and risk management. In the risk identification step, and upon CARB's request, the Office of Environmental Health Hazard Assessment evaluates the health effects of substances other than pesticides and their pesticidal uses. Substances with the potential to be emitted or that are currently being emitted into the ambient air may be identified as a TAC. In the risk management step, once a substance is identified as a TAC, and with the

participation of local air districts, industry, and interested public, CARB prepares a report that outlines the need and degree to regulate the TAC through a control measure.

Assembly Bill 2588: Air Toxics “Hot Spots” Information and Assessment Act of 1987

The Air Toxics “Hot Spots” Information and Assessment Act (Assembly Bill 2588) was enacted in 1987 to require stationary sources to report the types and quantities of substances identified as having a localized health risk. This act aims to ascertain health risks, notify nearby residents of significant risks and to reduce significant risks to acceptable levels. The California Office of Environmental Health Hazard Assessment (OEHHA) is the lead agency for the assessment of health risks posed by environmental contaminants. OEHHA, which is an office within the California Environmental Protection Agency (CalEPA), aims to protect human health and the environment through scientific evaluation of risks posed by hazardous substances. In addition, OEHHA develops health-protective exposure levels for contaminants in air, water and soil as guidance for regulatory agencies and the public. These include public health goals for contaminants in drinking water and both cancer potency factors and non-cancer reference exposure levels for the Air Toxics Hot Spots Program.

Executive Order N-79-20

In 2021, Governor Newsom signed Executive Order N-79-20 which calls for the elimination of new internal combustion passenger vehicles by 2035. The Executive Order establishes a target for the transportation sector that helps put the state on a path to carbon neutrality by 2045. Furthermore, the Executive Order provides momentum for providers of charging and refueling infrastructure, electric utilities, and others to plan for and support the increasing consumer demand for these vehicles (CARB 2021b).

CARB Air Quality and Land Use Handbook and 2017 Technical Advisory

CARB’s *Air Quality and Land Use Handbook: A Community Health Perspective* recommends that local agencies avoid siting new, sensitive land uses within specific distances of potential sources of TACs, such as freeways and high-traffic roads, distribution centers, railroads, and ports (CARB 2005). Specifically, CARB recommends that local agencies avoid siting new, sensitive land uses within 500 feet of a freeway. The primary concern is the effect of diesel exhaust particulate on sensitive uses.

CARB *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways* technical advisory (2017) identifies effective strategies that planners and other land use decision-makers can implement locally and in the near-term to reduce exposure to near-roadway pollution from increased infill development while also protecting public health. These strategies complement the state’s many efforts to reduce air pollution from all sources, including cars and trucks.

Diesel Risk Reduction Program

In August 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as TACs, based on data linking diesel PM emissions to increased risks of lung cancer and

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respiratory disease. Following the identification process, CARB was required to determine if there was a need for further control, which led to creation of the Diesel Advisory Committee to assist in the development of a risk management guidance document and risk reduction plan. In September 2000, CARB adopted the Diesel Risk Reduction Plan, which recommends control measures to reduce the risks associated with diesel PM and achieve a goal of 75 percent diesel PM reduction by 2010 and 85 percent by 2020. Specific Statewide regulations designed to further reduce diesel PM emissions from diesel-fueled engines and vehicles are continuing to be evaluated and developed. The goal of these regulations is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce diesel PM emissions.

Airborne Toxic Control Measures

Under the California Health and Safety Code, Division 26 (Air Resources), CARB is authorized to adopt regulations to protect public health and the environment through the reduction of TACs and other air pollutants with adverse health effects. CARB has promulgated several mobile and stationary source airborne toxic control measures (ATCMs) pursuant to this authority. For instance, effective as of July 2003, CARB approved an ATCM that limits school bus idling and idling at or near schools to only when necessary for safety or operational concerns (13 CCR Chapter 10, Section 2480). This ATCM is intended to reduce diesel PM and other TACs and air pollutants from heavy-duty motor vehicle exhaust. It applies to school buses, transit buses, school activity buses, youth buses, general public paratransit vehicles, and other commercial motor vehicles. This ATCM focuses on reducing public exposure to diesel PM and other TACs, particularly for children riding in and playing near school buses and other commercial motor vehicles, who are disproportionately exposed to pollutants from these sources. In addition, effective February 2005, CARB approved an ATCM to limit the idling of diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds, regardless of the state or country in which the vehicle is registered (13 CCR Chapter 10, Section 2485).

Drayage Truck Regulation

CARB established the Drayage Truck Regulation as part of its ongoing efforts to reduce PM and NOx emissions from diesel-fueled engines and improve air quality associated with goods movement. The purpose of this regulation is to reduce emissions and public exposure to diesel PM, NOx, and other air contaminants by setting emission standards for in-use, heavy-duty diesel-fueled vehicles.

Starting January 1, 2023, drayage trucks will be subject to the provisions of Title 13, CCR, Section 2025, the Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and Other Criteria Pollutants from In-Use Heavy Duty Diesel-Fueled Vehicles, which requires that all not otherwise exempt in-use on-road diesel vehicles, including drayage trucks, have a 2010 model year emissions equivalent engine by January 1, 2023 (Article 4.5, Chapter 1, Division 3, Title 13, Section 2027, CCR).

Proposition 1B: Goods Movement Emission Reduction Program

The \$1 billion Proposition 1B Goods Movement Emission Reduction Program is a partnership between CARB and local agencies, air districts, and seaports to quickly reduce air pollution emissions and health risk from freight movement along California's trade corridors. Local agencies apply to CARB for funding. Then those agencies offer financial incentives to owners of equipment used in freight movement to upgrade to cleaner technologies. Projects funded under this program must achieve early or extra emission reductions not otherwise required by law or regulation.

c. Regional Laws, Regulations, and Policies

Monterey Bay Air Resources District

MBARD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained in Monterey, San Benito, and Santa Cruz counties. Responsibilities of MBARD include, but are not limited to: preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions and implementing programs and regulations required by the Federal CAA and the California CAA. Since the passage of the 1990 Federal CAA Amendments, eight plan updates have been adopted by MBARD. The most recent regional plan is MBARD's *2012-2015 Air Quality Management Plan* (AQMP) (MBARD 2017).

The AQMP was prepared to ensure continued progress towards clean air and compliance with State and federal requirements. This AQMP shows how the State AAQS for ozone would be met in the NCCAB. According to the emission reduction strategy in the AQMP, MBARD's priority is to continue to pursue reduction of ozone precursor emissions from mobile sources. Although the 2008 AQMP detailed transportation control measures (TCMs), these measures have not been listed in more recent updates of AMBAG's Metropolitan Transportation Improvement Program (MTIP) because the region has come into attainment of all NAAQS (MBARD 2017).

MBARD continues to foster and support programs that reduce ozone precursor emissions, implement rules when necessary, and continue to maintain robust permitting and enforcement programs. Mobile source emission reductions are primarily achieved through the MBARD's incentive programs. To support reducing on-road vehicle emissions, the MBARD's AB 2766 grant program focuses funding on direct emission reduction projects. These projects include roundabout design and construction as well as the application of adaptive traffic signal control at intersections. Since 2016, MBARD has implemented the Monterey Bay Electric Vehicle Incentive Program, which offers cash rebates to the public for purchasing or leasing battery electric and plug-in hybrid electric vehicles. In addition, the Plug-in Monterey Bay Electric Vehicle Charge Station Infrastructure program was implemented in January 2017 to establish DC fast charge and Level 2 charge station multi-

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centers. Furthermore, MBARD is also evaluating whether to implement a voluntary accelerated vehicle retirement (VAVR) and/or voluntary repair of vehicles (VRV) to reduce light-duty vehicle emissions in accordance with the Carl Moyer Program, which provides funding to encourage replacement of older heavy-duty motors/engines in the AMBAG region. Each of these reduction projects would reduce emissions in the region by encouraging cleaner vehicles.

In 2005, MBARD adopted the 2005 Particulate Matter Plan to fulfill the requirements of Senate Bill 656, which was approved by the California Legislature in 2003 with the objective of reducing public exposure to particulate matter. In 2011, CARB approved the latest regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles (Title 13 Section 2205). The regulation requires affected vehicles to meet specific performance requirements between 2012 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or the equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle. With implementation of CARB's Risk Reduction Plan, DPM concentrations are expected to be reduced by 85 percent in 2020 from the estimated year-2000 level (CARB 2000).

MBARD Rule 402, *Nuisances*, prohibits the discharge of air contaminants or other material that would cause injury, detriment, nuisance, or annoyance to any considerable number of persons. Nuisances can include offensive odors. If offensive odors are present and become a nuisance, complaints can be filed by email or phone call with the MBARD, who will then investigate the source.

d. Local Laws, Regulations, and Policies

City and county general plans within the AMBAG area contain policies to protect air quality. Listed below are the policies from each county in the region applicable to air quality. Cities in the region have generally similar policies and examples are provided in more detail below.

Monterey County

The Monterey County General Plan (Monterey County 2010b) contains policies in the Conservation/Open Space Element that pertain to air quality as shown below.

- **Policy OS-10.1.** Land use policy and development decisions shall be consistent with the natural limitations of the County's air basins.
- **Policy OS-10.2.** Mass transit, bicycles, pedestrian modes of transportation and other transportation alternatives to automobiles shall be encouraged.
- **Policy OS-10.3.** Monterey County shall promote conservation of naturally vegetated and forested areas for their air purifying functions.
- **Policy OS-10.4.** Monterey County shall encourage concentrating industrial and commercial development in areas that are more easily served by public transit.
- **Policy OS-10.5.** Mixed land uses that reduce the need for vehicular travel shall be encouraged.

- **Policy OS-10.6.** The Monterey Bay Unified Air Pollution Control District's air pollution control strategies, air quality monitoring and enforcement activities shall be supported.
- **Policy OS-10.7.** Use of the best available technology for reducing air pollution emissions shall be encouraged.
- **Policy OS-10.8.** Air quality shall be protected from naturally occurring asbestos by requiring mitigation measures to control dust and emissions during construction, grading, quarrying, or surface mining operations. This policy shall not apply to Routine and Ongoing Agricultural Activities except as required by state and federal law.
- **Policy OS-10.9.** The County of Monterey shall require that future development implement applicable Monterey Bay Unified Air Pollution Control District control measures. Applicants for discretionary projects shall work with the Monterey Bay Unified Air Pollution Control District to incorporate feasible measures that assure that health-based standards for diesel particulate emissions are met. The County of Monterey will require that future construction operate and implement MBUAPCD [Monterey Bay Unified Air Pollution Control District, now MBARD] PM₁₀ control measures to ensure that construction-related PM₁₀ emissions do not exceed the MBUAPCD's daily threshold for PM₁₀. The County shall implement MBUAPCD measures to address off-road mobile source and heavy-duty equipment emissions as conditions of approval for future development to ensure that construction-related NO_x emissions from non-typical construction equipment do not exceed the MBUAPCD's daily threshold for NO_x.
- **Policy OS-10.14.** The County of Monterey shall require that construction contracts be given to those contractors who show evidence of the use of soot traps, ultra-low sulfur fuels and other diesel engine emissions upgrades that reduce PM₁₀ emissions to less than 50% of the statewide PM₁₀ emissions average for comparable equipment.

Cities within the County of Monterey contain similar policies. In the City of Monterey, the Conservation Element of the General Plan (2005) contains the following policies:

- **Policy c.1.** Reduce air pollution generated by motor vehicles by encouraging the use of public transit, carpooling, bicycles, and walking as alternatives. Policies to achieve these goals are found in the Circulation Element. Promote cooperation with local and state agencies to develop programs to reduce sources of air pollution.
- **Policy c.3.** Promote cooperation with local and state agencies to develop programs to reduce sources of air pollution.

Similarly, the City of Salinas contains policies in the Conservation/Open Space Element that support the County's effort (2002). Some of the policies include:

- **Policy COS-22.** To reduce dust and particulate matter levels, implement fugitive dust control measures such as:
 - Restrict outdoor storage of fine particulate matter;
 - Provide tree buffers between residential and agricultural uses;
 - Monitor construction and agricultural activities and emissions; and

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- Pave areas used for vehicular maneuvering
- **Policy COS-24.** Continue to cooperate with the District to implement the most recent Air Quality Management Plan to address regional motor vehicle emissions. In particular, coordinate with District and AMBAG, providing technical assistance and demographic data when available, during the development of future population projections by AMBAG and the District.

San Benito County

The San Benito County 2035 General Plan (County of San Benito 2015) contains policies in the Health and Safety Element that pertain to air quality as shown below.

- **Policy HS-5.1 – New Development.** The County shall use the CEQA process to ensure development projects incorporate feasible mitigation measures to reduce construction and operational air quality emissions and consult with the Monterey Bay Unified Air Pollution Control District early in the development review process.
- **Policy HS-5.2 – Sensitive Land Use Locations.** The County shall ensure adequate distances between sensitive land use and facilities or operations that may produce toxic or hazardous air pollutants or substantial odors.
- **Policy HS-5.3 – Early Coordination with the Air Quality Control District.** The County shall notify and coordinate with the Monterey Bay Unified Air Pollution Control District when industrial developments are proposed within the county to ensure applicants comply with applicable air quality regulations and incorporate design features and technologies to reduce air emissions.
- **Policy HS-5.4 – PM₁₀ Emissions from Construction.** The County shall require developers to reduce particulate matter emissions from construction (e.g., grading, excavation and demolition) consistent with standards established by the Monterey Bay Unified Air Pollution Control District.
- **Policy HS-5.5 – PM₁₀ Emissions from Industrial Facilities.** The County shall require industrial facilities to incorporate best management practices to reduce PM_{2.5} and PM₁₀ emissions consistent with standards established by the Monterey Bay Unified Air Pollution Control District.
- **Policy HS-5.6 – New Construction Mitigation.** The County shall work in coordination with the Monterey Bay Unified Air Pollution Control District to minimize air emissions from construction activities associated with proposed development.
- **Policy HS-5.10 – Vehicle Emissions Reductions.** The County shall study alternatives for improving circulation (e.g., roundabouts, one ways, etc.), when feasible, to reduce idling motor vehicle emissions.
- **Policy HS-5.12 – Air Quality Management Plans.** The County shall encourage regional planning agencies to consider the County's population projections during the preparation of future Air Quality Management Plans.

- **Policy HS-5.13 – Reduce Air Pollution from Wood Burning.** No permanently installed wood-burning devices shall be allowed in any new development, except when necessary for food preparation in a restaurant or other commercial establishment serving food.
- **Policy HS-5.14 – Notify Project Applicants of Air District Requirements.** The County shall work with the Air District to obtain materials to give to project applicants regarding relevant information about Air District requirements.

The City of Hollister within the County of San Benito contains similar policies that support the County's initiative. For example, the Natural Resources and Conservation Element in the City of Hollister's General Plan (2005) lists some of the following policies:

- **Policy NRC 2.2 – Air Quality Considerations in Land Use Planning.** To ensure excellent air quality, promote land use compatibility for new development by using buffering techniques such as landscaping, setbacks, and screening in areas where different land uses abut one another.
- **Policy NRC 2.3 – Air Quality Planning and Coordination.** Integrate air quality considerations with the land use and transportation processes by mitigating air quality impacts through land use design measures, such as encouraging project design that will foster walking and biking.

Santa Cruz County

The Santa Cruz County General Plan and Local Coastal Program (County of Santa Cruz 1994) contains policies in the Conservation and Open Space Element that pertain to air quality as shown below.

- **Policy 5.18.1 – New Development.** Ensure new development projects are consistent at a minimum with the Monterey Bay Unified Air Pollution Control District Air Quality Management Plan and review such projects for potential impact on air quality.
- **Policy 5.18.2 – Non-Attainment Pollutants.** Prohibit any net increase in emissions of non-attainment pollutants or their precursors from new or modified stationary sources which emit 25 tons per year or more of such pollutants.
- **Policy 5.18.3 – Air Quality Mitigations.** Require land use projects generating high levels of air pollutants (i.e., manufacturing facilities, hazardous waste handling operations) to incorporate air quality mitigations in their design.
- **Policy 5.18.5 – Sensitive Land Uses.** Locate air pollution sensitive land uses, including hospitals, schools and care facilities, away from major sources of air pollution such as manufacturing, extracting facilities.
- **Policy 5.18.6 – Plan for Transit Use.** Encourage commercial development and higher density residential development to be located in designated centers or other areas that can be easily served by transit.
- **Policy 5.18.7 – Alternatives to the Automobile.** Emphasize transit, bicycle and pedestrian modes of transportation rather than automobiles.

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- **Policy 5.18.8 – Encouraging Landscaping.** Maintain vegetated and forested areas, and encourage cultivation of street trees and yard trees for their contributions to improved air quality.
- **Policy 5.18.10 – Elimination of Ozone Depleting Chemicals.** Support and implement local actions to achieve the most rapid possible international, national, state and local elimination of the emission of ozone-depleting chemicals.

Cities within the County of Santa Cruz contain similar policies that support the County's initiative. The City of Santa Cruz's 2030 General Plan (2012) includes the following policies:

- **Policy HZ2.2.1.** Require future development projects to implement applicable Monterey Bay Unified Air Pollution Control District (MBUAPCD) control measure and/ or air quality mitigations in the design of new projects as set forth in the District's "CEQA Guidelines."
- **Policy HZ2.2.3.** Locate air pollution-sensitive land uses away from major sources of air pollution or require mitigation measures to protect residential and sensitive land uses from freeways, arterials, point source polluters, and hazardous material locations
- **Policy HZ2.2.4.** Encourage public education programs promoting reduced emissions from transportation-generated pollutants and area-wide sources.

In the City of Watsonville 2005 General Plan, policies to address air quality through design and transportation include (1994):

- **Policy 9.C.5 – Alternative Travel Modes.** In order to reduce automobile related pollution, the City shall plan for and encourage the use of transit, ridesharing, bicycles, and walking as alternatives to automobile travel, and the use of low emission and electric vehicles.
- **Policy 9.C.4 – Design Review.** The City shall require new development to include considerations for transit, Transportation Demand Management (TDM), and alternative travel modes in project designs including but not limited to transit stops, car and van pool preferred parking, and bicycle access and storage facilities.

4.3.3 Impact Analysis

a. Significance Thresholds and Methodology

Appendix G of the *State CEQA Guidelines* identifies the following general criteria for determining whether a project's impacts would have a significant impact on air quality. AMBAG has modified the language of the second criterion to provide specific quantities of criteria pollutants that would contribute to a significant impact based on MBARD emissions thresholds:

1. Conflict with or obstruct implementation of the applicable air quality plan;
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard:

- a. During construction, cause a violation of PM₁₀ AAQS at nearby or upwind of sensitive receptors, based on whether the project would:
 - i. Emit greater than 82 pounds (lbs)/day of PM₁₀ if located nearby or upwind of sensitive receptors³; or
 - ii. Use equipment that is not “typical construction equipment” as specified in Section 5.3 of the MBARD CEQA Guidelines.
 - b. During operation:
 - i. Generate direct (area source or stationary) plus indirect (operational or mobile) emissions of either ROG that exceed 137 lbs/day;
 - ii. Generate direct (area source or stationary) plus indirect (operational or mobile) emissions of either NO_x that exceed 137 lbs/day
 - iii. Generate on-site emissions of PM₁₀ exceeding 82 lbs/day;
 - iv. Generate direct emissions of CO exceeding 550 lbs/day; or
 - v. Generate direct emissions of SO_x exceeding 150 lbs/day.
 - vi. Cause or substantially contribute to a violation of a CO standard.
3. Expose sensitive receptors to substantial pollutant concentrations; or
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Short-Term Emissions Methodology

Emissions from construction activities represent temporary impacts that are typically short in duration, depending on the size, phasing, and type of project. Air quality impacts can nevertheless be acute during construction periods, resulting in significant localized impacts to air quality. Construction-related emissions are speculative at the MTP/SCS level because such emissions are dependent on the characteristics of individual development projects. However, because construction of the 2045 MTP/SCS would generate temporary criteria pollutant emissions, primarily due to the operation of construction equipment and truck trips, a qualitative analysis is provided.

Long-Term Emissions Methodology

The methodology for determining the significance of air quality impacts compares the year 2020 baseline conditions to the future MTP/SCS conditions in the year 2045, as required in *State CEQA Guidelines* Section 15126.2(a). See Section 3, *Environmental Setting*, for further details regarding the baseline year. For informational purposes, the analysis of air quality also includes a comparison between expected future conditions in 2045 with adoption of the MTP/SCS in addition to the expected future conditions in 2045 if no MTP/SCS were adopted (‘no project’ scenario). With respect to long-term impacts, the long-term impacts of the 2045 MTP/SCS to air quality will be considered significant if the plan results in mobile source

³ Projects which require minimal earthmoving on 8.1 or more acres per day or grading and excavation on 2.2 or more acres per day are likely to exceed this threshold

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emissions that significantly exceed the MBARD thresholds, as outlined above. In this case, the pollutants of primary concern are ozone precursors (NO_x and ROG) and fine particulate matter (PM₁₀) because these are the primary pollutants associated with vehicle transportation.

Air emissions from on road mobile sources were calculated using emission factors from CARB's Emission FACTors 2017 (EMFAC2017) model, which is the most recent U.S. EPA-approved model, and regional vehicle miles traveled (VMT) from AMBAG's Regional Travel Demand Model (RTDM). EMFAC emission factors are established by CARB and accommodate mobility assumptions (e.g., vehicle fleets, speed, delay times, average trip lengths, time of day and total travel time) provided by AMBAG's RTDM, which include socioeconomic growth projections based on AMBAG's 2022 Regional Growth Forecast (2022 RGF). Refer to "Modeling Methodology" in Appendix F of the 2045 MTP/SCS for additional methodology details.

Health Impacts

Short-term and long-term exposure to criteria pollutants and TACs may result in adverse health effects, based on the information presented in Table 4.3-1. As discussed in Table 4.3-1, these effects may include aggravated asthma, increases in respiratory symptoms like coughing and difficult or painful breathing, chronic bronchitis, decreased lung function, increased cancer risk, heart attack and premature death. The ambient air quality standards are health-based standards. Therefore, because MBARD thresholds and ambient air quality standards have been set at levels that protect public health, in this impact analysis, when the proposed MTP/SCS would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard, it would also contribute to these adverse health effects. It should also be noted that adverse health effects induced by regional criteria pollutant emissions generated by the project (such as ozone precursors) depend on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals), so it is not possible to meaningfully quantify the localized health effects of such regional pollutants.

b. Project Impacts and Mitigation Measures

The following section describes air quality impacts associated with the transportation projects and land use scenario included in the 2045 MTP/SCS. Table 4.3-14 summarizes some of the specific 2045 MTP/SCS transportation projects that could result in the types of air quality impacts discussed below. Due to the programmatic nature of the 2045 MTP/SCS, a precise, project level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2045 MTP/SCS could result in the impacts as described in the following section.

Threshold 1: Conflict with or obstruct implementation of the applicable air quality plan

Impact AQ-1 THE 2045 MTP/SCS WOULD NOT CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE AQMP. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Conflicts with or obstruction of the applicable air quality plan are typically determined by consistency with the population forecast or emissions forecast. The most recent air quality plan is MBARD's 2012-2015 AQMP, which includes emissions forecasts based on the socioeconomic assumptions for population, housing, and employment in AMBAG's 2014 Regional Growth Forecast (RGF). In the 2014 RGF, it was projected that the population would increase by 152,292 people and 64,400 jobs would be added from the years 2010 to 2035 (AMBAG 2014).

The 2045 MTP/SCS is based on the 2022 RGF, which includes analysis of the current economy and updated population forecasts to provide a more accurate assessment of future growth. The 2022 RGF forecasts that the population will grow by approximately 107,500 people and the region will add approximately 65,500 jobs between 2015 and 2045.

For a direct comparison to the 2014 RGF, the 2022 RGF estimates that between the years 2010 to 2035 the population would increase by 109,481 people and 117,445 jobs would be added. The 2022 RGF population forecast is lower than the 2014 RGF forecasts for the same timeline, but the job increase is higher due to rapid employment growth between the years 2015 to 2020. The 2022 RGF forecasts slightly lower population growth due to the slowing growth rates attributed to declining fertility, stalled improvements in life expectancy, and falling international migration. In the 2022 RGF, the 2020 population estimate was lower by 16,000 persons compared to prior forecast predictions. In addition, it is predicted that there will be a higher older age distribution with a larger portion of the population expected to be 65 years of age and older. Therefore, the population forecast from the 2022 RGF would be consistent with the AQMP because the 2022 RGF forecasts a lower population increase than the 2014 RGF. However, the policies and land use patterns facilitated by the 2045 MTP/SCS are projected to reduce emissions of ozone precursors below 2020 baseline levels, as discussed in Impact AQ-2 (see Table 4.3-10).

This decrease in emissions is due to the improved vehicle efficiency standards along with the proposed transportation improvements and land use projects envisioned by the 2045 MTP/SCS, which selectively increases residential and commercial land use capacity near high quality transit corridors. The 2045 MTP/SCS anticipates that 30 percent of the regional population would be located within half a mile of a high quality transit station, compared to 15 percent in the baseline conditions. To accommodate future growth in the region while reducing emissions, the strategy of the 2045 MTP/SCS is to increase density along transit corridors to encourage active and public transportation. Shifting a greater share of future growth to these transit corridors would improve circulation and multimodal connections (refer to Section 4.15, *Transportation*).

The 2045 MTP/SCS would not conflict with the population forecast in the AQMP and would reduce emissions of ozone precursors below 2020 baseline levels. Therefore, implementation

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of the 2045 MTP/SCS would not conflict with or obstruct implementation of the AQMP, and this impact would be less than significant.

Mitigation Measures

None required.

Threshold 2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment or attainment under an applicable federal or state ambient air quality standard

Impact AQ-2 CONSTRUCTION OF PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE 2045 MTP/SCS WOULD RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE IN PM₁₀ OR OZONE PRECURSOR EMISSIONS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Construction

There are three primary sources of short-term emissions that would be generated by construction of future transportation projects under the 2045 MTP/SCS as well as the land use projects envisioned by the 2045 MTP/SCS:

1. Operation of the construction vehicles (i.e., scrapers, loaders, dump trucks);
2. The creation of fugitive dust during clearing and grading; and
3. The use of asphalt or other oil-based substances during the final construction phases, which also generate nuisance odors.

The significance of daily emissions, particularly ROG and NO_x emissions, generated by construction equipment utilized to build 2045 MTP/SCS transportation improvements and future development facilitated by the SCS land use scenario would depend on the type and quantity of equipment used and the hours of operation. The amount of ROG emissions generated by oil-based substances such as asphalt is dependent upon the type and amount of asphalt utilized. The significance of fugitive dust (PM_{2.5} and PM₁₀) emissions would depend upon the following factors: (1) the aerial extent of disturbed soils; (2) the length of disturbance time; (3) whether existing structures are demolished; (4) whether excavation is involved (including the potential removal of underground storage tanks); and (5) whether transport of excavated materials offsite is necessary.

Intersection improvements such as signalization, re-striping, or signal coordination are not expected to generate significant short-term emissions impacts. However, other 2045 MTP/SCS projects as well as future development facilitated by the SCS land use scenario may involve grading and paving, or the construction of permanent facilities. For example, substantial grading and paving would be required for the widening and interchange relocation anticipated for the U.S. 101/Walnut Avenue Interchange in Monterey County. The precise quantity of emissions would need to be determined at the time of proposed construction of a given transportation improvement or development project. These

emissions would be compared to MBARD's construction thresholds, as listed in Section 4.3.3(a), *Methodology and Significance Thresholds*.

However, construction equipment would be subject to the stringent rules and regulations adopted by the U.S. EPA and CARB to reduce criteria pollutant and hazardous emissions limits from on-road vehicles and off-road equipment. For example, CARB has the In-Use Off-Road Diesel-Fueled Fleets Regulation to reduce particulate matter and NO_x from off-road heavy-duty diesel vehicles from various industries including air travel, manufacturing, and landscaping. In addition, the U.S. EPA and CARB both have ignition diesel engine standards for non-road portable equipment, such as diesel generators and air compressors, that require the non-road equipment engines to be rated a cleaner tier by specific years, which will result in reduced emissions (CARB 2021c, U.S. EPA 2016). Even though these regulations exist, it cannot be assumed that projects under the 2045 MTP/SCS would be constructed using the latest and lowest emitting construction equipment for a majority of their construction fleet. Therefore, short-term impacts would be significant because construction emissions could result in cumulatively considerable net increases in PM₁₀ and/or ozone precursor emissions. Implementation of Mitigation Measures AQ-2(a) through AQ-2(c) for individual projects would reduce PM₁₀ and ozone precursor emissions; however, this impact would remain significant and unavoidable.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG, and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the 2045 MTP/SCS program where applicable for transportation projects that result in fugitive dust and ozone precursor emissions, and where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

AQ-2(a) Application of MBARD Feasible Mitigation Measures

For all projects, the implementing agency shall incorporate the most recent MBARD feasible mitigation measures and/or technologies for reducing inhalable particles based on analysis of individual sites and project circumstances. Current MBARD feasible mitigation measures include the following measures. Additional and/or modified measures may be adopted by MBARD prior to implementation of individual projects under the 2045 MTP/SCS. The most current list of feasible mitigation measures at the time of project implementation shall be used.

- Water all active construction areas at least twice daily. Frequency should be based on the type of operation, soil, and wind exposure.
- Prohibit all grading activities during periods of high wind (over 15 miles per hour).

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- Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).
- Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydro seed area.
- Haul trucks shall maintain at least 2'0" of freeboard.
- Cover all trucks hauling dirt, sand, or loose materials.
- Plant tree windbreaks on the windward perimeter of construction projects if adjacent to open land.
- Plant vegetative ground cover in disturbed areas as soon as possible.
- Cover inactive storage piles.
- Install wheel washers at the entrance to construction sites for all exiting trucks.
- Pave all roads on construction sites.
- Sweep streets if visible soil material is carried out from the construction site.
- Limit the area under construction at any one time.
- Post a publicly visible sign which specifies the telephone number and person to contact regarding dust complaints. This person shall respond to complaints and take corrective action within 48 hours. The phone number of the Monterey Bay Air Resources District shall be visible to ensure compliance with Rule 402 (Nuisance).

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for AMBAG transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be implemented during construction where appropriate.

AQ-2(b) Diesel Equipment Emissions Standards

The implementing agency shall ensure, to the extent feasible, that diesel construction equipment meeting CARB Tier 4 emission standards for off-road heavy-duty diesel engines is used. If use of Tier 4 equipment is not feasible, diesel construction equipment meeting Tier 3 (or if infeasible, Tier 2) emission standards shall be used, and engines shall be retrofitted with CARB Level 3 Verified Diesel Emissions Control Strategy (VDECS) if available for the equipment. These measures shall be noted on all construction plans and the implementing agency shall perform periodic site inspections.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for AMBAG transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

AQ-2(c) Electric Construction Equipment

The implementing agency shall ensure that to the extent possible, construction equipment utilizes electricity from power poles rather than temporary diesel power generators and/or gasoline power generators.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for AMBAG transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

Significance After Mitigation

Implementation of Measures AQ-2(a) through AQ-2(c) would reduce short-term construction emissions from individual projects and thus reduce the severity of impacts by requiring best practices for dust and exhaust emissions via readily available, lower-emitting diesel equipment, and/or equipment powered by alternative cleaner fuels (e.g., propane) or electricity, as well as on-road trucks using particulate exhaust filters. To the extent that an implementing agency requires an individual project to implement all feasible mitigation measures described above, individual project impacts may be reduced to a less than significant level. However, these mitigation measure may not be feasible or effective for all projects. Therefore, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible at the programmatic level.

Threshold 2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard

Impact AQ-3 PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE 2045 MTP/SCS WOULD RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF PM₁₀. LONG-TERM OPERATIONAL IMPACTS RELATED TO PM₁₀ EMISSIONS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Operation – Transportation Systems

Projected on-road vehicle emissions of ozone precursors and particulate matter on the AMBAG transportation network and land use emissions in the AMBAG region for the year 2045 were compared to 2020 baseline conditions. The on-road vehicle source emissions for the 2045 MTP/SCS were estimated using the EMFAC2017 emission inventory model developed by CARB. In addition to ozone precursors and particulate matter, MBARD also regulates emissions of two attainment pollutants, CO and SO_x. The primary source of CO is the use of gasoline-powered engines with automobiles being the primary contributor. The primary source of SO_x is fuel combustion by vehicles, while chemical plants, sulfur recovery plants and metal processing are minor contributors (U.S. EPA 2021a). MBARD has not developed regional emissions inventories or projections for CO and SO_x. However, because

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both pollutants are primarily associated with fuel combustion and transportation, this analysis evaluates the change in CO and SO_x emissions associated with on-road motor vehicles, based on data and projections developed by AMBAG using EMFAC2017. Table 4.3-10 compares the baseline conditions for these pollutants in 2020 and 2045 conditions with implementation of the 2045 MTP/SCS. The conditions in 2045 without implementation of the 2045 MTP/SCS are also shown for informational purposes.⁴

Table 4.3-10 Regional Emissions Analysis

Scenario	VMT	ROG Emissions (tons/day)	NO _x Emissions (tons/day)	PM ₁₀ Emissions (tons/day) ¹	CO Emissions (tons/day)	SO _x Emissions (tons/day)
2020 AMBAG Baseline	17,331,954	4.27	8.89	1.10	34.53	0.07
2045 No Project	20,041,051	1.73	3.69	1.15	17.62	0.05
2045 MTP/SCS	20,032,142	1.72	3.71	1.15	17.51	0.05
Change % (Baseline vs. 2045 MTP/SCS)²	16%	-60%	-58%	5%	-49%	-27%

VMT = vehicle miles traveled; ROG = reactive organic gases; NO_x = nitrous oxide; PM₁₀ = particulate matter with a diameter of 10 microns or less; CO = carbon monoxide; SO_x = sulfur oxide

¹ PM₁₀ includes tire wear and brake wear emissions.

² A negative percentage represents a decrease

Source: On-road motor vehicle emissions were calculated by AMBAG using EMFAC. Refer to 2045 MTP/SCS Chapter 5 and Appendix G for complete methodology.

For mobile source emissions, projected 2045 emissions for ROG and NO_x with implementation of the 2045 MTP/SCS would be below the 2020 AMBAG baseline. Although total regional VMT would increase over the planning horizon from 2020 to 2045 regardless of MTP/SCS implementation, this result for ROG and NO_x emissions is consistent with the statewide downward trend for these pollutants as a result of CARB rules designed to reduce emissions from cars and trucks. ROG emissions are primarily generated by gasoline vehicles and are decreasing over time due to improvements in vehicle emission rates (CARB 2013). NO_x emissions are primarily generated by trucks and are decreasing substantially over time due to CARB rules designed to reduce NO_x emissions from diesel trucks and buses. The projected 2045 emissions for CO and SO_x with implementation of the 2045 MTP/SCS would also be below the 2020 baseline due to the same reasoning.

However, total PM₁₀ emissions from on-road mobile sources would increase by approximately 0.06 tons per day (approximately five percent) compared to the 2020 AMBAG baseline. The increase can be attributed to an increase in tire and brake wear emissions (i.e., fugitive emissions). There are no state-wide regulations to reduce PM₁₀ emissions from tire and brake wear, but CARB is conducting research to better characterize and reduce these

⁴ VMT is lower for 2045 MTP/SCS scenario but there is an increase in Heavy-Heavy Duty Diesel Trucks VMT compared to the 2045 No Project scenario. This slight VMT increases contribute to the increased NO_x under the 2045 MTP/SCS.

emissions (CARB 2021d). Unlike the fugitive PM₁₀ emissions, the PM₁₀ emissions from running exhaust would decrease due to the decrease in average daily VMT. Given this increase in total PM₁₀ emissions, long-term operational impacts would be significant because they would result in a cumulatively considerable net increase in a criteria pollutant for which the project region is non-attainment.

The 2045 MTP/SCS already includes policies, alternative transportation projects and transportation demand management projects that would encourage the use of transportation modes other than passenger vehicles. However, the expected growth in the AMBAG region would still result in higher regional PM₁₀ emissions compared to baseline conditions. Some of the relevant strategies from the 2045 MTP/SCS that support alternative transportation include:

- Work with the Planning Directors Forum to further define and evaluate Opportunity Areas as areas for transit oriented development, as well as educate jurisdictions on the definition of transit priority project (TPP) areas per SB 375 to take advantage of CEQA streamlining benefits.
- Prioritize corridor investment projects along high-quality transit corridors that serve multiple modes of travel in the development of the Metropolitan Transportation Plan and Regional Transportation Plans. Supportive investments include enhancements for high quality transit, technology development, bicycle and pedestrian improvements and safer intersections.
- Prioritize projects for funding that are consistent with the Sustainable Communities Strategy goals and/or that have complete streets elements per the adopted Sustainable Communities Strategy and Regional Complete Streets Guidelines in order to encourage use of active transportation options for short trips and improve quality of life
- Investment in safe bicycle and pedestrian routes that improve connectivity and access to common destinations, such as connections between residential areas and schools, employment centers, neighborhood shopping, and transit stops and stations, supporting efforts throughout the region to improve connectivity and realize public health benefits from these investments
- Take steps to improve safety and security at crosswalks, transit stops and along main access routes to transit, including rural areas, with higher priority for low income, minority and high crime areas.
- Collaborate with jurisdictions and employers to provide local community shuttles or circulators that serve transit oriented development, high quality transit stops and neighborhood commercial centers providing an incentive for residents and employees to make trips on transit.
- Continue the region's commitment to transportation demand management programs as a strategy for safety education and promotion of alternative travel modes for all types of trips. Market transportation demand management strategies towards tourists so that once people arrive to the Monterey Bay area they have resources to get out of their cars.

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- Continue to plan for and provide infrastructure for electric vehicles using the region's PEV Readiness Plan, while also planning for and considering evolving transport methods from driverless cars to informal ridesharing networks.

Also note that the 2045 MTP/SCS air contaminant emissions shown in Table 4.3-7 are modeled emissions based on VMT. The results do not account for reduction strategies, such as a transportation demand management plan, telecommuting, and transit service enhancements, since these strategies are off-model reductions that cannot be included in EMFAC. The mobile air contaminant emissions from the 2045 MTP/SCS are expected to decrease with the inclusion of these reduction strategies, such that the analysis herein represents a reasonable worst-reasonable scenario for air contaminant emissions. Refer to "Modeling Methodology" in Appendix F of the 2045 MTP/SCS for an explanation about the model sensitivity and recommended off-model adjustments.

Operation – Land Uses

As described in Impact AQ-1, the 2022 RGF forecasts that the population within the AMBAG region will grow by approximately 107,500 people and 65,000 jobs would be added from the years 2015 to 2045. It is expected that the increased growth would result in an increase in ROG and PM₁₀ emissions over the planning horizon based on the ROG, NO_x, and PM₁₀ emission inventory and forecasts patterns (see Table 4.3-6 and Table 4.3-7). A further review of the sources contributing to the MBARD 2000 through 2035 emission inventories (e.g., stationary, mobile, and area-wide sources) show that increasing area-wide emissions continue to increase while emissions from stationary and mobile sources are declining for total ROG emissions. For the PM₁₀ emission inventories, area-wide and mobile sources are responsible for the total increase over time. It can reasonably be expected that these emission inventories pattern would continue in the forecasts post-2035 due to the anticipated increase in land use developments (e.g., residences and commercial uses). While the 2045 MTP/SCS would include additional land use development, the total ROG and PM₁₀ emissions from the land uses proposed would vary for each individual project and would need to be analyzed on a project by project basis, and they may not exceed the applicable MBARD project level significance thresholds. Therefore, this impact would be significant.

While the above strategies from the 2045 MTP/SCS would reduce VMT and some of the criteria pollutants (ROG, NO_x, CO and SO_x), there would still be a net increase in PM₁₀ emissions from mobile sources. In addition, the proposed land use projects would most likely increase ROG and PM₁₀ based on growth forecasts. This would increase the likelihood that the NCCAB continues to exceed the PM₁₀ CAAQS since NCCAB is currently in non-attainment of the State PM₁₀ standard. Therefore, since the PM₁₀ emissions generated by the 2045 MTP/SCS would contribute to existing non-attainment conditions in the NCAAB, impacts would be significant.

Mitigation Measures

AMBAG, in partnership with MBARD and implementing agencies, shall implement Mitigation Measure AQ-3(a) to reduce PM₁₀ emissions. For land use projects under their jurisdiction, the cities and counties in the AMBAG region can and should implement Mitigation Measure AQ-3(b) to reduce PM₁₀ emissions, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

AQ-3(a) PM₁₀ Emissions Reduction

To help reduce regional PM₁₀ emissions, AMBAG and the RTPAs, in partnership with MBARD and implementing agencies, shall:

- a. Support the use of existing air quality and transportation funds and seek additional funds to continue the implementation of the CARB Carl Moyer Program, which is intended to retrofit and replace trucks and locomotives to reduce particulate matter.
- b. Incentivize the reduction of mobile PM emissions from mobile exhaust and entrained PM sources such as tire wear, brake wear, and roadway dust through funding.
- c. Hold forums and workshops to encourage land use projects to incorporate transportation demand management (TDM) strategies as part of the project design to reduce the number of vehicular trips across the transportation network. Potential strategies could include ridesharing, carpooling, subsidized public transit, flexible work hours, and parking management measures.

IMPLEMENTING AGENCIES AND TIMING

AMBAG and the RTPAs in partnership with MBARD, are responsible for implementing this measure. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during operation where appropriate.

AQ-3(b) Long-term Regional Operational Emissions

Implementing agencies including transportation project sponsors, counties, and cities shall, or can and should, implement long-term operational emissions reduction measures. Such reduction measures include the following:

- Require that all interior and exterior architectural coatings for all developments utilize coatings following MBARD Rule 426, *Architectural Coatings*.
- Increase building envelope energy efficiency standards in excess of applicable building standards and encourage new development to achieve zero net energy use.
- Install energy-efficient appliances, interior lighting, and building mechanical systems. Encourage installation of solar panels for new residential and commercial development.
- Locate sensitive receptors more than 500 feet of a freeway, 500 feet of urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
- Locate sensitive receptors more than 1,000 feet of a major diesel rail service or railyards. Where adequate buffer cannot be implemented, implement the following:

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- Install air filtration (as part of mechanical ventilation systems or stand-alone air cleaners) to indoor reduce pollution exposure for residents and other sensitive populations in buildings that are close to transportation network improvement projects.
- Use air filtration devices rated MERV-13 or higher.
- Plant trees and/or vegetation suited to trapping roadway air pollution and/or sound walls between sensitive receptors and the pollution source. The vegetation buffer should be thick, with full coverage from the ground to the top of the canopy Install higher efficacy public street and exterior lighting.
- Use daylight as an integral part of lighting systems in buildings.
- Use passive solar designs to take advantage of solar heating and natural cooling.
- Install light colored “cool” roofs, cool pavements.
- Install solar and tankless hot water heaters.
- Exclude wood-burning fireplaces and stoves.
- Incorporate design measures and infrastructure that promotes safe and efficient use of alternative modes of transportation (e.g., neighborhood electric vehicles, bicycles) pedestrian access, and public transportation use. Such measures may include incorporation of electric vehicle charging stations, bike lanes, bicycle-friendly intersections, and bicycle parking and storage facilities.
- Incorporate design measures that promote ride sharing programs (e.g., by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading and waiting areas for ride sharing vehicles, and providing a web site or message board for coordinating rides).

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during operation where appropriate.

Significance After Mitigation

If implementing agencies adopt and require the mitigation described above, transportation related PM₁₀ emission impacts would be reduced because said measures encourage the use of cleaner vehicles and reduce vehicle trips. However, since the implementation is not project or site specific, reductions cannot be estimated and cannot be guaranteed on a project by project basis. Additionally, it is unlikely that an increase in daily PM₁₀ emissions above baseline conditions could be fully avoided in 2045, due to factors unrelated to discretionary approvals, such as population growth in the region. Therefore, this impact would remain significant and unavoidable. No additional feasible mitigation measures are available that would reduce daily emissions below the 2020 AMBAG baseline.

Threshold 3: Expose sensitive receptors to substantial pollutant concentrations

Impact AQ-4 IMPLEMENTATION OF THE 2045 MTP/SCS WOULD EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Fugitive Dust

Re-entrained dust refers to roadway dust that is “kicked up” by moving vehicles on paved and unpaved roadways. This type of dust would be generated by roadway activity. In addition, dust from construction activity would add to regional dust levels. The synergistic effects of road dust (typically measured as PM₁₀) with ozone and the hazardous constituents of re-entrained road dust itself (carcinogens, irritants, pathogens) may affect human health by contributing to respiratory illnesses such as asthma and allergies. Although motor vehicle emission control advances have allowed vehicle tailpipe emissions of some pollutants to decrease over the last 20 years, the number of vehicles in use and the amount of vehicle activity has continued to increase. This would suggest that re-entrained road dust has increased as well, as the amount of re-entrained dust is related to the number of vehicles on a road.

Table 4.3-11 compares fugitive particulate emissions, which includes only brake and tire wear, for the baseline conditions in 2020 and 2045 with implementation of the 2045 MTP/SCS. The conditions in 2045 without implementation of the 2045 MTP/SCS are also shown for informational purposes. As shown in Table 4.3-11, fugitive particulate emissions would be higher with implementation of the 2045 MTP/SCS compared to 2020 baseline conditions.

Table 4.3-11 Mobile Source Fugitive Particulate (PM₁₀ + PM_{2.5}) Emissions

Scenario	VMT	PM ₁₀ Emissions (tons/day)	PM _{2.5} Emissions (tons/day)	Total PM (PM ₁₀ + PM _{2.5}) Emissions (tons/day)
2020 AMBAG Baseline	17,331,954	0.97	0.39	1.36
2045 No Project	20,041,051	1.11	0.44	1.55
2045 MTP/SCS	20,032,142	1.11	0.44	1.55
Change % (Baseline vs. 2045 MTP/SCS)	16%	14%	14%	14%

VMT = vehicle miles traveled; PM₁₀ = particulate matter with a diameter of 10 microns or less; PM_{2.5} = particulate matter with a diameter of 2.5 microns or less

Source: Regional Mobile source emissions were calculated by AMBAG using EMFAC. The PM emissions only account for tire and brake wear emissions. Total PM includes both PM₁₀ and PM_{2.5}. Refer to 2045 MTP/SCS Chapter 5 and Appendix G for complete methodology.

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The MBARD fugitive dust control measures described in Table 4.3-11 would reduce re-entrained dust from unpaved roads within the region. In 2003, the California Legislature enacted SB 656 to reduce public exposure of airborne particulate matter. SB 656 is described above in Section 4.3.2.

D-1 encourages the use of dust suppressants, including watering or gravel, applying non-toxic surfactants on unpaved roads and related equipment staging areas, recommending speed limits, limiting access to infrequently used unpaved roads or parking areas and in situations involving high volumes of traffic (>100 vehicles per day), considering paving on a case-by-case basis. D-2 is an extension or enhancement of D-1 and evaluates the impact of vehicle speed on unpaved roads in creating fugitive dust, visibility impairment, nuisance, and dust deposition in areas along the roadway corridor. However, these fugitive dust control measures are not standard conditions of approval or required control measures for new developments. Therefore, implementation of Mitigation Measure AQ-3(b) *Long-term Regional Operational Emissions* in Impact AQ-3 would be required to reduce re-entrained road dust exposure to sensitive receptors.

Mitigation Measures

AQ-3(b) Long-term Regional Operational Emissions

See Impact AQ-3 for mitigation measure

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for AMBAG transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be implemented during construction where appropriate.

Significance After Mitigation

Implementation of Measures AQ-3(b) would reduce fugitive dust emissions from individual projects and thus reduce the severity of impacts by requiring best practices for dust and emissions via watering, vegetative covers, reducing travel speed, and covering exposed areas. To the extent that an implementing agency requires an individual project to implement all feasible mitigation measures described above, individual project impact would be reduced to a less than significant level. However, these mitigation measure may not be feasible or effective for all projects. Therefore, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible at the programmatic level.

Threshold 3: Expose sensitive receptors to substantial pollutant concentrations

Impact AQ-5 FUTURE GROWTH AND DEVELOPMENT FACILITATED BY THE 2045 MTP/SCS LAND USE SCENARIO WOULD EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL HAZARDOUS AIR POLLUTANT CONCENTRATIONS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

As described in Section 4.3.1, *Setting*, TACs are air pollutants that pose a potential hazard to human health by causing or contributing to an increase in mortality or serious illness. Common sources of TAC include high traffic freeways and roads, gas dispensing facilities, industrial facilities, and diesel engines. DPM is classified as the primary airborne carcinogen in the State. To protect people from TACs and reduce exposure, CARB recommends avoiding siting new sensitive land uses, such as residences, schools, daycare centers, playgrounds, or medical facilities, within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day (CARB 2005).

According to the MBARD CEQA Air Quality Guidelines (2008), a sensitive receptor is defined as any residence including private homes, condominiums, apartments, and living quarters; education resources such as preschools and kindergarten through grade twelve schools; daycare centers; and health care facilities such as hospitals or retirement and nursing homes. A sensitive receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing.

Although no high capacity urban or rural roadways exist in the AMBAG region, there are six major highway routes (Highways 1, 9, 17, 25, 68 and 101). Within the AMBAG region, the sensitive receptors residing close to freeways or busy roadways may experience adverse health effects beyond those typically found in urban areas.

The MBARD significance threshold for long-term public health risk is set at 10 excess cancer cases in a million for cancer risk. For non-cancer risk (i.e., chronic or acute risk), the significance level is set at a hazard index of greater than 1.0. If a formal project level health risk assessment shows that a significant impact results, mitigation measures to reduce the predicted levels of toxic air pollutants from the facility to a level of insignificance may be imposed by the lead agency.

Toxic Air Containments – Diesel Particulate Matter

Because exposure of toxic air contaminants is primarily based on local parameters (e.g., average daily traffic on local roadway segments and wind direction in relation to source and receptor), health risks adjacent to high volume roadways and transportation facilities would remain higher than regional averages.

To assess the impact of diesel on regional roadways, an analysis of on-road mobile source diesel PM_{2.5} and PM₁₀ emissions (primary) and diesel NO_x, SO_x, and CO (as surrogates for secondary PM₁₀⁵) are shown in Table 4.3-12. The emissions are the total exhaust emissions, which include the running, idling, and start exhaust. The baseline conditions in 2020 and 2045

⁵ Secondary PM₁₀ is formed in the atmosphere through chemical reactions of gases and certain organic compounds.

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conditions with implementation of the 2045 MTP/SCS are compared. The conditions in 2045 without implementation of the 2045 MTP/SCS are also shown for informational purpose.⁶

Table 4.3-12 On-Road Mobile Source Diesel Toxics Comparison

Scenario	Diesel PM _{2.5} (tons/day)	Diesel PM ₁₀ (tons/day) ¹	Diesel NO _x (tons/day)	Diesel SO _x (tons/day)	Diesel CO (tons/day)
2020 AMBAG Baseline	0.08	0.09	5.56	0.01	1.98
2045 No Project	0.03	0.03	2.68	0.01	1.96
2045 MTP/SCS	0.03	0.03	2.71	0.01	1.97
Change in % (Baseline vs. 2045 MTP/SCS)	-68%	-68%	-51%	-15%	-0.5%

Source: On-road mobile source diesel toxics emissions were calculated by AMBAG using EMFAC. Refer to 2045 MTP/SCS Chapter 5 and Appendix G for complete methodology.

Projected emissions for 2045 with implementation of the 2045 MTP/SCS would result in lower diesel PM_{2.5}, PM₁₀, NO_x and SO_x, emissions, and slightly lower diesel CO emissions when compared to the 2020 baseline. Because on-road mobile emissions with implementation of the 2045 MTP/SCS would decrease or remain the same for all pollutants compared to baseline 2020 conditions, impacts related to diesel particulate matter exposure and associated health risks and nuisance odors at the regional level would be less than significant.

While overall toxic air contaminant concentrations health risks within any given distance of mobile sources in the region would generally decrease with implementation of the MTP/SCS (refer to Table 4.3-12), exposure is primarily based on local parameters such as average daily traffic (ADT) on local roadway segment, or wind direction in relation to source and receptor. As such, the health risks adjacent to high volume roadways and transportation facilities (e.g., Highway 1 and 101) would remain higher than regional averages. See Section 4.15, *Transportation*, for a description of high-volume roadways and transportation facilities, such as railways, in the AMBAG region.

As discussed above, proximity to freeways increases cancer risk and exposure to particulate matter. Similarly, proximity to heavily traveled transit corridors and intersections would expose residents to higher levels of diesel particulate matter and carbon monoxide. As shown in Table 4.3-13, although the 2045 MTP/SCS would reduce daily truck hours of delay in the region as a whole in 2045 when compared to conditions without the 2045 MTP/SCS, the 2045 MTP/SCS would nevertheless increase daily truck hours of delay compared to the 2020 baseline. The increased hours of truck delay would result in lengthier exposure of DPM where delay occurs near residences. The increase in vehicle delay, especially along corridors near sensitive residential receptors, would increase idling emissions and associated health risks

⁶ VMT is lower for 2045 MTP/SCS scenario but there is an increase in Heavy-Heavy Duty Diesel Trucks VMT compared to the 2045 No Project scenario. This slight VMT increases contribute to the increased diesel NO_x and CO in the 2045 MTP/SCS scenario.

for nearby receptors. This increase in delay would largely be a result of population and employment growth that is anticipated throughout the region by 2045, as discussed in Section 4.13, *Population and Housing*, and which would also result in additional vehicle travel within the region that would increase delay.

Table 4.3-13 Daily Hours of Truck Delay in AMBAG Region

	Baseline Conditions (2020)	2045 No Project	2045 MTP/SCS	Change in % (Baseline vs. 2045 MTP/SCS)
Daily Hours of Truck Delay	6,404	9,611	8,218	28%

Source: RTDM (AMBAG 2018)

As discussed in Section 2, *Project Description*, as a result of the 2045 MTP/SCS policies and land use scenario, the anticipated growth pattern would concentrate population adjacent to transit and other transportation facilities that would result in more people being exposed to elevated health risks as compared to areas of the region more distant from such facilities.

It is important to note that the location and pattern of the proposed 2045 MTP/SCS growth would influence travel behavior. A compact growth pattern served by an efficient and diverse transportation system facilitates a reduction in automotive travel and increases walking, bicycling and transit use—all of which reduce individual vehicle trips and associated vehicle delay. Reduced vehicle delay and vehicle trips are directly linked to reduced regional criteria air pollutant emissions and toxic air emissions from mobile sources. A variety of other factors contribute to the declines in TAC emissions compared to existing conditions, including vehicle technology, cleaner fuels and fleet turnover. However, in order to achieve the greatest VMT reductions from a compact growth pattern, development also must necessarily be in relatively close proximity to public transit and major roadway corridors such as Highway 1 or U.S. 101. Although the precise location and density of such development is not known at this time, the proposed 2045 MTP/SCS would result in new sensitive receptors close to existing and new hazardous air pollutant sources, potentially resulting in the exposure of sensitive receptors to substantial hazardous air pollutant concentrations and objectionable odors. The siting of new sensitive receptors would be subject to an individual jurisdiction's land use approval processes and would be analyzed on an individual project basis and subject to mitigation measures identified below.

Therefore, the 2045 MTP/SCS would expose existing and new sensitive receptors to substantial pollutant concentrations from diesel particulates and other TACs, and impacts would be significant.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG, and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the 2045 MTP/SCS program where applicable for transportation projects, and where feasible and necessary based on project and site

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specific considerations. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

AQ-5 Health Risk Reduction Measures

Transportation implementing agencies shall, or can and should, implement the following measures:

- Retain a qualified air quality consultant to prepare a health risk assessment (HRA) in accordance with CARB and OEHHA requirements to determine the exposure of nearby sensitive receptors to TAC concentrations.
- If impacts result in increased risks to sensitive receptors above the MBARD significance thresholds, then design features or control measures must be included that will reduce the health risks at the location of the off-site sensitive receptors to a level below the MBARD significance threshold. For example, plant trees and/or vegetation suited to trapping TACs and/or sound walls between sensitive receptors and the pollution source would be recommended. This measure would trap TACs emitted from pollution sources such as highways, reducing the amount of TACs to which residents and other sensitive populations would be exposed.
- AMBAG will partner with MBARD and other implementing agencies to explore a program to retrofit existing residential buildings and other sensitive land uses near freeways or roadways where health risk impacts would exceed MBARD significance thresholds with air filtration devices rated minimum efficiency report value (MERV) 13.
- Implement air pollution reduction strategies as described in Table 1 from the CARB *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways* technical advisory (2017) when reasonable and feasible for transportation system projects associated with the 2045 MTP/SCS.

In addition, consistent with the general guidance contained in CARB's *Air Quality and Land Use Handbook* (April 2005) and *Technical Advisory on Strategies to Reduce Air pollution Exposure Near High-Volume Roadways* (April 2017). Appropriate measures shall include one or more of the following methods, as determined by a qualified professional, as applicable. The implementing agency shall incorporate health risk reduction measures based on analysis of individual land use sites and project circumstances. These measures may include:

- Avoid siting new sensitive land uses within 500 feet of a freeway or railway.
- Require development projects for new sensitive land uses to be designed to minimize exposure to roadway-related pollutants to the maximum extent feasible through inclusion of design components including air filtration and physical barriers.
- Do not locate sensitive receptors near the entry and exit points of a distribution center.
- Locate structures and outdoor living areas for sensitive uses as far as possible from the source of emissions. As feasible, locate doors, outdoor living areas and air intake vents

primarily on the side of the building away from the freeway or other pollution source. As feasible, incorporate dense, tiered vegetation that regains foliage year-round and has a long-life span between the pollution source and the project.

- Maintain a 50-foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year).
- Install, operate, and maintain in good working order a central heating and ventilation (HV) system or other air take system in the building, or in each individual residential unit, that meets or exceeds the efficiency standard of the MERV 13. The HV system should include the following features: Installation of a high efficiency filter and/or carbon filter-to-filter particulates and other chemical matter from entering the building. Either HEPA filters or ASHRAE 85 percent supply filters should be used. Ongoing maintenance should occur.
- Retain a qualified HV consultant or Home Energy Rating Systems (HERS) rater during the design phase of the project to locate the HV system based on exposure modeling from the mobile and/or stationary pollutant sources.
- Maintain positive pressure within the building.
- Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air.
- Achieve a performance standard of at least four air exchanges per hour of recirculation. Achieve a performance standard of 0.25 air exchanges per hour of in unfiltered infiltration if the building is not positively pressurized.
- Require project owners to provide a disclosure statement to occupants and buyers summarizing technical studies that reflect health concerns about exposure to highway exhaust emissions.
- Implement feasible attenuation measures needed to reduce potential air quality impacts to sensitive receptors such as air filtration systems.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for AMBAG transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during operation where appropriate.

Significance After Mitigation

Although implementation of the above mitigation would reduce health risks, individual sensitive receptors may still be exposed to substantial hazardous air pollutant concentrations that would have significant health risk effects. Therefore, this impact remains significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people

Impact AQ-6 **IMPLEMENTATION OF THE 2045 MTP/SCS WOULD NOT RESULT IN OTHER EMISSIONS (SUCH AS THOSE LEADING TO ODORS) ADVERSELY IMPACTING A SUBSTANTIAL NUMBER OF PEOPLE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

Impacts from odor emissions can vary from being a mild annoyance to a person or could trigger an asthma episode for people with sensitive airways (MBARD 2008). The degree to which an odor is offensive is based on an individual's sensitivity and tolerance for said odor. Some people may find an odor acceptable (e.g., odors from a coffee roaster), while others may find it off-putting. Since odors are subjective, the sensory and physical response experienced by an individual varies based on their perception of the quality and intensity of the odor. Quality refers to the nature of the smell (e.g., flowery or sour) and intensity refers to the strength of the odor. Furthermore, the distance between the odor source and receptor, the wind direction, and sensitivity of the receptor can influence how the impact is perceived. Common sources of odors include landfills, agricultural uses, wastewater treatment plants, refineries, and vehicle exhaust.

Construction

Buildout constructed under the 2045 MTP/SCS would generate oil and diesel fuel odors during construction from equipment use. The odors would be limited to the construction period and would be intermittent and temporary. Furthermore, these odors would dissipate rapidly with distance from in-use construction equipment. Accordingly, construction activities would not result in the frequent exposure of receptors to objectionable odorous emissions.

Operation

Development associated with the 2045 MTP/SCS is related to transportation improvements (e.g., roadway widening, interchange improvements, installation of bicycle lanes), new residences, and job growth. These types of project are not typical operational sources of odors. However, all 2045 MTP/SCS projects would be subject to MBARD Rule 402, *Nuisance*, which prohibits the discharge of air contaminants or other material that would cause injury, detriment, nuisance, or annoyance to any considerable number of persons. Furthermore, the projects would be required to adhere to local policies, zoning designations, and municipal codes that would limit odors. As discussed in Section 4.3.2, *Regulatory Setting*, counties and cities within the NCAAB have air quality-related policies in their General Plans that promote multi-modal transportation, electric-vehicles, and transit oriented development. These types of policies aim to reduce travel with fossil-fueled vehicles, and indirectly reduce odors from vehicle exhaust. However, if offensive odors are present and become a nuisance, then complaints can be filed by email or phone call with the MBARD, who will then investigate the source.

Since objectionable odors associated with the construction and operation of the projects from the 2045 MTP/SCS would either be temporary and regulated by local governing bodies (i.e., MBARD, counties, and cities), implementation of the 2045 MTP/SCS would not result in odors or emissions adversely affecting a substantial number of people. Impacts would be less than significant.

Mitigation Measures

None required.

c. Specific MTP Projects That May Result in Impacts

Table 4.3-14 identifies examples of transportation projects with the potential to cause or contribute to direct or indirect air quality impacts as discussed above. These projects are representative and were selected based on their potential scope and likelihood of disturbing agricultural lands. All projects that include a construction component would contribute to Impact AQ-2. Projects that include roadway, rail, and transit features and/or expansions would contribute to Impacts AQ-3 through AQ-5. Moreover, any project that would expose sensitive receptors to hazardous air pollutants would contribute to Impact AQ-4 and AQ-5. Additional specific analysis will be required as individual projects are implemented to determine the project specific magnitude of impact. Mitigation discussed above would apply to these specific projects.

Table 4.3-14 2045 MTP/SCS Projects that May Result in Air Quality Impacts

AMBAG Project No.	Project	Impact
MON-SOL014-SO	SR 146 Bypass (Pinnacles Parkway)	AQ-2, AQ-3, AQ-4, AQ-5
MON-CT023-CT	State Route 156 and US 101 Interchange	AQ-2, AQ-3, AQ-4, AQ-5
MON-KCY006-CK	US 101 - 1st Street Interchange (Lonoak Street Interchange)	AQ-2, AQ-3, AQ-4, AQ-5
SB-CT-A55	U.S. 101: Las Armitas: Monterey/San Benito County Line to State Route 156	AQ-2, AQ-3, AQ-4, AQ-5
SC-AIR-P01-WAT	Lump Sum Watsonville Airport Capital Projects	AQ-2, AQ-3, AQ-4, AQ-5
SC-RTC 27a-RTC	Monterey Bay Sanctuary Scenic Trail Network - Design, Environmental Clearance, and Construction	AQ-2, AQ-3, AQ-4, AQ-5

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4.4 Biological Resources

This section evaluates biological resources impacts of development facilitated by the proposed 2045 MTP/SCS.

4.4.1 Setting

a. Terrestrial Vegetation Communities

Monterey, San Benito, and Santa Cruz counties contain a wide diversity of tree (hardwood and coniferous forests, oak woodlands, riparian woodlands), shrub (chaparrals, coastal scrubs) and herbaceous (grasslands, certain wetlands) habitat types. Some habitat types, such as coast live oak woodland, tend to have similar species composition and structure in most areas; however, other habitats, such as other forest types, grasslands and coastal scrubs, will exhibit differences in species composition and structure depending upon proximity to the coast, soil type, elevation and aspect. Thirty-seven habitats are mapped using the California Department of Fish and Wildlife (CDFW) California Wildlife Habitat Relationships (CWHR) habitat classification system within Monterey, San Benito, and Santa Cruz counties (CDFW 2014). Of those, 16 habitat types occur within three miles of construction projects outlined in the 2045 MTP/SCS (Figure 4.4-1, and Figure 4.4-3). A description of each of the habitats adapted from A Guide to Wildlife Habitats of California (Mayer and Laudenslayer 1988) within three miles of projects outlined in the 2045 MTP/SCS is presented below. The vegetation classifications from A Manual of California Vegetation, Second Edition (Sawyer et al. 2009) that most closely resemble those classified by the CWHR are also presented in each description. It should be noted that these habitats are generalized, and that site specific variation is likely present. Also note that the CWHR classification system maps habitats from a broad perspective, and in many areas, it is expected that two or more habitats may blend with one another. As such, due to the large scale at which habitats are mapped using the CWHR classification system, vernal pools, wetlands and drainages are discussed separately in Section 4.4.1.b utilizing sources of information that better capture aquatic and wetland habitats that are of smaller scale in the landscape. Habitats which occur within populated areas can also show variation because of a greater exposure to anthropogenic influences, such as the introduction of exotic plant species.

Tree-Dominated Habitats

Monterey, San Benito, and Santa Cruz counties are home to a variety of hardwood, coniferous and mixed woodlands and forests (Figure 4.4-1, and Figure 4.4-3). These tree-dominated habitats can support diverse wildlife populations. Riparian habitats are generally the terrestrial areas adjacent to freshwater bodies forming a vegetated corridor

Figure 4.4-2 Habitat Classifications in San Benito County

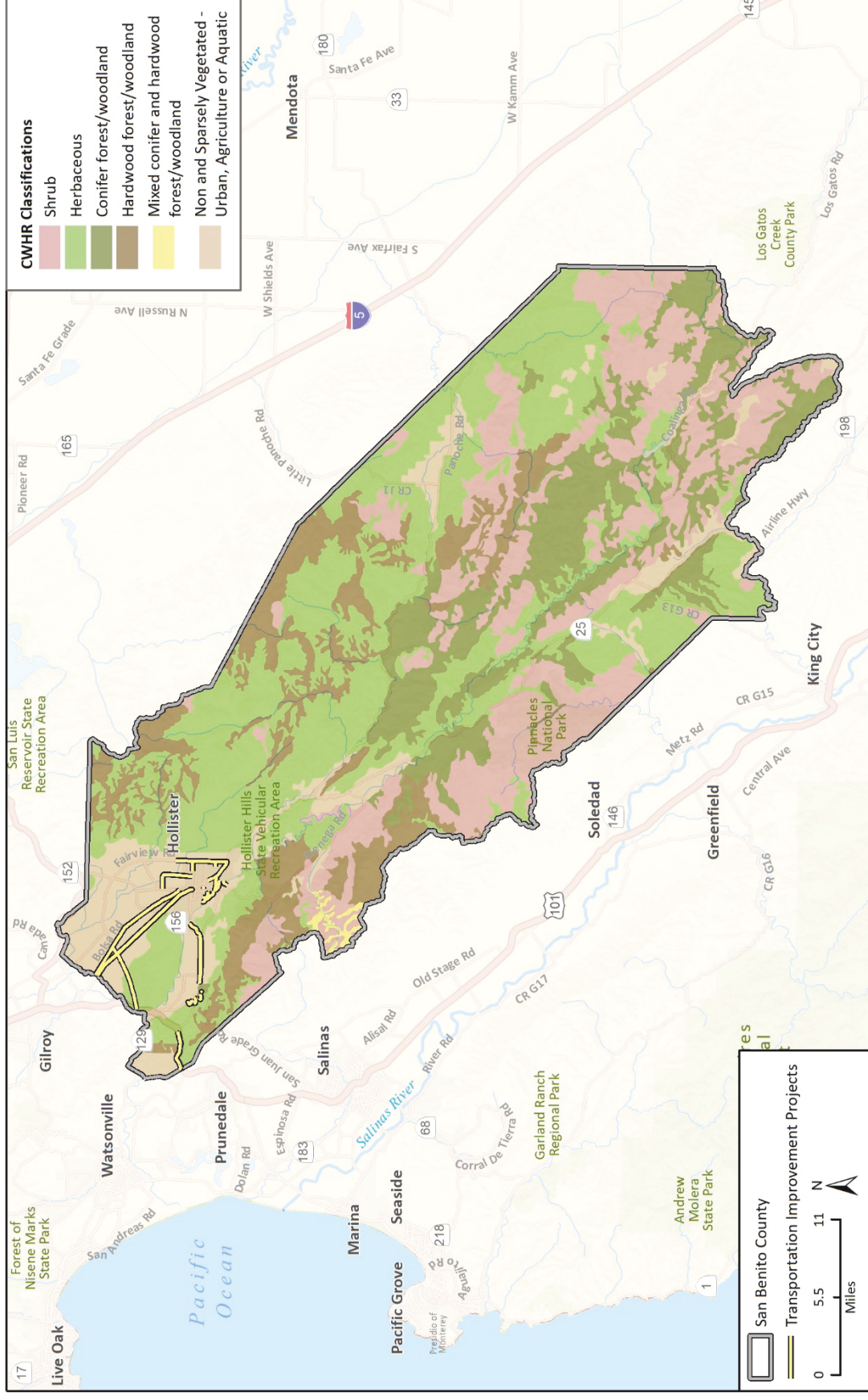
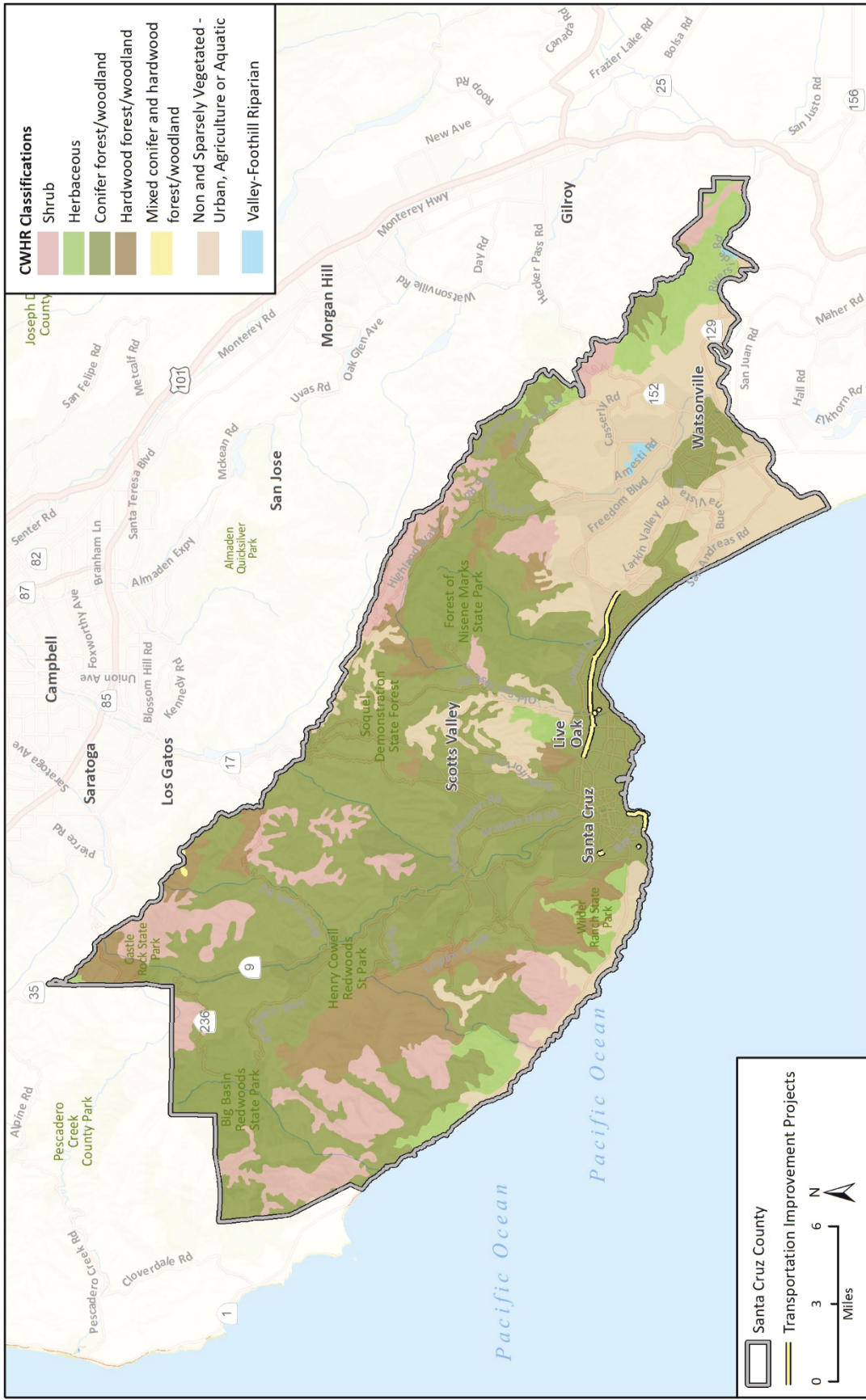


Fig 4.4-2 Habitat Classifications in San Benito County

Figure 4.4-3 **Habitat Classifications in Santa Cruz County**



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 Additional data provided by CDFW, 2021.

from stream edge to floodplain edge. Riparian habitats occur in and along the major rivers (e.g., Salinas, Pajaro, and San Benito Rivers), as well as along the many creeks, streams, arroyos, and ravines found in these counties. Riparian areas are rich in wildlife species, providing foraging, migration, roosting and nesting/breeding habitat. The following are descriptions of types of tree-dominated habitats that occur within three miles of construction projects outlined in the 2045 MTP/SCS.

Closed-Cone Pine-Cypress Forest

Closed-cone pine-cypress forests are typically dominated by a single species, either closed-cone pines (*Pinus* spp.) or western cypresses (*Hesperocyparis* spp.). The height and canopy closure of this habitat type is variable depending upon site characteristics including soil type, the age of the stand and the floristic composition. Closed-cone pine-cypress forests are considered fire climax or fire-dependent vegetation types. This habitat type is typically found within rocky and infertile soils along the extreme coast or on very shallow infertile soils contain stunted, wind-pruned individuals. Closed-cone pine-cypress forest types that occur in the counties include but are not limited to the *Pinus radiata* Forest Alliance and the *Hesperocyparis macrocarpa* Woodland Special Stands as described by Sawyer et al. (2009).

Redwood

Redwood forests in the counties include some areas of old-growth forest, with larger areas of second growth. Second growth redwood habitats are characterized by an even-aged structure with an open park-like appearance. Coast redwood (*Sequoia sempervirens*) is the dominant tree species. Understory vegetation in old-growth redwood is usually very dense and composed of tall shrubs. Redwoods are very vigorous sprouters with sprouts eventually forming the dominant canopy. Redwood and associated conifers also reproduce well by seed. Redwood forest typically corresponds to the *Sequoia sempervirens* Forest Alliance as described by Sawyer et al. (2009).

Blue Oak-foothill Pine

This habitat is typically diverse in structure both vertically and horizontally and is composed primarily of a mix of hardwoods, conifers and shrubs. Shrub distributions tend to be clumped, with interspersed patches of annual grassland. Woodlands of this type generally tend to only have small accumulations of dead and downed woody material, compared with other tree habitats in California. Blue oak (*Quercus douglasii*) and foothill pine (*Pinus sabiniana*) typically comprise the overstory of this habitat, with blue oak usually most abundant. In the Coast Range, associated tree species include coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*) and California buckeye (*Aesculus californica*). In rocky areas, interior live oak sometimes dominates the overstory especially on north-facing slopes at higher elevations. At lower elevations, where blue oaks make up most of the canopy, the understory tends to be primarily annual grasses and forbs. At higher elevations where foothill pines and even interior live oaks sometimes comprise the canopy, the understory usually includes patches of shrubs in addition to the annual grasses and forbs. Shrub species that can be associated with this habitat type include various buckbrush (*Ceanothus* spp.) species and manzanita

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(*Arctostaphylos* spp.). Other species found in this habitat type can include California coffeeberry (*Frangula californica*), poison-oak (*Toxicodendron diversilobum*) and silver lupine (*Lupinus albifrons*). This habitat is generally located in the foothills of the Central Valley, between 500 and 3,000 feet in elevation. Blue oak-foothill pine habitat typically corresponds to the *Quercus douglasii* Woodland Alliance or *Pinus sabiniana* Woodland Alliance as described by Sawyer et al. (2009).

Montane Hardwood

A typical montane hardwood habitat is composed of a pronounced hardwood tree layer, with an infrequent and poorly developed shrub stratum and a sparse herbaceous layer. In the Coast Range, canyon live oak (*Quercus chrysolepis*) often forms pure stands on steep canyon slopes and rocky ridge tops. It is replaced at higher elevations by scattered huckleberry oak (*Quercus vacciniifolia*) amongst an overstory of various conifers including ponderosa pine (*Pinus ponderosa*), Coulter pine (*Pinus coulteri*), California white fir (*Abies concolor*) and Jeffrey pine (*Pinus jeffreyi*). At mid-elevations, typical associates include Douglas-fir (*Pseudotsuga menziesii*), tanoak (*Notholithocarpus densiflorus*), Pacific madrone (*Arbutus menziesii*), California black oak (*Quercus kelloggii*) and bristlecone fir (*Abies bracteata*). At lower elevations, knobcone pine (*Pinus attenuata*), foothill pine, Oregon white oak (*Quercus garryana*) and coast live oak are abundant. Understory vegetation is mostly scattered woody shrubs and a few forbs. Elevations range from 300 feet near the Pacific Ocean up to 9,000 feet. Montane hardwood typically corresponds to the *Quercus chrysolepis* Forest Alliance, as described by Sawyer et al. (2009).

Valley Oak Woodland

This habitat can range in structure from savanna-like to forest-like stands. The canopies tend to be partially closed and comprised mostly of winter-deciduous, broad-leaved species such as valley oak. Dense stands typically grow in valley soils along natural drainages and decrease with the transition from lowlands to uplands. Shrubs are also associated with this habitat in lowland areas, especially along drainages. Valley oak stands with little or no grazing tend to develop a partial shrub layer of bird disseminated species, such as poison oak, toyon (*Heteromeles arbutifolia*) and California coffeeberry. Ground cover consists of a well-developed carpet of annual grasses and forbs such as wild oat (*Avena* spp.), bromes (*Bromus* spp.) and ryegrass (*Festuca perennis*). Valley oak woodland typically corresponds to the *Quercus lobata* Woodland Alliance as described by Sawyer et al. (2009).

Valley Foothill Riparian

This habitat type is associated with drainages, particularly those with low velocity flows, flood plains and gentle topography. This habitat is generally comprised of a canopy tree layer dominated by cottonwoods (*Populus* spp.), sycamore (*Platanus racemosa*) and/or valley oak and an understory shrub layer typically consisting of willows (*Salix* spp.) and/or mulefat (*Baccharis salicifolia*). Valley foothill riparian can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances

can include, but are not limited to, *Platanus racemosa* Woodland Alliance and the various *Populus* alliances depending upon dominant species present.

Coastal Oak Woodland

Coastal oak woodlands are common to mesic coastal foothills of California. The woodlands do not form a continuous belt but occur in a mosaic closely associated with mixed chaparral, coastal scrub and annual grasslands. In Monterey, San Benito, and Santa Cruz counties these woodlands are commonly dominated by coast live oak. At drier sites, other species such as blue oak and foothill pine may also be interspersed. The understory of dense stands tends to be composed of shade tolerant shrubs and herbaceous plant species such as California blackberry (*Rubus ursinus*), poison oak, miner's lettuce (*Claytonia perfoliata*) and toyon. In areas with more open canopies the understory may be more dominated by grassland species such as bromes and oats. Coastal oak woodland typically corresponds to the *Quercus agrifolia* alliance as described by Sawyer et al. (2009).

Eucalyptus Forest

This habitat type ranges from single-species thickets with little or no shrubby understory to scattered trees over a well-developed herbaceous and shrubby understory. In most cases, eucalyptus groves form a dense stand with a closed canopy. Blue gum eucalyptus (*Eucalyptus globulus*) and red gum eucalyptus (*Eucalyptus camaldulensis*) are the most common eucalyptus species found in these stands. The understory of these areas tends to have extensive patches of leaf litter with limited vegetation but may include species such as poison oak and toyon.

Shrub Dominated Habitats

Shrub-dominated habitats, such as chaparral and coastal scrub, are comprised primarily of woody, evergreen shrubs and occur primarily along the coastal bluffs as well as areas associated with the Coast Range within Monterey, San Benito, and Santa Cruz counties (Figure 4.4-1, Figure 4.4-2, and Figure 4.4-3). The following are descriptions of shrub-dominated habitats that occur within three miles of construction projects outlined in the 2045 MTP/SCS.

Chamise-Redshank Chaparral

Regionally this chaparral habitat type is dominated by pure or nearly pure stands of chamise (*Adenostoma fasciculatum*). Mature chamise-redshank chaparral is single layered, generally lacking well-developed herbaceous ground cover and over story trees. Shrub canopies frequently overlap, producing a nearly impenetrable canopy of interwoven branches. Fire occurs regularly in chamise-redshank chaparral and influences habitat structure. Within the AMBAG region, chamise-redshank chaparral typically corresponds to the *Adenostoma fasciculatum* Shrubland Alliance as described by Sawyer et al. (2009).

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Coastal Scrub

This habitat type is typically dominated by shrub species with mesophytic leaves and shallow root systems. This habitat type can differ in composition depending upon proximity to the coastline. California sagebrush (*Artemisia californica*) tends to be common in all coastal scrub habitats. From Mount Diablo south to Santa Barbara County, black sage (*Salvia mellifera*) and California buckwheat (*Eriogonum fasciculatum*) become more abundant in mesic areas. Coastal scrub can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances can include, but are not limited to, *Artemisia californica* Shrubland Alliance, *Baccharis pilularis* Shrubland Alliance and the *Salvia mellifera* Shrubland Alliance.

Mixed Chaparral

Mixed chaparral is a structurally homogeneous brushland type dominated by shrubs with thick, stiff, heavily cutinized evergreen leaves. Shrub height and crown cover vary with age since last burn, precipitation, aspect, and soil type. At maturity, cismontane mixed chaparral typically is a dense, nearly impenetrable thicket. On poor sites, serpentine soils or transmontane slopes, shrub cover may be considerably reduced, and shrubs may be shorter. Leaf litter and standing dead material may accumulate in stands that have not burned for several decades. Mixed chaparral can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances can include, but are not limited to, *Ceanothus cuneatus* Shrubland Alliance and the *Arctostaphylos* sp. Shrubland Alliances.

Herbaceous Habitats

These habitats are generally comprised of areas dominated by grasses and other non-woody species. The majority of this habitat in Monterey, San Benito, and Santa Cruz counties is comprised of non-native grasslands (Figure 4.4-1, Figure 4.4-2, and Figure 4.4-3). Native perennial grasslands, which are dominated by perennial bunch grasses, such as purple needlegrass (*Nassella pulchra*), were historically abundant within Monterey, San Benito, and Santa Cruz counties but are now currently patchy in distribution statewide. The following are descriptions of the grass and herb-dominated habitats that occur within three miles of construction projects outlined in the 2045 MTP/SCS.

Annual Grasslands

This habitat type is composed primarily of non-native annual herbs and forbs and typically lacks shrub or tree cover. The physiognomy and species composition of annual grasslands is highly variable and also varies considerably on a temporal scale. Grazing is a common land use within this habitat type. Common grass species include wild oats, soft chess brome (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*) and red brome (*Bromus madritensis*). Common forb species can include species of filaree (*Erodium* spp.) and bur clover (*Medicago polymorpha*). California poppy can also be quite common in this habitat type. Annual grassland can correspond to multiple alliances as described by Sawyer et al. (2009) depending

upon the species composition. These alliances can include, but are not limited to, *Avena (barbata, fatua)* semi-natural stands and *Bromus (diandrus, hordeaceus)* – *Brachypodium distachyon* semi-natural stands.

Developed, Sparsely/Non-Vegetated and Cropland Habitats

Developed and sparsely to non-vegetated habitats and croplands are abundant in the AMBAG region (Figure 4.4-1, Figure 4.4-2, and Figure 4.4-3). Developed habitats are usually sparsely or non-vegetated and are associated with urban and agricultural areas and are highly disturbed. Species that occur in these areas are typically adapted to anthropogenic disturbance and/or comprised of ornamental species. Sparsely vegetated habitats also tend to be associated with rock outcrops and cliffs. The following are descriptions of developed and sparsely/non-vegetated habitats that occur within three miles of construction projects outlined in the 2045 MTP/SCS.

Cropland

This habitat type is characterized by areas in active agriculture used to grow annual or perennial herbaceous crops and is an entirely man-made habitat. The structure of vegetation can vary in size, shape and growing pattern. The dominant cropland use is row crops and can also include hay and grain. Subcategories of cropland habitat classifications include, but are not limited to, dryland grain crop, irrigated hayfield crop and irrigated row and field crop. Orchards and vineyards are classified separately

Orchard/Vineyard

This habitat type is characterized by typically open, single-species tree- or woody vine-dominated habitats. Depending on the tree or vine type and pruning methods, they are usually low, bushy plants with an open understory to facilitate harvest. Trees such as citrus, avocados and olives are evergreen and other common tree crops such as walnuts and stonefruits are deciduous. The understory is usually composed of low growing grasses and other herbaceous plants but may be managed to prevent understory growth totally or partially, such as along tree rows. Vineyards, comprised of grape vines, also share similar characteristics. Subcategories of orchard/vineyard habitat classifications include, but are not limited to, deciduous orchard and evergreen orchard.

Urban

This habitat type is also a completely man-made habitat comprising residential, commercial and industrial developed areas. Plant species within urban habitats are typically comprised of ornamental plants and non-native invasive plant species, with large developed areas lacking vegetation.

Barren

This habitat type is defined by the absence of vegetation. Any habitat with less than two percent total herbaceous vegetation cover and less than 10 percent relative cover by tree or shrub species is defined as barren (Mayer and Laudenslayer 1988). Structure and composition

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of the substrate is largely determined by the region of the state as well as surrounding environment. Examples of barren habitats include areas of exposed parent rock or talus.

b. Drainages and Wetlands

Drainages

The AMBAG region contains two primary watersheds: the Salinas River Valley, which is the third-longest river in California and traverses the length of Monterey County; and the Pajaro River Valley, the primary tributary of which begins in San Benito County and runs through southeastern Santa Cruz County. The Salinas River originates at the Santa Margarita Reservoir in San Luis Obispo County and extends northward to the Monterey Bay. The headwaters of the Salinas River are generally undeveloped, while the remainder of the valley is predominantly agricultural with several urban areas, the largest being the City of Salinas. The majority of the Pajaro River watershed consists of undeveloped grassland and shrubland in San Benito County, although a large portion of the lower watershed from Hollister west to the Pacific Ocean is under agricultural cultivation.

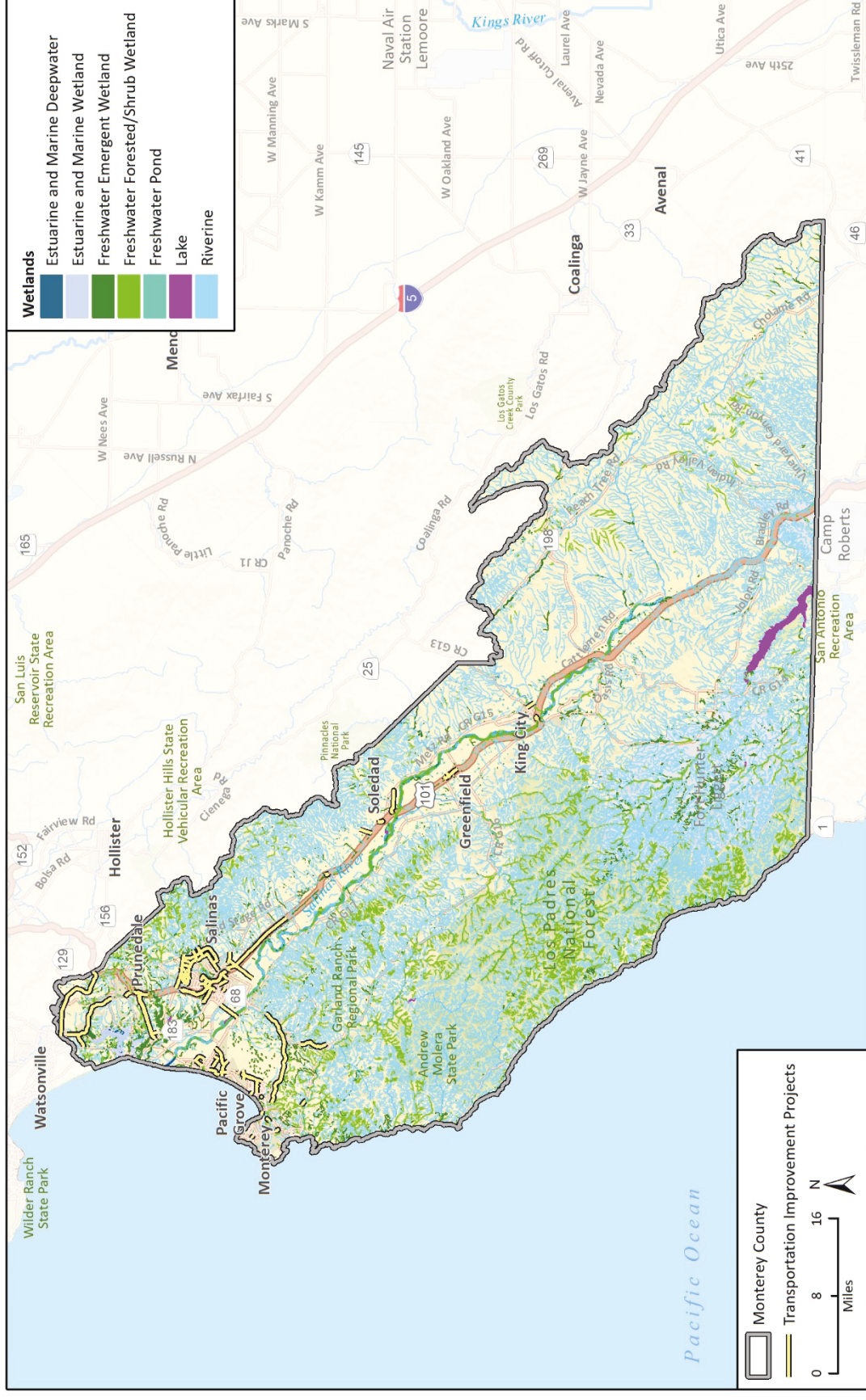
Other major rivers and their associated watersheds within the AMBAG region include San Lorenzo River, Carmel River, Big Sur River, Little Sur River, Nacimiento River, San Antonio River and San Benito River. Several creeks and tributaries are associated with each of these watersheds (Figure 4.4-4, Figure 4.4-5, and Figure 4.4-6). The drainages within these watersheds are of biological importance as they provide valuable foraging habitat, breeding habitat and movement habitat for a wide variety of animal species, including sensitive species such as steelhead (*Oncorhynchus mykiss*), coho salmon (*Oncorhynchus kisutch*) and California red-legged frog (*Rana draytonii*). Many of these rivers and their tributaries are also federally designated critical habitat for salmonid species.

Wetlands and Aquatic Habitats

Wetlands are regarded as important biological resources both because of their rarity and because they provide a variety of ecosystem services. Several types of wetlands exist in the subject counties, including freshwater marshes and vernal pools.

In addition to vernal pools, several areas within three miles of 2045 MTP/SCS construction projects contain wetlands mapped by the USFWS *National Wetlands Inventory* (NWI) (USFWS 2021a). A general description of each of the classifications used in the NWI is provided below. Of those wetland types mapped by the NWI, estuarine habitats are also mapped by the CWHR. Estuarine and marine type wetlands do not occur in San Benito County.

Figure 4.4-4 Wetlands and Aquatic Resources in Monterey County



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Figure 4.4-5 Wetlands and Aquatic Resources in San Benito County

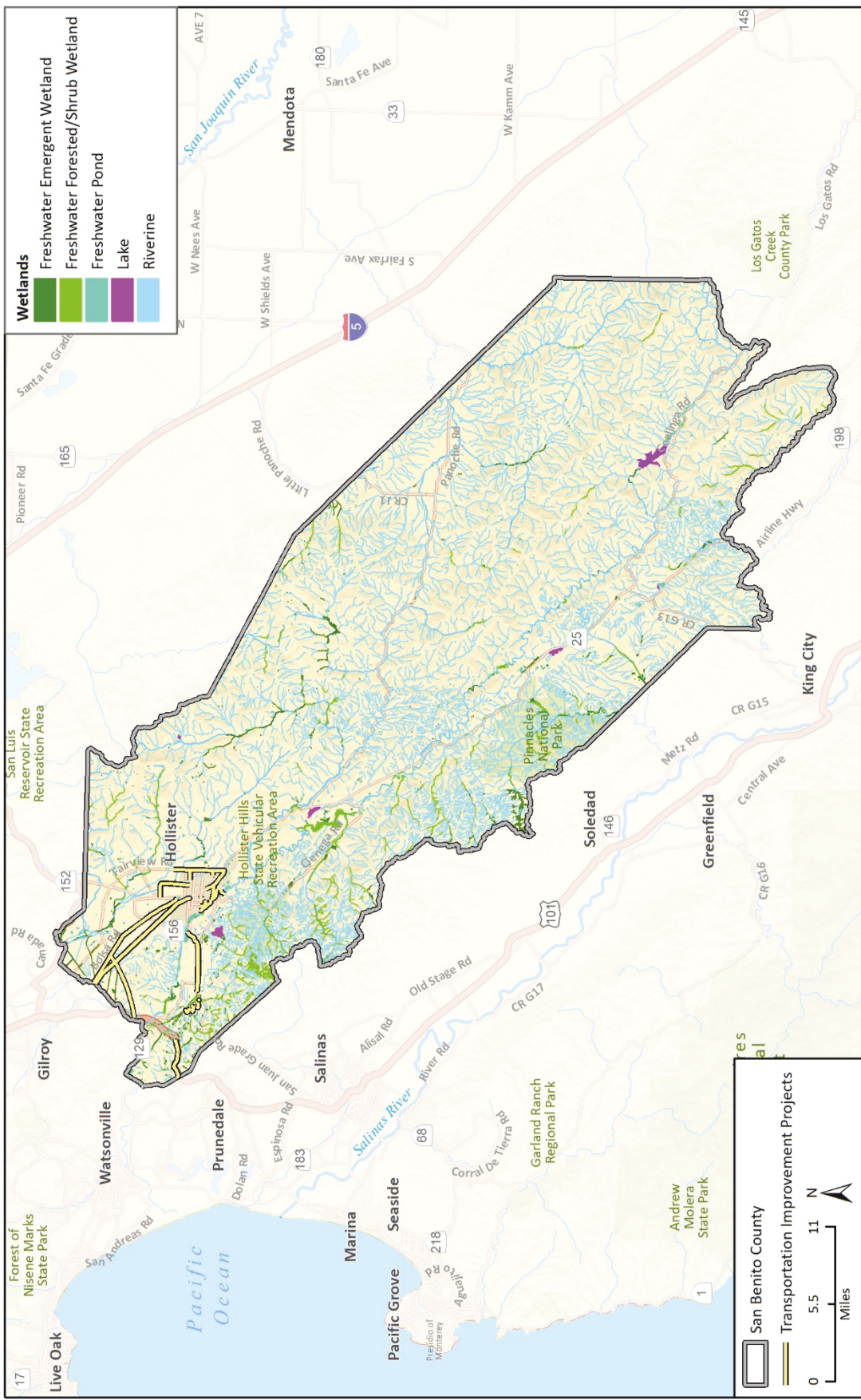


Fig. 4.5 Wetlands and Aquatic Resources in San Benito County

Vernal Pools

These seasonal wetlands are small depressions that fill with water during the winter, gradually drying during the spring and becoming completely dry in the summer. These pools are found in only a few places in the world outside of California. Vernal pool vegetation is adapted to the cycle of brief inundation followed by seasonal drying. Vernal pools are characterized by herbaceous plants that may begin their growth as aquatic or semi-aquatic plants and transition to a dry land environment as the pool dries, while other species germinate in the mud as the pool begins to dry. Most vernal pool plants are annual herbs, many of which are endemic to vernal pools. Wildlife species supported by vernal pools include California tiger salamander (*Ambystoma californiense*) and vernal pool fairy shrimp (*Branchinecta lynchi*).

Estuarine and Marine Deep-Water Wetlands

These deep-water wetlands are composed of the deep-water portion of estuarine or marine systems. Estuarine systems are composed of tidal habitats and adjacent tidal wetlands that are influenced by water runoff from and often semi-enclosed by land. They are located along low energy coastlines and have variable salinity. Marine systems of this type are generally open ocean and occur along high energy coastlines with salinities exceeding 30 parts per thousand (ppt) and little or no dilution except outside the mouths of estuaries.

Estuarine and Marine Wetlands

These wetlands are composed of estuarine and marine systems as described above; however, they are not deep-water. These areas can be subtidal or intertidal with a variety of vegetated and non-vegetated bottoms. Beaches, bars, and flats are also included.

Freshwater Emergent Wetlands

Freshwater emergent wetlands include all non-tidal waters dominated by emergent herbaceous plant species, mosses and/or lichens. Wetlands of this type are also low in salinity. The NWI also includes in this category wetlands that lack vegetation if they are less than 20 acres in size, do not have an active wave-formed or bedrock shoreline feature, have a low water depth less than 6.6 feet. Freshwater emergent wetlands are characterized by erect, rooted herbaceous hydrophytes. Dominant vegetation is generally perennial monocots. All emergent wetlands are inundated or saturated frequently enough that the roots of the vegetation prosper in an anaerobic environment. The wetlands may vary in size from small clumps to vast areas covering several kilometers. The acreage of Freshwater Emergent Wetlands in California has decreased dramatically since the turn of the century due to drainage and conversion to other uses, primarily agriculture.

Freshwater Forested/Shrub Wetlands

These wetlands include non-tidal waters that are dominated by trees and shrubs, with emergent herbaceous plants, mosses and/or lichens. The NWI also includes within this

category wetlands that lack vegetation can be included in this class if they also exhibit the same criteria as described for freshwater emergent wetlands. Freshwater forested/shrub wetlands are generally dominated by woody vegetation such as shrubs and trees. This wetland category also can include riparian habitats.

Freshwater Ponds

Freshwater ponds include non-tidal waters, typically less than 20 acres in size and typically with vegetative cover along its edges such as trees, shrubs, emergent herbaceous plants, mosses and/or lichens. Freshwater ponds can be man-made or natural and typically consist of an area of standing water with variable amounts of shoreline. These wetlands and deep-water habitats are dominated by plants that grow on or below the surface of the water. This wetland type is also mapped by the CWHR and categorized as lacustrine habitat which includes vernal pools; however, we have recognized vernal pools as unique features and thus provided a separate description that was previously presented.

Lakes

Lakes are a lacustrine system which includes wetlands and deep-water habitats that are located in a topographic depression or dammed river channel. These areas tend to be greater than 20 acres. Vegetation cover within this habitat is generally less than 30 percent and often occurs in the form of emergent or surface vegetation. Substrates are composed of at least 25 percent cover of particles smaller than stones.

Riverine

Riverine habitats are stream systems that include all wetlands and deep-water habitats contained in natural or artificial channels that contain periodically or continuously flowing water. This system may also form a connecting link between two bodies of standing water. Substrates generally consist of rock, cobble, gravel, or sand. Features mapped as riverine wetlands in the NWI include drainages as previously described.

c. Sensitive Natural Communities

Several natural communities considered sensitive by the CDFW occur within the AMBAG region. The *California Natural Diversity Database* (CNDDDB) lists twenty-one natural communities that occur with these counties (CDFW 2021a). These sensitive communities are also listed in Table 4.4-1 below. The Sensitive Natural Communities List in the CNDDDB is not currently maintained and no new information has been added in several years. As such, the CDFW maintains a List of Vegetation Alliances and Associations¹ (CDFW 2020). According to the CDFW's Vegetation Program, Alliances with State ranks of S1-S3 are considered imperiled and thus, potentially of special concern.

¹ CDFW classifies vegetation at the two finest levels of alliance and association. The alliance is defined by plant species composition, habitat conditions, physiognomy, and diagnostic species; at least one of the diagnostic species is typically found in the uppermost or dominant stratum (Jennings et al. 2009). The association is the most detailed classification level and reflects more specific characteristics of vegetation such as finer-level differences in species composition, topography, soils, substrate, climate, hydrology, and disturbance regime (FGDC 2008). Unlike alliances, associations often recognize two or more diagnostic species found in different vegetation layers (Sawyer et al. 2009).

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Table 4.4-1 Sensitive Communities Documented within Monterey, San Benito, and Santa Cruz Counties

Communities Considered Sensitive by the CDFW	County
Alkali Seep	Monterey
Central Dune Scrub	Monterey, Santa Cruz
Central Maritime Chaparral	Monterey
Coastal and Valley Freshwater Marsh	Monterey, Santa Cruz
Coastal Brackish Marsh	Monterey, Santa Cruz
Maritime Coast Range Ponderosa Pine Forest	Santa Cruz
Monterey Cypress Forest	Monterey
Monterey Pine Forest	Monterey, Santa Cruz
Monterey Pygmy Cypress Forest	Monterey
North Central Coast Calif. Roach/Stickleback/Steelhead Stream	Santa Cruz
North Central Coast Drainage Sacramento Sucker/Roach River	Santa Benito
North Central Coast Fall-Run Steelhead Stream	Monterey
North Central Coast Short-Run Coho Stream	Santa Cruz
Northern Bishop Pine Forest	Monterey
Northern Coastal Salt Marsh	Monterey, Santa Cruz
Northern Interior Cypress Forest	Santa Cruz
Northern Maritime Chaparral	Santa Cruz
Sycamore Alluvial Woodland	Monterey
Valley Needlegrass Grassland	Monterey
Valley Oak Woodland	Monterey
Valley Sink Scrub	Monterey
Sources: CNDDDB (CDFW 2021a)	

Because this analysis is at the AMBAG region level and programmatic, vegetation mapping and analysis at the alliance and association level is not practical and would be conducted at the project level. That said, some sensitive vegetation alliances and associations are already known to occur within Monterey, San Benito, and Santa Cruz counties as a subset of the habitats described in Sections 4.4.1.a and 4.4.1b. For instance, some oak woodland alliances within these counties, notably *Quercus lobata* Woodland Alliance, which most resembles the valley oak woodland described in Section 4.4.1.a, are considered sensitive.

d. Special-Status Species

Appendix D of this report is a list of Special-Status Species that are known to occur or have the potential to occur within Monterey, San Benito, and Santa Cruz Counties. For the purpose of this EIR, special-status species are those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the USFWS under the federal Endangered Species Act; those listed or proposed for listing as rare, threatened, or

endangered by the CDFW under the California Endangered Species Act (CESA); animals designated as “Species of Special Concern,” “Fully Protected,” or “Watch List” by the CDFW. The CNDDDB also provides records of other special animals that CDFW is tracking but are not currently designated a special-status. Because of the programmatic nature of the analysis and the duration in which the 2045 MTP/SCS will be implemented, these species were also included as “special-status” considering the CDFW is currently collecting data and tracking these species and therefore there is potential for their status to be elevated in the future. Additionally, special-status plants with California Rare Plant Rank (CRPR) of 1 through 4 were included. CDFW standards state that plants with a CRPR 1A, 1B, 2A and 2B may meet definitions of rare or endangered under CEQA Sections 15380 (b) and (d). By California Native Plant Society (CNPS) standards, the plants of CRPR Ranks 1A, 1B, 2A and 2B meet the definitions of Sections 2062 and 2067 (CESA) of the California Fish and Game Code (CFGC), and are eligible for state listing, thus should be considered under CEQA §15380. According to CDFW, “In general, CNPS Rank 3 plants (plants about which more information is needed) and Rank 4 plants (plants of limited distribution) may not warrant consideration under CEQA Guidelines §15380. These plants may be included on special-status plant lists such as those developed by counties where they would be addressed under CEQA Guidelines §15380. Factors such as regional rarity vs. statewide rarity should be considered in determining whether cumulative impacts to a Rank 4 plant are significant even if individual project impacts are not.”

This EIR identifies special-status species as those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the USFWS under the federal Endangered Species Act (ESA); those listed or proposed for listing as rare, threatened, or endangered by the CDFW under the CESA; animals designated as “Species of Special Concern,” “Fully Protected,” or “Watch List” by the CDFW; and plants with a California Rare Plant Rank (CRPR) of 1, 2, 3, and 4, which are defined as:

- **CRPR 1A** = Plants presumed extinct in California;
- **CRPR 1B.1** = Rare or endangered in California and elsewhere; seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat);
- **CRPR 1B.2** = Rare or endangered in California and elsewhere; fairly endangered in California (20-80 percent occurrences threatened);
- **CRPR 1B.3** = Rare or endangered in California and elsewhere, not very endangered in California (<20 percent of occurrences threatened or no current threats known);
- **CRPR 2** = Rare, threatened or endangered in California, but more common elsewhere;
- **CRPR 3** = Plants needing more information (most are species that are taxonomically unresolved; some species on this list meet the definitions of rarity under CNPS and CESA);
- **CRPR 4.1** = Plants of limited distribution (watch list), seriously endangered in California;
- **CRPR 4.2** = Plants of limited distribution (watch list), fairly endangered in California (20-80 percent occurrences threatened); and
- **CRPR 4.3** = Plants of limited distribution (watch list), not very endangered in California.

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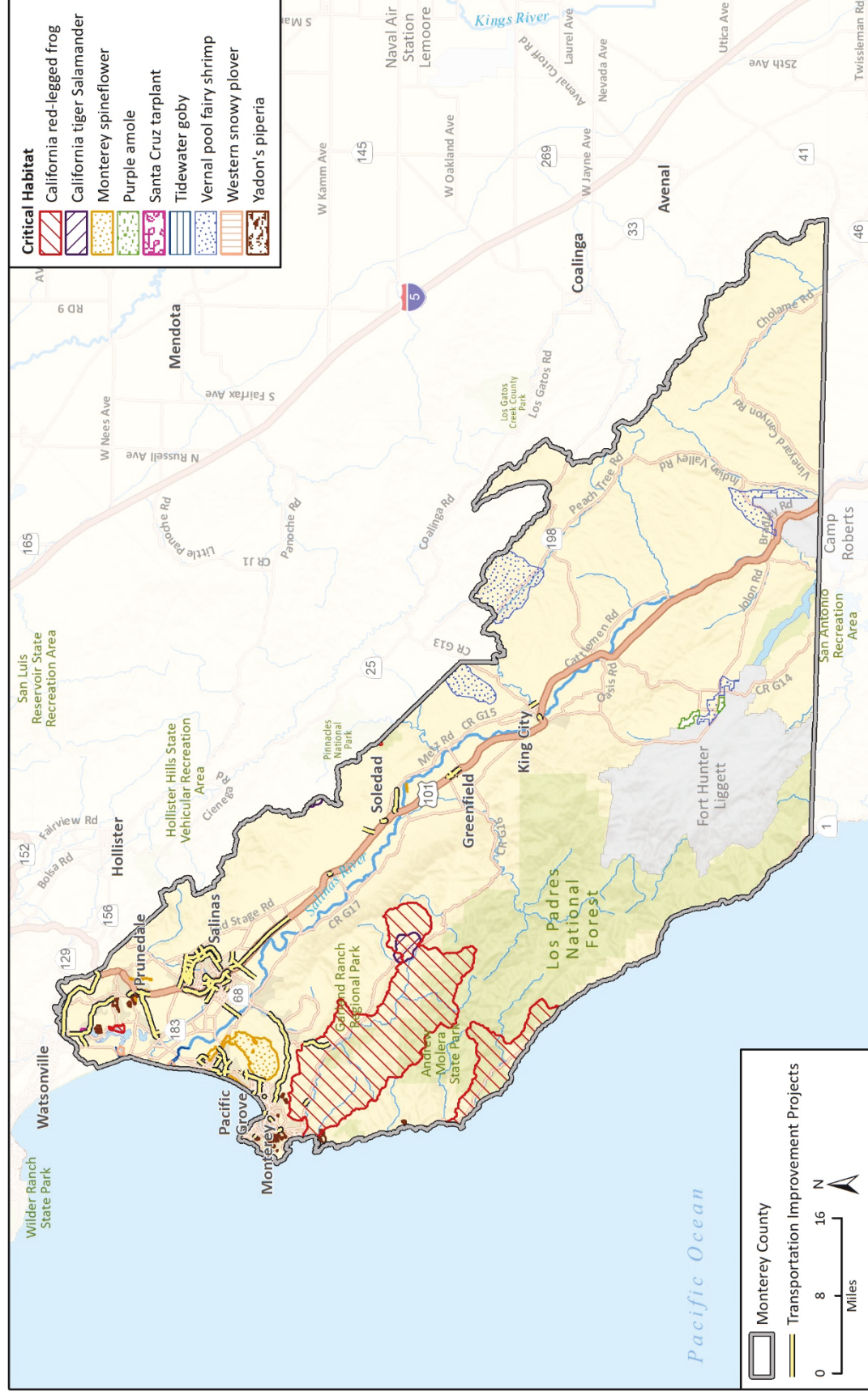
Species of Special Concern (SSC) is a category used by the CDFW for those species which are considered indicators of regional habitat changes or are considered to be potential future protected species. Species of Special Concern do not have any special legal status except that which may be afforded by the Fish and Game Code. The SSC category is intended by the CDFW for use as a management tool to include these species into special consideration when decisions are made concerning the development of natural lands, and these species are considered sensitive as described under the CEQA Appendix G questions.

Queries of the USFWS *Information, Planning, and Conservation* (IPaC) (USFWS 2021b), CNDDDB (CDFW 2021a) and the CNPS *Online Inventory of Rare and Endangered Plants of California* (CNPS 2021) were conducted to obtain comprehensive information regarding state and federally listed species considered to have potential to occur within Santa Cruz, San Benito and Monterey counties.

Federally designated critical habitat for 17 species also occurs in the AMBAG region (Figure 4.4-7, Figure 4.4-8, and Figure 4.4-9). Note that final designated critical habitat for the Coho Salmon – Central California coast ESU (*Oncorhynchus kisutch*) (not graphically depicted) includes all river/stream reaches (listed in Table 5 of the *Designated Critical Habitat: Central California Coast and southern Oregon/Northern California Coasts Coho Salmon; Final Rule* [1999]) and their tributaries that are accessible to listed coho salmon from Punta Gorda in Northern California south to the San Lorenzo River in central California. 2045 MTP/SCS construction projects occur in federally designated critical habitats (USFWS 2021b; 2021c) for 17 species. These critical habitats are also listed in Table 4.4-2.

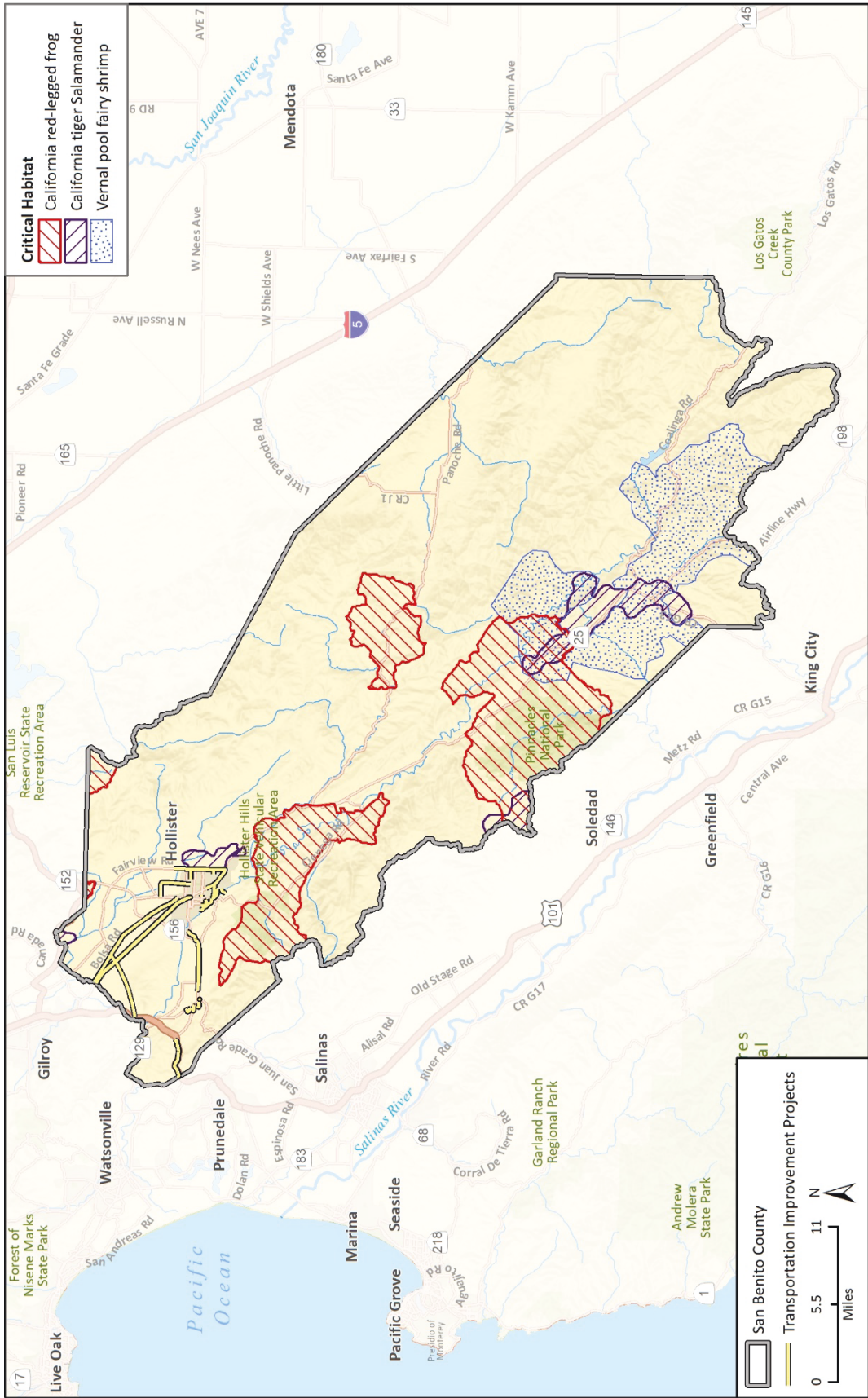
The AMBAG region is home to several species protected by federal and state agencies. Special-status animal species can be found in a variety of habitats these counties host. The CNDDDB (CDFW 2021a), CNPS (2021) and USFWS IPaC (USFWS 2021b) together list 388 special-status species (263 plant species [including CRPR 3 and 4] and 125 animal species [inclusive of special animals]) that occur within Monterey, San Benito, and Santa Cruz counties. The status and habitat requirements of those species are presented in Appendix D.

Figure 4.4-7 Federally Designated Critical Habitat in Monterey County



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Additional data provided by USFWS, 2021.

Figure 4.4-8 Federally Designated Critical Habitat in San Benito County



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 Additional data provided by USFWS, 2021.

Figure 4.4-9 Federally Designated Critical Habitat in Santa Cruz County

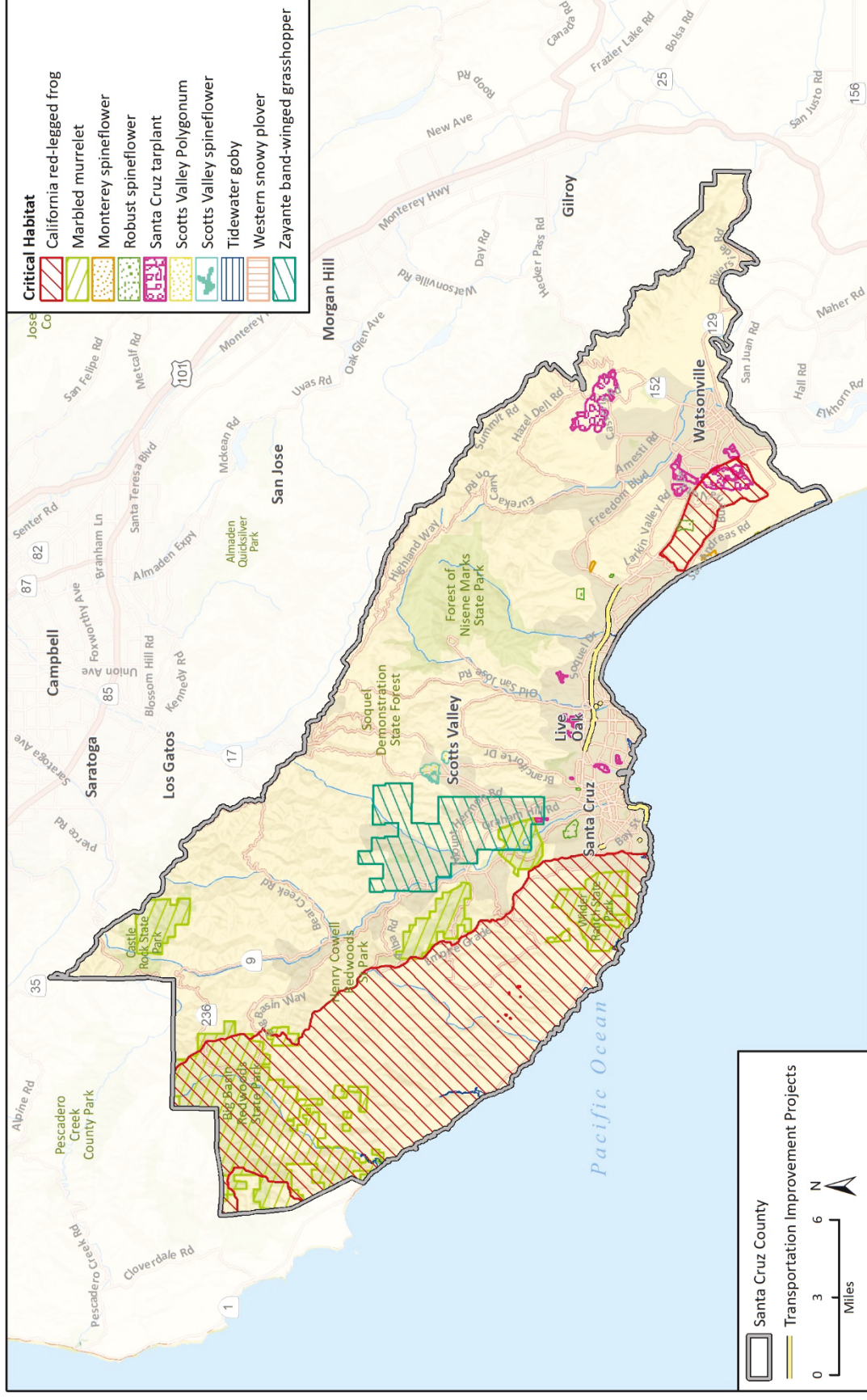


Figure 4.4-9 Federally Designated Critical Habitat in Santa Cruz County

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Table 4.4-2 Federal Designated Critical Habitat within Monterey, San Benito, and Santa Cruz Counties

Critical Habitat	County
California red-legged frog (<i>Rana draytonii</i>) ¹	Monterey, San Benito, Santa Cruz
California tiger salamander (<i>Ambystoma californiense</i>) ¹	Monterey, San Benito
Coho Salmon – Central California coast ESU (<i>Oncorhynchus kisutch</i>)	Santa Cruz
Marbled murrelet (<i>Brachyramphus marmoratus</i>) ¹	Santa Cruz
Monterey spineflower (<i>Chorizanthe pungens</i> var. <i>pungens</i>)	Monterey, Santa Cruz
Purple amole (<i>Chlorogalum purpureum</i>)	Monterey
Robust Spineflower (<i>Chorizanthe robusta</i> var. <i>robusta</i>)	Santa Cruz
Santa Cruz tarplant (<i>Holocarpha macradenia</i>) ¹	Monterey, Santa Cruz
Scott's Valley polygonum (<i>Polygonum hickmanii</i>)	Santa Cruz
Scotts Valley Spineflower (<i>Chorizanthe robusta</i> var. <i>hartwegii</i>)	Santa Cruz
Steelhead – Central California Coast DPS (<i>Oncorhynchus mykiss irideus</i>) ¹	Santa Cruz
Steelhead – South-Central California Coast DPS (<i>Oncorhynchus mykiss irideus</i>) ¹	Monterey, San Benito, Santa Cruz
Tidewater goby (<i>Eucyclogobius newberryi</i>)	Monterey, Santa Cruz
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	Monterey, San Benito
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	Monterey, Santa Cruz
Yadon's Piperia (<i>Piperia yadonii</i>)	Monterey
Zayante band-winged grasshopper (<i>Trimerotropis infantilis</i>) ¹	Santa Cruz

¹ Species with Critical Habitat where MTP/SCS transportation projects are located.

Sources: USFWS IPaC (2021b)

e. Wildlife Movement Corridors

Wildlife movement corridors, or habitat linkages, are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Such linkages may serve a local purpose, such as providing a linkage between foraging and denning areas, or they may be regional in nature. Some habitat linkages may serve as migration corridors, wherein animals periodically move away from an area and then subsequently return. Others may be important as dispersal corridors for young animals. A group of habitat linkages in an area can form a wildlife corridor network.

The habitats within the link do not necessarily need to be the same as the habitats that are being linked. Rather, the link merely needs to contain sufficient cover and forage to allow temporary inhabitation by ground-dwelling species. Typically, habitat linkages are contiguous strips of natural areas, though dense plantings of landscape vegetation can be used by certain disturbance-tolerant species. Depending upon the species using a corridor, specific physical resources (such as rock outcroppings, vernal pools, or oak trees) may need to be located

within the habitat link at certain intervals to allow slower-moving species to traverse the link. For highly mobile or aerial species, habitat linkages may be discontinuous patches of suitable resources spaced sufficiently close together to permit travel along a route in a short period of time. Wildlife movement corridors can be both large and small scale.

The mountainous regions of Monterey, San Benito, and Santa Cruz counties may support wildlife movement on a regional scale while riparian corridors and waterways, may provide more local scale opportunities for wildlife movement throughout each County. The CDFW *Biogeographic Information and Observation System* (BIOS; CDFW 2021b) mapped three essential connectivity areas (ECAs) within Monterey, San Benito, and Santa Cruz counties. One is located throughout the inland mountainous region of Santa Cruz county. Another is located along the coastal mountainous region of Monterey County with a portion extending across the Salinas Valley and into the Diablo Range along the Monterey - San Benito County line. The last is located in the southeast portion of San Benito County and crossing into Fresno County. The ECAs are not regulatory delineations but have been identified by the California Essential Habitat Connectivity Project as lands likely important to wildlife movement between large, mostly natural areas at the statewide level. ECAs were mapped on a statewide level and should be considered areas identified at a coarse scale that can inform land planning efforts; however, ECAs do not include more detailed linkage designs developed at a finer resolution based on the needs of specific species and ecological processes.

Fourteen important movement corridors are also identified from the report, *Missing Linkages: Restoring Connectivity to the California Landscape* (Penrod et al., 2001). These movement corridors are generally associated with rivers and watercourses including the Pajaro Salinas Rivers and areas within the Santa Lucia Range, Santa Cruz Mountains and Diablo Range. These areas are identified as important movement corridors for species such as San Joaquin kit fox, steelhead, riparian birds, and other small carnivores.

4.4.2 Regulatory Setting

Federal, state, and local authorities, under a variety of statutes and guidelines, share regulatory authority over biological resources. The primary authority for general biological resources lies within the land use control and planning authority of local jurisdictions, which in this instance are the counties of Monterey, San Benito, and Santa Cruz, as well as other local jurisdictions including cities within these counties. The CDFW is a trustee agency for biological resources throughout the State as defined in CEQA and also has direct jurisdiction under the CFGC, which includes, but is not limited to, resources protected by the State of California under CESA. In addition, the Regional Water Quality Control Board is responsible agency for waters of the state.

a. Federal Laws, Regulations, and Policies

Endangered Species Act

Under the Federal Endangered Species Act (FESA), authorization is required to “take” a listed species. Take is defined under FESA Section 3 as “to harass, harm, pursue, hunt, shoot,

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wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Under federal regulation (50 CFR Sections 17.3, 222.102); “harm” is further defined to include habitat modification or degradation where it would be expected to result in death or injury to listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Critical habitat is a specific geographic area(s) that is essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery. FESA Section 7 outlines procedures for federal interagency cooperation to conserve federally listed species and designated critical habitat.

Section 7(a)(2) of FESA and its implementing regulations require federal agencies to consult with USFWS or National Marine Fisheries Service (NMFS) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of critical habitat. For projects where federal action is not involved and take of a listed species may occur, the project proponent may seek to obtain an incidental take permit under FESA Section 10(a). Section 10(a) allows USFWS to permit the incidental take of listed species if such take is accompanied by an HCP that includes components to minimize and mitigate impacts associated with the take.

The USFWS and NMFS share responsibility and regulatory authority for implementing FESA (7 USC Section 136, 16 USC Section 1531 et seq.).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act authorizes the Secretary of the Interior to regulate the taking of migratory birds. The act provides that it is unlawful, except as permitted by regulations, “to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, [...] any migratory bird, or any part, nest, or egg of any such bird” (16 USC Section 703(a)). The Bald and Golden Eagle Protection Act is the primary law protecting eagles, including individuals and their nests and eggs. The USFWS implements the Migratory Bird Treaty Act (16 United States Code [USC] Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668). Under the Act’s Eagle Permit Rule (50 CFR 22.26), USFWS may issue permits to authorize limited, non-purposeful take of bald eagles and golden eagles.

Marine Mammal Protection Act

Under the Marine Mammal Protection Act, established in 1972, all marine mammals are protected under federal law. This act prohibits hunting, harassment, capture, or killing of all marine mammals. This law protects cetaceans (whales, dolphins, and porpoises), pinnipeds (seals and sea lions), sirenians (manatees and dugongs), sea otters and polar bears within the waters of the United States.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) regulates marine fisheries in U.S. federal waters. The act was first passed in 1976 and revised in 1996 and 2007. The purpose of the act is to provide long-term biological and economic sustainability of U.S. marine fisheries.

The NMFS has regulatory authority for implementing the Magnuson-Stevens Act. The NMFS requires regional fishery management councils develop Fisheries Management Plans (FMP) specific to their regions, fisheries and fish stocks. For waters off the U.S. West Coast, the Pacific Fishery Management Council has developed four FMPs, which are implemented through our fisheries regulations for coastal pelagic species, groundfish species, highly migratory species and salmon species. These FMPs also identify Essential Fish Habitat (EFH) which is broadly defined as those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity.

Clean Water Act

Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers, with EPA oversight, has authority to regulate activities that result in discharge of dredged or fill material into wetlands or other “waters of the United States.” Perennial and intermittent creeks are considered waters of the United States if they are hydrologically connected to other jurisdictional waters. In achieving the goals of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) seeks to avoid adverse impacts and offset unavoidable adverse impacts on existing aquatic resources. Any discharge of dredged or fill material into jurisdictional wetlands or other jurisdictional “waters of the United States” would require a Section 404 permit from the USACE prior to the start of work. Typically, when a project involves impacts to waters of the United States, the goal of no net loss of wetlands is met by compensatory mitigation; in general, the type and location options for compensatory mitigation should comply with the hierarchy established by the Corp/EPA 2008 Mitigation Rule (USEPA 2021) (in descending order): (1) mitigation banks; (2) in-lieu fee programs; and (3) permittee-responsible compensatory mitigation. Also, in accordance with Section 401 of the Clean Water Act, applicants for a Section 404 permit must obtain water quality certification from the appropriate Regional Water Quality Control Board (RWQCB).

b. State Laws, Regulations, and Policies

Endangered Species Act and Fully Protected Species

CESA (Fish and Game Code Section 2050 et. seq.) prohibits take of State-listed threatened and endangered species without a CDFW incidental take permit. Take under CESA is restricted to direct harm of a listed species and does not prohibit indirect harm by way of habitat modification.

Protection of fully protected species is described in Fish and Game Code Sections 3511, 4700, 5050 and 5515. These statutes prohibit take or possession of fully protected species. Incidental take of fully protected species may be authorized under an approved NCCP.

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California Fish and Game Code Sections 3503, 3503.5 and 3511

California Fish and Game Code sections 3503, 3503.5 and 3511 describe unlawful take, possession, or destruction of birds, nests and eggs. Fully protected birds (CFGF Section 3511) may not be taken or possessed except under specific permit. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs.

California Fish and Game Code Sections 1360-1372

Sections 1360 through 1372 of the California Fish and Game Code comprise the Oak Woodlands Conservation Act. The act was enacted to protect oak woodland habitats that were being diminished by development, firewood harvesting, and agricultural conversions. The Oak Woodlands Conservation Program was established as a result of the act and is intended to provide project funding opportunities for private landowners, conservation organizations, and cities and counties to conserve and restore oak woodlands. The program authorizes the Wildlife Conservation Board to purchase oak woodland conservation easements and provide grants for land improvements and oak restoration efforts. Section 21083.4 of CEQA requires counties to determine if a project within their jurisdiction may result in conversion of oak woodlands that would have a significant adverse effect on the environment. If the lead agency determines that a project would result in a significant adverse effect on oak woodlands, mitigation measures to reduce the significant adverse effect of converting oak woodlands to other land uses are required.

Native Plant Protection Act

The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (CFGF Section 1900 et seq.). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Under Section 1913(c) of the NPPA, the owner of land where a rare or endangered native plant is growing is required to notify the department at least 10 days in advance of changing the land use to allow for salvage of the plant(s).

Section 1600 et seq. of the California Fish and Game Code

Section 1600 et seq. of the CFGF prohibits, without prior notification to CDFW, the substantial diversion or obstruction of the natural flow of, or substantial change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. In order for these activities to occur, the CDFW must receive written notification regarding the activity in the manner prescribed by the department and may require a lake or streambed alteration agreement. Lakes, ponds, perennial and intermittent streams and associated riparian vegetation, when present, are subject to this regulation.

Natural Community Conservation Planning Act

The Natural Communities Conservation Planning (NCCP) Act was established by the California Legislature, is directed by the CDFW, and is implemented by the state, as well as public and private partnerships to protect habitat in California. The NCCP Act takes a regional approach to preserving habitat. An NCCP identifies and provides for the regional protection of plants, animals, and their habitats, while allowing compatible and appropriate economic activity. Once an NCCP has been approved, CDFW may provide take authorization for all covered species, including fully protected species, Section 2835 of the CFGC.

Porter-Cologne Water Quality Control Act

The State Water Resources Control Board (SWRCB) and each of nine local RWQCB has jurisdiction over “waters of the State” pursuant to the Porter-Cologne Water Quality Control Act which are defined as any surface water or groundwater, including saline waters, within the boundaries of the State. SWRCB adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. The Procedures consist of four major elements: 1) a wetland definition; 2) a framework for determining if a feature that meets the wetland definition is a water of the state; 3) wetland delineation procedures; and 4) procedures for the submittal, review and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities (SWRCB 2021).

California Coastal Act

The mission of the California Coastal Commission (CCC) is to “protect, conserve, restore and enhance environmental and human-based resources of the California coast and ocean for environmentally sustainable and prudent use by current and future generations.” The California Coastal Act of 1976 contains specific policies aimed at preserving biological resources, such as wetlands, riparian habitat, and marine habitat. CCC policies, as codified under the California Coastal Act of 1976, are implemented through Coastal Development Permits issued under Local Coastal Programs administered by counties and cities that lie within the coastal zone.

California Department of Transportation - California Streets and Highways Code Section 156.3

Assessments and remediation of potential barriers to fish passage for transportation projects using State or federal transportation funds are required. Such assessments must be conducted for any projects that involve stream crossings or other alterations and must be submitted to the CDFW. New projects must be constructed so that they do not present a barrier to fish passage.

c. Local Laws, Regulations, and Policies

General Plans typically contain elements which address protection of biological resources. Typically, these elements consist of goals, policies and actions that protect natural resources, such as environmentally sensitive habitats, special-status species, native trees, creeks, wetland, and riparian habitats. Local jurisdictions approve development if it is consistent with those elements of the General Plan.

Some resources are afforded protection via local ordinances such as those that protect trees, riparian corridors, and environmentally sensitive habitats. Each county and many cities in the AMBAG region have municipal codes which protect natural resources and addresses compliance with environmental regulations. For example, local ordinances and policies may be in place that protect native and nonnative trees in urban landscapes, as well as in unincorporated county lands. These ordinances and policies vary in their definitions of protected trees (e.g., certain species, minimum diameter at breast height [dbh], trees that form riparian corridors or a combination thereof) and in the requirements for ordinance or policy compliance. In addition, counties and cities may have local ordinances or policies that are intended to protect other biological resources such as wetlands and drainages, riparian habitat, and other sensitive habitat areas.

Monterey County

The Conservation/Open Space Element of the Monterey County General Plan (Monterey County 2010) includes goals to protect the biological resources found within the county. The goals and policies of the Monterey County General Plan are aimed at protecting and conserving listed species and their habitat, critical habitat, as well as coastal, marine and river environments. In addition, the Monterey County General Plan includes Policy OS-5.24 which requires all discretionary projects as well as roadway and public infrastructure projects provide movement opportunities for wildlife.

Cities in Monterey County

The City of Monterey's General Plan (City of Monterey 2019), adopted in January 2005 and last amended in June 2019, contains goals, policies, and programs related to biological resources in the Conservation Element and Open Space Element. Goal d. of the Conservation Element contains policies and programs to protect the character and composition of existing native vegetation communities and protect biological diversity represented by special-status plant and wildlife species (Policies d.1, d.3, d.4, d.5, and d.6; Programs d.6.1 through d.6.6). Goals a. and b. in the open Space Element recognizes that the Monterey Bay is the City's most significant natural resource and includes policies to preserve the Monterey Bay and the shoreline and beaches in providing access to the Monterey Bay as well as preserving specific areas for habitat conservation (Policies a.2, a.3, b.1, b.2, and b.4).

The Conservation/Open Space Element for the City of Salinas (City of Salinas 2006) includes Goal GOS-5 to protect and enhance the remaining identified and significant ecological and biological resources within and surrounding the community. This is supported by Policies

COS-5.1 and -5.2 specifically protecting creek and river corridors as well as regional parks. The Conservation/Open Space Element also includes an Implementation Program with actions to implement the adopted General Plan Policies. The Implementation Program outlines the responsible implementing agency or department as well as source of funding for each action relating to ecological and biological resources.

San Benito County

The Natural and Cultural Resources Element of the San Benito County 2035 General Plan (San Benito County 2015) includes goals to protect the biological resources found within the county. The goals and policies are aimed at protecting and preserving wildlife habitat as well as other important habitat areas such as wetlands, as well as includes a goal to protect water quantity and quality in natural water bodies within the county. In addition, the San Benito County 2035 General Plan includes Policies NCR-2.6 and -2.7 aimed at protecting and promoting regeneration of oak woodlands and requires applicants to prepare a mitigation plan where oak impacts cannot be avoided, as well as Policy NCR-2.4 that indicates that the County shall protect and enhance wildlife migration and movement corridors and requires road and development sites to be designed to maintain habitat connectivity.

Cities in San Benito County

The City of Hollister General Plan (City of Hollister 2005), adopted in 2005 and amended in 2007, contains goals, policies, and implementation measures related to biological resources in the Natural Resources and Conservation Element. Goal NRC 1 contains policies and implementation measures to assure enhanced habitat for native plants and animals, and special protection for threatened or endangered species. Policies NRC 1.1 through NRC 1.7 support that goal and include specific implementation measures such as requiring wetlands delineations (NRC.X) and requiring pre-construction surveys for nesting raptors (NRC.U) and burrowing owls (NRC.K).

The City of San Juan Bautista's 2035 General Plan's Conservation Element (City of San Juan Bautista 2015) contains goals, objectives, policies, and programs related to biological resources. Goal CO 4 aims for the protection of wildlife and associated habitats through the protection of state and federally listed species and their critical habitats (Objective CO 4.1). Policy CO 4.1.1 is to comply with federal and state laws regarding the protection of special-status species and habitats.

Santa Cruz County

The Conservation and Open Space Element of the Santa Cruz County General Plan and Local Coastal Program (Santa Cruz County 1994) includes objectives to protect the biological resources found within the county. The objectives and policies are aimed at maintaining biological diversity, preserving, protecting and restoring riparian corridors and wetlands, as well as other aquatic and marine habitats. The Santa Cruz General Plan and Local Coastal Program also includes Policies 5.1.1 through 5.1.11 aimed at protecting Environmentally Sensitive Habitat Areas.

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Cities in Santa Cruz County

The City of Santa Cruz 2030 General Plan (City of Santa Cruz 2012) contains goals, policies, and actions related to biological resources in the Natural Resources and Conservation Element. Goal NRC 1 contains policies and actions to protect, enhance, and sustainably manage creek systems, riparian environments, and wetlands. Policies NRC 1.1 through 1.3 support that goal by requiring setbacks adjacent to creeks and wetlands (Action NRC 1.1.1), re-vegetating plants native to creeks and wetlands (Action NRC 1.1.4), and conserving creek, riparian, and wetland resources in the City (Action NRC 1.3.1).

The City of Watsonville’s Environmental Resources Management Element in their Draft 2030 General Plan Update’s goals, policies and implementation pertains to water conservation (City of Watsonville 2012). In service of Policy 11.1.1 to seek to protect ecologically sensitive areas, “The City shall protect ecologically sensitive areas and provide for their continued health through the use of appropriate setbacks and limitations on potentially detrimental activities.” (Implementation 11.1.14). Additionally, “the City shall support the restoration of riparian and wetland habitat by requiring it as a condition of development where it abuts private projects, and by seeking grants and other resources for restoration in other areas (Implementation 11.1.17).

Many cities within the AMBAG region have similar biological resources goals and policies in their respective general plans.

Fort Ord Habitat Management Plan/Conservation Plan

The 1997 Fort Ord Habitat Management Plan was created after the closure of the former Fort Ord to conserve nearly two-thirds of the former army base as open space. This would become the Fort Ord Multi-Species Habitat Conservation Plan (HCP) after the final EIR, which was published in May 2020, is certified. A public draft of the HCP was circulated in conjunction with final EIR. However, the HCP was never adopted, and the Fort Ord Reuse Authority has since ended its tenure.

4.4.3 Impact Analysis

a. Methodology and Significance Thresholds

Data used for this analysis include aerial photographs, topographic maps and data on special-status species and sensitive habitat information obtained from the CDFW CNDDDB (2021a) and BIOS (2021b), the CNPS Online Inventory of Rare and Endangered Plants (CNPS 2021), the USFWS IPaC (2021b), and accepted scientific texts to identify species. The USFWS Critical Habitat Mapper (2021c) and USFWS NWI (2021a) were also queried. Potential areas of disturbance associated with the 2045 MTP/SCS were compared to the identified biological resource occurrences to determine whether an impact may occur.

Appendix G of the *State CEQA Guidelines* identifies the following criteria for determining whether a project’s impacts would have a significant impact on biological resources:

Biological Resources

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
4. 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;
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

b. Project Impacts and Mitigation Measures

The following section describes biological resources impacts associated with the transportation improvements and future land use scenario included in the 2045 MTP/SCS. Impacts and associated mitigation measures would apply in Monterey, San Benito, and Santa Cruz counties. Section 4.4.2.c summarizes the specific 2045 MTP/SCS transportation projects that could result in the types of biological resources impacts discussed below. Due to the programmatic nature of the 2045 MTP/SCS, a precise, project level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2045 MTP/SCS could result in the impacts as described in the following section.

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Threshold 1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service

Impact BIO-1 IMPLEMENTATION OF TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE 2045 MTP/SCS WOULD HAVE SUBSTANTIAL ADVERSE IMPACTS ON SPECIAL-STATUS PLANT AND ANIMAL SPECIES, EITHER DIRECTLY OR THROUGH HABITAT MODIFICATIONS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

For the purposes of this analysis, special-status plant and animal species include those designations described under Section 4.4.1.d above. Most of the transportation improvements proposed under the 2045 MTP/SCS consist of expansions or modifications of existing facilities. However, these projects would impact areas occupied by special-status plant and animal species. As mentioned above, there are 388 special-status species known to occur or with potential to occur within the AMBAG region. Seventy-one of these species are given high levels of protection by the federal government through listing under FESA or by the State government through listing under CESA or designation of Fully Protected status (animals only). The remaining species shown in Appendix D are protected through CEQA and/or through local ordinances. Most special-status species have very limited ranges within the subject counties and have specific habitat requirements. Many special-status species may also tend to be associated with sensitive habitats, such as riparian habitats and drainages.

Because of the programmatic nature of the 2045 MTP/SCS, a precise, project level analysis of the specific impacts of individual transportation projects on special-status species is not possible. As noted in Section 2.5.2, future projects envisioned in the 2045 MTP/SCS are planned and designed, site specific environmental review will be conducted by the agencies responsible for implementing such projects. Nevertheless, some special-status species would experience substantial adverse effects affected at the locations where projects under the 2045 MTP/SCS would occur, significant impacts would therefore occur.

For example, transportation projects such as those that occur over or in the vicinity of rivers and creeks are within suitable habitat for species such as California red-legged frog (Federally Threatened and State Species of Special Concern), steelhead – South-Central California Coast DPS (Distinct Population Segment), steelhead – Central California Coast DPS (both DPS are federally threatened and state SSC) and Coho Salmon – Central California Coast ESU (Evolutionary Significant Unit) (federally endangered and state endangered). Many of the creeks and rivers found within coastal watersheds, such as those in Monterey and Santa Cruz counties, are considered accessible by steelhead and currently support or have historically supported steelhead and Coho salmon populations (Santa Cruz County 2015b).

In addition to the rivers and creeks that may be impacted, future transportation projects under the 2045 MTP/SCS could impact upland habitats and the sensitive species that may occupy them. For example, coast horned lizards (*Phrynosoma blainvillii*), a State SSC, may be present in scrub, grassland, and some woodland habitats near roads where projects could

occur. The federally threatened and state threatened California tiger salamander can also occupy annual grassland habitats containing small mammal burrows if such habitat is within 1.24 miles (the dispersal distance of the species) of known or potentially suitable breeding habitat. Several special-status bat species may be affected by proposed projects where they occur under bridges or similar structures, or in native habitat adjacent to construction areas. Furthermore, the wide variety of habitats within the 2045 MTS/SCS area can support many species of nesting birds, including sensitive species such as the state Fully Protected white-tailed kite (*Elanus leucurus*) and the state SSC burrowing owl (*Athene cunicularia*). Disturbance of special-status plants could result in reductions in local population size, habitat fragmentation, or lower reproductive success.

Direct impacts to special-status species include injury or mortality occurring during implementation and/or operation of transportation projects under the 2045 MTP/SCS. Direct impacts also include habitat modification and loss such that it results in mortality or otherwise alters foraging and breeding behaviors substantially enough to cause injury. Indirect impacts could be caused by the spread of invasive non-native species that out-compete native species and/or alter habitat towards a state that is unsuitable for special-status species. For example, the spread of certain weed species can reduce the biodiversity of native habitats, potentially eliminating special-status plant species and reducing the availability of suitable forage and breeding sites for special-status animal species. Indirect impacts could also result from increased access by humans and domestic animals, particularly in areas where trails may be planned. Increased human and domestic animal (especially dog and cat) presence disrupt the normal behaviors of native animal species and foster the spread of non-native invasive plant species.

In addition to direct and indirect impacts that may result from transportation improvement projects, the 2045 MTP/SCS also contains a future land use scenario that emphasizes infill development and transit oriented development (TOD). This land use scenario focuses future development concentrated in existing urbanized areas, which would minimize impacts to biological resources in non-urbanized areas. However, it is possible that sensitive plant and animal species would be located on future infill and TOD sites, as well as more undeveloped project sites. As a result, future development projects would impact plant and animal species that may be present on or in proximity to undeveloped areas. Many special-status animal species are associated with creeks even in the most densely developed urban areas. Both native and non-native trees and shrubs throughout urban areas may support nesting birds and other sensitive species, such as monarch butterflies (*Danaus plexippus*). Impacts of land use projects would be significant because substantial adverse effects on special-status species would occur.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall, and transportation project sponsor agencies can and should, implement the following mitigation measures for applicable transportation projects identified in Appendix B, and where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use

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projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

BIO-1(a) Biological Resources Screening and Assessment

On a project by project basis, a preliminary biological resource screening shall, or can and should, be performed as part of the environmental review process to determine whether the project has any potential to impact biological resources. If it is determined that the project has no potential to impact biological resources, no further action is required. If the project would have the potential to impact biological resources, prior to construction, the implementing agency shall retain a qualified biologist to conduct a biological resources assessment (BRA) to document the existing biological resources and to determine the potential impacts to those resources. Depending on the results of the BRA, design alterations, further technical studies (i.e., protocol surveys) and/or consultations with the USFWS, CDFW and/or other local, state, and federal agencies may be required. The following mitigation measures [BIO-1(b) through BIO-1(j)] shall be incorporated only as applicable into the BRA for projects where specific resources are present or may be present and impacted by the project.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

BIO-1(b) Special-Status Plant Species Surveys

If completion of the project specific BRA determines that special-status plant species have potential to occur on-site, the implementing agency shall require surveys for special-status plants to be completed prior to any vegetation removal, grubbing, or other construction activity of each project (including staging and mobilization). The surveys shall be floristic in nature and shall be seasonally timed to coincide with the target species. Surveys shall be conducted in accordance with the most current protocols established by the CDFW, USFWS, and the local jurisdictions if said protocols exist. A report of the survey results shall be submitted to the implementing agency for review. If special-status plant species are identified, mitigation measure BIO-1(c) shall apply.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during project permitting and environmental review, prior to project construction but no earlier than one year before construction commences.

BIO-1(c) Special-Status Plant Species Avoidance, Minimization and Mitigation

If state- or federally listed and/or CRPR 1 and 2 species are found during special-status plant surveys [pursuant to mitigation measure BIO-1(b)], then the implementing agency shall require the project to be re-designed to avoid impacting these plant species to the extent feasible. If CRPR 3 and 4 species are found, the biologist shall evaluate to determine if they meet criteria to be considered special-status, and if so, the same process as identified for CRPR 1 and 2 species shall apply.

If special-status plants species cannot be avoided and would be impacted by a project implemented under the 2045 MTP/SCS, the implementing agency shall require all impacts shall be mitigated at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist for each species as a component of habitat restoration. A restoration plan shall be prepared and submitted to implementing agency overseeing the project for approval.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be implemented prior to issuance of project construction permits and approvals.

BIO-1(d) Endangered/Threatened Animal Species Habitat Assessment and Protocol Surveys

If the BRA determines that suitable habitat may be present for federally and/or state endangered or threatened animal species, the implementing agency shall require protocol habitat assessments/surveys to be completed in accordance with CDFW and/or USFWS/NMFS protocols prior to issuance of any construction permits/project approvals.

Alternatively, in lieu of conducting protocol surveys, the implementing agency may choose to assume presence within the project footprint and proceed with development of appropriate avoidance measures, consultation and permitting, as applicable.

If the target species is detected during protocol surveys, or protocol surveys are not conducted and presence assumed based on suitable habitat, mitigation measure BIO-1(e) shall apply.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be implemented prior to issuance of project construction permits and approvals.

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BIO-1(e) Endangered/Threatened Animal Species Avoidance and Compensatory Mitigation

If habitat is occupied or presumed occupied by federal and/or state listed species and would be impacted by the project, the implementing agency shall require re-design of the project in coordination with a qualified biologist to avoid impacting occupied/presumed occupied habitat to the extent feasible. If occupied or presumed occupied habitat cannot be avoided, the implementing agency shall provide the total acreages for habitat that would be impacted prior to the issuance of construction permits/approvals. The implementing agency shall purchase credits at a USFWS, NMFS and/or CDFW approved conservation bank if available for the affected species and/or provide compensatory mitigation to offset impacts to federal and/or state listed species habitat.

Compensatory mitigation shall be provided at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist for permanent impacts. Compensatory mitigation may be combined/nested with special-status plant species and sensitive community restoration where applicable. Temporary impact areas shall be restored to pre-project conditions.

If on and/or off site mitigation sites are identified the implementing agency shall retain a qualified biologist to prepare a Habitat Mitigation and Monitoring Plan (HMMP) to ensure the success of compensatory mitigation sites that are to be conserved for compensation of permanent impacts to federal and/or state listed species. The HMMP shall identify long term site management needs, routine monitoring techniques, techniques and success criteria, and shall determine if the conservation site has restoration needs to function as a suitable mitigation site. The HMMP shall be submitted to the agency overseeing the project for approval.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be implemented prior to issuance of project construction permits and approvals.

BIO-1(f) Endangered/Threatened Species Avoidance and Minimization During Construction

The implementing agency shall apply the following measures to aquatic and terrestrial species, where appropriate. Implementing agencies shall select from these measures as appropriate depending on site conditions, the species with potential for occurrence and the results of the biological resources screening and assessment (measure BIO-1[a]).

- Pre-construction surveys for federal and/or state listed species with potential to occur shall be conducted where suitable habitat is present by a qualified biologist not more than 48 hours prior to the start of construction activities. The survey area shall include the proposed disturbance area and all proposed ingress/egress routes, plus a 100-foot

buffer. If any life stage of federal and/or state listed species is found within the survey area, the qualified biologist shall recommend an appropriate course of action, which may include consultation with USFWS, NMFS and/or CDFW. The results of the pre-construction surveys shall be submitted to the implementing agency for review and approval prior to start of construction.

- Ground disturbance shall be limited to the minimum necessary to complete the project. The project limits of disturbance shall be flagged. Areas of special biological concern shall have highly visible orange construction fencing.
- All projects occurring within/adjacent to aquatic habitats (including riparian habitats and wetlands) shall be completed between April 1 and October 31, to avoid impacts to sensitive aquatic species.
- All projects occurring within or adjacent to sensitive habitats that may support federally and/or state endangered/threatened species shall have a qualified biologist present during all initial ground disturbing/vegetation clearing activities. Once initial ground disturbing/vegetation clearing activities have been completed, said biologist shall conduct daily pre-activity clearance surveys for endangered/threatened species. Alternatively, and upon approval of the CDFW and/or USFWS/NMFS or as outlined in project permits, said biologist may conduct site inspections at a minimum of once per week to ensure all prescribed avoidance and minimization measures are being fully implemented.
- No endangered/threatened species shall be captured and relocated without authorization from the CDFW and/or USFWS/NMFS.
- If pumps are used for dewatering activities, all intakes shall be completely screened with wire mesh not larger than five millimeters to prevent animals from entering the pump system.
- If at any time during construction of the project an endangered/threatened species enters the construction site or otherwise may be impacted by the project, all project activities shall cease. At that point, a qualified biologist shall recommend an appropriate course of action, which may include consultation with USFWS, NMFS and/or CDFW.
- All vehicle maintenance/fueling/staging shall occur not less than 100 feet from any riparian habitat or water body. Suitable containment procedures shall be implemented to prevent spills.
- No equipment shall be permitted to enter wetted portions of any affected drainage channel.
- All equipment operating within streambeds (restricted to conditions in which water is not present) shall be in good conditions and free of leaks. Spill containment shall be installed under all equipment staged within stream areas and extra spill containment and clean up materials shall be located in close proximity for easy access.
- At the end of each workday, excavations shall be secured with cover or a ramp shall be provided to prevent wildlife entrapment.

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- All trenches, pipes, culverts or similar structures shall be inspected for animals prior to burying, capping, moving, or filling.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be implemented prior to and ongoing through project construction.

BIO-1(g) Non-Listed Special-Status Animal Species Avoidance and Minimization

Depending on the species identified in the BRA, the implementing agency shall select from among the following to reduce the potential for impacts to non-listed special-status animal species:

- Pre-construction clearance surveys shall be conducted within 14 days prior to the start of construction (including staging and mobilization) to identify all special-status animal species that may occur on-site. All non-listed special-status species shall be relocated from the site. A report of the pre-construction survey shall be submitted to the implementing agency for their review and approval prior to the start of construction.
- A qualified biologist shall be present during all initial ground disturbing activities, including vegetation removal, to recover special-status animal species unearthed by construction activities.
- Upon completion of the project, a qualified biologist shall prepare a final compliance report documenting all compliance activities implemented for the project, including the pre-construction survey results.
- If special-status bat species may be present and impacted by the project, within 30 days of the start of construction a qualified biologist shall conduct presence/absence surveys for special-status bats, in consultation with the CDFW, where suitable roosting habitat is present. If active bat roosts or colonies are present, the biologist shall evaluate the type of roost to determine the next step.
 - If a maternity colony is present, all construction activities shall be postponed within a 250-foot buffer around the maternity colony until it is determined by a qualified biologist that the young have dispersed or as recommended by CDFW through consultation. Once it has been determined that the roost is clear of bats, the roost shall be removed immediately.
 - If a roost is determined by a qualified biologist to be used by a large number of bats (large hibernaculum), alternative roosts, such as bat boxes if appropriate for the species, shall be designed and installed near the project site. The number and size of alternative roosts shall be determined through consultations with the CDFW.
 - If other active roosts are located, exclusion devices such as valves, sheeting or flap-style one-way devices that allow bats to exit but not re-enter roosts discourage bats from occupying the site.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be implemented prior to, during, and after project construction.

BIO-1(h) Preconstruction Surveys for Nesting Birds

For construction activities occurring during the nesting season (generally February 1 to September 15), surveys for nesting birds covered by the CFGC, the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act shall be conducted by a qualified biologist retained by the implementing agency no more than 10 days prior to vegetation removal activities.

A qualified biologist shall conduct preconstruction surveys for raptors. The survey for the presence of bald and golden eagles shall cover all areas within of the disturbance footprint plus a one-mile buffer where access can be secured. The survey area for all other nesting bird and raptor species shall include the disturbance footprint plus a 300-foot and 500-foot buffer, respectively.

If active nests (nests with eggs or chicks) are located, the qualified biologist shall establish an appropriate avoidance buffer ranging from 250 to 500 feet based on the species biology and the current and anticipated disturbance levels occurring in vicinity of the nest.

For bald or golden eagle nests identified during the preconstruction surveys, an avoidance buffer of up to one mile shall be established on a case-by-case basis in consultation with the USFWS and CDFW. The size of the buffer may be influenced by the existing conditions and disturbance regime, relevant landscape characteristics, and the nature, timing and duration of the expected disturbance. The buffer shall be established between February 1 and August 31; however, buffers may be relaxed earlier than August 31 if a qualified ornithologist determines that a given nest has failed or that all surviving chicks have fledged and the nest is no longer in use.

A report of these preconstruction nesting bird surveys and nest monitoring (if applicable) shall be submitted to the implementing agency for review and approval prior to the start of construction.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be implemented once prior to commencement of project construct and then during construction activities if needed.

BIO-1(i) Worker Environmental Awareness Program (WEAP)

Prior to initiation of construction activities, all personnel associated with project construction shall attend WEAP training, conducted by a qualified biologist retained by the implementing agency, to aid workers in recognizing special-status resources and review of the limits of

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construction and mitigation measures required. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers and other personnel involved with construction of the project.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

Significance After Mitigation

Compliance with the above mitigation measures would reduce impacts to special-status species and their habitat to less than significant levels because the mitigation measures require pre-project surveys and biological monitoring, focused biological surveys, avoidance or minimization of project related disturbance or loss of special-status species, compensation for disturbed or loss of special-status species habitat and coordination with permitting agencies, as required prior to project implementation. However, it cannot be guaranteed that all future project level impacts to special-status species can be mitigated to a less than significant level for all species. Additionally, complete avoidance is the only mitigation for fully protected species, which may not be feasible under some circumstances. There are no other feasible potential mitigation measures. Therefore, impacts would remain significant and unavoidable.

Threshold 2: 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 the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service

Threshold 3: Have a substantial adverse effect on state or federally protected wetlands (including but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means

Impact BIO-2 IMPLEMENTATION OF TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE 2045 MTP/SCS WOULD RESULT IN SUBSTANTIAL ADVERSE IMPACTS ON SENSITIVE HABITATS, INCLUDING SENSITIVE NATURAL COMMUNITIES, AND STATE AND FEDERALLY PROTECTED WETLANDS. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Transportation improvement projects and land use development that may be implemented under the 2045 MTP/SCS have the potential to impact sensitive habitats, including sensitive natural communities and wetlands, as mapped on Figure 4.4-4, Figure 4.4-5, and Figure 4.4-6. Due to the programmatic nature of this analysis, the extent and severity of the impacts is currently unknown. Some examples of potential impacts include but are not limited to: construction and reconstruction/widening of bridges over rivers and creeks, including the Salinas River, San Benito River, Branciforte Creek and Soquel Creek. These types of projects

would have potential to impact riparian areas, as well as water bodies. In addition, projects such as multiuse trails and bike paths may also involve development along riparian corridors or construction of bridges across rivers and creeks. Riparian areas provide wildlife habitat and movement corridors, enabling both terrestrial and aquatic organisms to move along river systems between areas of suitable habitat. Construction of the proposed facilities could have both direct impacts associated with the disturbance of riparian flora and fauna and indirect impacts caused by increased erosion and sedimentation, which can adversely affect downstream water quality. Construction could also impact aquatic features protected by CDFW and require a Lake and Streambed Alteration Agreement. These features include rivers, streams, and lakes, including the banks of these features.

In addition, other sensitive habitats, including oak woodlands, could occur at locations of transportation improvement projects and land use development sites. As noted in Section 4.4.1.c, vegetation Alliances with State ranks of S1-S3 are considered imperiled and thus, potentially of special concern and sensitive (CDFW 2020). Impacts to these sensitive communities, including oak woodlands, would be significant.

Direct impacts to sensitive habitats include loss of habitat during construction of individual projects. Indirect impacts include habitat degradation caused by the introduction of invasive plant species incidentally from construction equipment and through selection of invasive landscape plants, as well as erosion of disturbed areas.

The future land use scenario envisioned by the 2045 MTP/SCS would emphasize development within existing urbanized areas, although some development would occur in more undisturbed areas. As a result, future infill and TOD projects are likely to result in only limited impacts riparian habitat or sensitive habitat, though areas that have been relatively free of ground disturbance may contain sensitive native habitats such as central dune scrub, oak woodlands, or northern maritime chaparral or other vegetation alliances and associations that are deemed sensitive by the CDFW. Furthermore, some areas mapped by CWHR as somewhat disturbed habitats, such as annual grasslands, may at the local scale include sensitive native vegetation with unique assemblages of native plants, such as areas dominated by native wildflowers, vernal pools and native grasslands. Impacts would be significant.

In conclusion, implementation of the 2045 MTP/SCS would have substantial adverse impacts on sensitive habitats, including sensitive natural communities, and state and federally protected wetlands, and this impact is therefore significant.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall, and transportation project sponsor agencies can and should, implement the following mitigation measures for applicable transportation projects identified in Appendix B, where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

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BIO-2(a) Aquatic Resources Delineation and Impact Avoidance

If the results of measure BIO-1(a) indicates projects implemented under the 2045 MTP/SCS occur within or adjacent to wetland, drainages, riparian habitats, or other areas that may fall under the jurisdiction of the CDFW, USACE, RWQCB and/or CCC, a qualified biologist shall complete an aquatic resources delineation in accordance with the requirement set forth by each agency. The result shall be submitted to the implementing agency, USACE, RWQCB, CDFW and/or CCC, as appropriate, for review and approval, and the project shall be designed to minimize impacts to jurisdictional areas to the extent feasible. The delineation shall serve as the basis to identify potentially jurisdictional areas to be protected during construction, through implementation of the avoidance and minimization identified in measure B-2(f).

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

BIO-2(b) Wetlands, Drainages, and Riparian Habitat Restoration

Impacts to jurisdictional wetlands, drainages, and riparian habitat shall be mitigated at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist retained by the implementing agency, and shall occur on-site or as close to the impacted habitat as possible. A mitigation and monitoring plan shall be developed by a qualified biologist and submittal to the regulatory agency overseeing the project for approval. Alternatively, mitigation shall be accomplished through purchase of credits from an approved wetlands mitigation bank.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

BIO-2(c) Landscaping Plan

If landscaping is proposed for a specific project, a qualified biologist/landscape architect retained by the implementing agency shall prepare a landscape plan. Drought tolerant, locally native plant species shall be used. Noxious, invasive and/or non-native plant species that are recognized on the Federal Noxious Weed List, California Noxious Weeds List and/or California Invasive Plant Council Inventory shall not be permitted. Species selected for planting shall be regionally appropriate native species that are known to occur in the adjacent native habitat types.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

BIO-2(d) Sensitive Natural Community Avoidance and Mitigation

If the results of measure BIO-1(a) indicates projects implemented under the 2045 MTP/SCS would impact sensitive natural communities in addition to riparian habitat which is addressed by Measure BIO-2(b), the implementing agency shall avoid impacts to sensitive natural communities through final project design modifications if feasible.

If the implementing agency determines that sensitive natural communities cannot be avoided, impacts shall be mitigated on-site or offsite at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist based on any applicable resource agency guidelines. Temporarily impacted areas shall be restored to pre-project conditions. A Restoration Plan shall be developed by a qualified biologist and submitted to the implementing agency.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

BIO-2(e) Invasive Weed Prevention and Management Program

Prior to start of construction for each project that occurs within or adjacent to native habitats, an Invasive Weed Prevention and Management Program shall be developed by a qualified biologist retained by the implementing agency to prevent invasion of native habitat by non-native plant species. The plan shall be submitted to the implementing agency for review and approval. A list of target species shall be included, along with measures for early detection and eradication.

The plan, which shall be implemented by the implementing agency, shall also include, but not be limited to, the following measures to prevent the introduction of invasive weed species:

- During construction, limit the use of imported soils for fill. If the use of imported fill material is necessary, the imported material must be obtained from a source that is known to be free of invasive plant species.
- To minimize colonization of disturbed areas and the spread of invasive species, the contractor shall stockpile topsoil and redeposit the stockpiled soil after construction or transport the topsoil to a permitted landfill for disposal.
- All erosion control materials, including straw bales, straw wattles, or mulch used on-site must be free of invasive species seed.

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- Exotic and invasive plant species shall be excluded from any erosion control seed mixes and/or landscaping plant palettes associated with the proposed project.
- All disturbed areas shall be hydroseeded with a mix of locally native species upon completion of work in those areas.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during project permitting and environmental review, and implemented prior to project construction and during construction activities.

BIO-2(f) Wetlands, Drainages, and Riparian Habitat Best Management Practices During Construction

The following best management practices shall be required by the implementing agency for development within or adjacent to wetlands, drainages, or riparian habitat:

- Access routes, staging and construction areas shall be limited to the minimum area necessary to achieve the project goal and minimize impacts to other waters including locating access routes and ancillary construction areas outside of jurisdictional areas.
- To control sedimentation during and after project implementation, appropriate erosion control materials shall be deployed to minimize adverse effects on jurisdictional areas in the vicinity of the project.
- Project activities within the jurisdictional areas should occur during the dry season (typically between June 1 and November 1) in any given year, or as otherwise directed by the regulatory agencies.
- During construction, no litter or construction debris shall be placed within jurisdictional areas. All such debris and waste shall be picked up daily and properly disposed of at an appropriate site.
- Raw cement, concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic species resulting from project related activities, shall be prevented from contaminating the soil and/or entering wetlands, drainages or riparian habitat.
- All refueling, maintenance and staging of equipment and vehicles shall occur at least 100 feet from bodies of water and in a location where a potential spill would not drain directly toward aquatic habitat (e.g., on a slope that drains away from the water source). Prior to the onset of work activities, a plan must be in place for prompt and effective response to any accidental spills.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This

mitigation measure shall, or can and should, be applied during project permitting and environmental review, and implemented prior to project construction and during construction activities.

Significance After Mitigation

Compliance with the above mitigation measures would reduce impacts to sensitive communities and wetlands to less than significant levels because the mitigation measures require focused biological surveys, best management practices to avoidance or minimization impacts, compensation for disturbed or loss of sensitive communities and wetlands and coordination with permitting agencies, as required prior to project implementation. However, it cannot be guaranteed that all future project level impacts can be mitigated to a less than significant level for all sensitive habitats. There are no other feasible potential mitigation measures. As such, impacts would remain significant and unavoidable.

Threshold 4: 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

Impact BIO-3 IMPLEMENTATION OF TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE 2045 MTP/SCS WOULD SUBSTANTIALLY INTERFERE WITH WILDLIFE MOVEMENT, INCLUDING FISH MIGRATION, AND/OR IMPEDE THE USE OF A NATIVE WILDLIFE NURSERY. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

As discussed above in Section 4.4.1, *Setting*, the AMBAG region contains three mapped ECAs (CDFW 2021b). These areas are composed primarily of wildlands but also include some agricultural and developed areas (mostly rural residential) and many are bisected by major roadways. As such, several transportation projects in the 2045 MTP/SCS may overlap with areas of mapped ECAs or other locally important wildlife movement corridors including rivers and watercourses within the region.

Transportation infrastructure projects in the 2045 MTP/SCS primarily involve expansion of existing facilities in urbanized or already developed areas, rather than the construction of new or extension of existing infrastructure into undeveloped portions of each county. However, expansion of existing roadways can decrease connectivity as widening of roads creates a larger barrier and make movement more difficult, especially if roadways prior to widening and expansion were narrow enough and traffic volumes low enough that movement was still possible. Construction of new roadways and crossings (across rivers and drainages) would introduce new potential barriers to movement. In addition to the roadways themselves, transportation improvement projects could include new segments of fencing or walls that could hinder wildlife movement. Temporary disruption of wildlife movement could also occur during construction if temporary water diversions are required for projects located within creeks and rivers. For example, temporary water diversions may impact movement of native and migratory salmonid species. Likewise, improperly designed culverts beneath roadways can impede fish migration. In addition, construction activity and noise

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could also temporarily alter the behavior wildlife in the area and therefore temporarily disrupt wildlife movement patterns.

New roadways, bike paths, and trails would also increase human activity in areas where sensitive biological resources could occur and have the potential to indirectly disrupt behavior of animals which could in turn disrupt wildlife movement patterns. In particular, proposed bridge, trail and bikeway and new road construction projects could increase human activity (and domestic animals) in the vicinity of riparian areas, wildlife nurseries or corridors and potentially sensitive habitats. Increased noise and human presence during construction, as well as increased trash which may attract predators to the project site and discourage wildlife use of surrounding natural habitat.

The future land use scenario envisioned by the 2045 MTP/SCS would encourage infill and TOD within existing urbanized areas. The majority of the future infill and TOD projects would likely be in areas that provide limited or no wildlife movement, although some development would occur in more undisturbed areas. However, even the elimination of limited wildlife movement opportunities could further isolate areas of native habitat occupied by both sensitive and common native wildlife species.

As noted in Section 4.4.1.f, the County of Monterey and County of San Benito general plans include policies that require projects within the region to be designed to maintain wildlife movement and habitat connectivity. Nevertheless, based on the above analysis, impacts related to transportation projects and impacts related to the future land use scenario envisioned by the 2045 MTP/SCS would be significant.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall, and transportation project sponsor agencies can and should, implement the following mitigation measures for applicable transportation projects identified in Appendix B, where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

BIO-3(a) Project Design for Wildlife Connectivity

The implementing agency shall implement the following measures. All projects including long segments of fencing and lighting shall be designed to minimize impacts to wildlife. Where fencing or other project components is required for public safety concerns, these project components shall be designed to permit wildlife movement by incorporating design features such as:

- A minimum 16 inches between the ground and the bottom of the fence to provide clearance for small animals;
- A minimum 12 inches between the top two wires, or top the fence with a wooden rail, mesh, or chain link instead of wire to prevent animals from becoming entangled;

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- If privacy fencing is required near open space areas, openings at the bottom of the fence measure at least 16 inches in diameter shall be installed at reasonable intervals to allow wildlife movement, or the fence may be installed with the bottom at least 16 inches above the ground level;
- If fencing or other project components must be designed in such a manner that wildlife passage would not be permitted, wildlife crossing structures shall be incorporated into the project design as appropriate; and
- Lighting installed as part of any project shall be designed to be minimally disruptive to wildlife (see mitigation measure AES-3(a) Roadway Lighting for lighting requirements).

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

BIO-3(b) Maintain Connectivity in Drainages

The implementing agency shall implement the following measures. Permanent structures shall be avoided to the extent feasible within any drainage or river that serves as a wildlife migration corridor that would impede wildlife movement.

In addition, upon completion of construction within any drainage, areas of stream channel and banks that are temporarily impacted shall be returned to pre-construction contours and in a condition that allows for unimpeded passage through the area once the work has been complete.

If water is to be diverted around work sites, a diversion plan shall be submitted to the implementing agency for review and approval prior to issuance of project construction permits/approvals. The diversion shall be designed in a way as to not impede movement while the diversion is in place.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

BIO-3(c) Construction Best Management Practices to Minimize Disruption to Wildlife

The following construction best management practices shall be incorporated by the implementing agency into all grading and construction plans to minimize temporary disruption of wildlife, which could hinder wildlife movement:

- Designation of a 20 mile per hour speed limit in all construction areas.
- Daily construction work schedules shall be limited to daylight hours only.

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- Mufflers shall be used on all construction equipment and vehicles shall be in good operating condition.
- All trash shall be placed in sealed containers and shall be removed from the project site a minimum of once per week.
- No pets are permitted on project site during construction.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be implemented prior to the issuance or project grading and construction permits.

Significance After Mitigation

Compliance with the above mitigation measures would reduce impacts to wildlife movement by requiring projects to be designed in a way that maintains connectivity. However, it cannot be guaranteed that movement of terrestrial species will not be impeded at the regional scale due to the large scale of the 2045 MTP/SCS. No additional feasible mitigation measures are available to reduce impacts on wildlife movement. Therefore, impacts would remain significant and unavoidable.

Threshold 5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance

Impact BIO-4 IMPLEMENTATION OF TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE 2045 MTP/SCS WOULD NOT CONFLICT WITH ANY LOCAL POLICIES OR ORDINANCES PROTECTING BIOLOGICAL RESOURCES, SUCH AS A TREE PRESERVATION POLICY. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Protected trees and other biological resources which are protected by city and/or county ordinances and/or policies would to be encountered at the locations where projects administered under the 2045 MTP/SCS would occur and therefore there is potential for conflict with local ordinances and/or policies. Most of the transportation projects in the 2045 MTP/SCS are expansions or maintenance of existing roads. Because ground disturbances would be fairly limited as a result, the removal of native trees and disturbances to other biological resources protected by local policies or ordinances would likely be minimal for most projects. However, some transportation projects in the 2045 MTP/SCS would occur in more undisturbed and potentially biologically sensitive areas. As such, there remains the potential for conflict with local policies and ordinances from construction of individual transportation projects.

In addition to potential conflicts with local policies and/or ordinances that may result from transportation improvement projects, the 2045 MTP/SCS also contains a future land use scenario that emphasizes infill development and TOD. This land use scenario focuses future

development concentrated in existing urbanized areas, although some development would occur in more undisturbed areas. There remains the potential for conflict with local policies and ordinances from development associated with the future land use scenario.

All future development projects as part of the future land use scenario as well as the transportation projects proposed for implementation under the 2045 MTP/SCS would be required to follow city and county development requirements, including compliance with local policies, ordinances and applicable permitting procedures related to protection biological resources. Project level analysis would identify significant conflicts with local policies and ordinances as well as minimize, mitigate or avoid those impacts through the design, siting and permitting process; and provide mitigation for any significant impacts as a condition of project approval and permitting. Therefore, the potential for development projects under the future land use scenario as well as proposed transportation projects to conflict with local policies or ordinances protecting biological resources is less than significant.

Mitigation Measures

None required.

Threshold 6: Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan

Impact BIO-5 IMPLEMENTATION OF TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE 2045 MTP/SCS WOULD NOT CONFLICT WITH THE PROVISIONS OF AN ADOPTED HABITAT CONSERVATION PLAN, NATURAL COMMUNITY CONSERVATION PLAN, OR OTHER APPROVED LOCAL, REGIONAL, OR STATE HABITAT CONSERVATION PLAN. THERE WOULD BE NO IMPACT.

There are no adopted regional Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plans within Monterey, San Benito, and Santa Cruz counties at the time of Draft EIR preparation and therefore no conflict with the 2045 MTP/SCS would occur. As described in Section 4.4.2, *Regulatory Setting*, the Fort Ord HCP is in development but is not yet adopted or approved. Therefore, no conflicts would occur as they relate to conflicts with existing adopted or approved local, regional, or state conservation plans.

Mitigation Measures

None required.

c. Specific MTP/SCS Projects that May Result in Impacts

All 2045 MTP/SCS transportation projects listed in Appendix B have potential to create significant biological impacts. All 2045 MTP/SCS transportation projects that require new construction or landscaping as well as any project that have project components or disturbance limits that are not entirely located within existing paved surfaces may result in

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impacts as discussed in impacts BIO-1 through BIO-3. Additional site specific analysis would need to be conducted as the individual projects are implemented in order to determine the project specific magnitude of the impact. Mitigation measures discussed above would apply to these specific projects.

4.5 Cultural Resources

This section analyzes impacts to historical and archaeological resources within the AMBAG region. Tribal cultural resources are addressed in Section 4.16.

4.5.1 Setting

a. Prehistoric Background

The prehistoric populations of the AMBAG region included the Esselen, Costanoan, Salinan, and Northern Valley Yokuts. Monterey County was occupied by the Esselen in the west, the Costanoan in the north, and the Salinan to the south. The Costanoan occupied the northwestern portion of San Benito County; the Northern Valley Yokuts were in the southeastern part of the county, and the Salinan occupied the southwestern area of San Benito County. The Costanoan also occupied Santa Cruz County.

The Esselen inhabited the upper Carmel Valley in the Santa Lucia Mountains between Point Sur and Lopez Point, with their inland boundary extending to just east of the Salinas River. The Esselen occupied seasonal villages depending on resource availability (Breschini and Haversat 2001).

Costanoan territory extended from the point where the San Joaquin and Sacramento rivers issue into the San Francisco Bay to Point Sur, 135 miles south of San Francisco, with the interior Coast Ranges likely constituting their inland boundary (Kroeber 1925). The Costanoan were semi-sedentary with a settlement system characterized by base camps of tule reed houses and seasonal specialized camps (Skowronek 1998). Subsistence was based on hunting, gathering, and fishing. Mussels and acorns were particularly important food resources (Kroeber 1925, Skowronek 1998).

Salinan territory ranged from Carmel Valley south to Morro Bay. They occupied permanent villages. Salinan subsistence was centered on the gathering of acorns and other edible plants and the hunting of animals such as dove, quail, rabbit, and deer (Taylor 2013).

Northern Valley Yokut populations were concentrated along waterways in the San Joaquin River. Settlements typically comprised single-family dwellings, sweatshouses, and ceremonial structures. Subsistence activities focused on areas in the San Joaquin Valley with water resources, emphasizing salmon and acorns.

b. Historic Background

Europeans first visited the Monterey Coast in 1602 when Sebastian Vizcaíno arrived (Bean 1968). The Spanish presidio and mission, which was later moved to Carmel, were established by Captain Gaspar de Portolá in Monterey in 1770; they served as the capital of the California missions until 1803 (Bean 1968: 40; Johnson 1979:83). Mission San Antonio de Padua, in southern Monterey County, was founded in 1791. Missions Santa Cruz, located in the current city of Santa Cruz and Nuestra Señora de la Soledad, in central Monterey County, were founded in 1791. Mission San Juan Bautista, in northwestern San Benito County, was founded

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in 1797 (Bean 1968, 45). The Mission Period was characterized by the acculturation of Native American populations into the Mission system of sedentary lifestyles and cultivation (rather than hunting and gathering), and the conversion to Christianity.

In 1791, Comandante General Pedro de Nava authorized the establishment of presidial pueblos (civilian lands around military forts) with detailed regulations for their organization. The Pueblo of Monterey grew in population as Spanish soldiers married and raised families or retired to this location. In 1796, Marques de Branciforte and Governor Diego de Borica created the Villa de Branciforte adjacent to Mission Santa Cruz lands, a pueblo to be colonized by retired soldiers and their families. However, no soldiers could be convinced to move to the Villa de Branciforte and the settlement failed (Bean 1968).

In 1822, the word of Mexico's independence from Spain arrived in California. Hallmarks of the Mexican Period in California include the secularization of mission lands, which was fully accomplished by 1836, and the issuance of large and numerous land grants to soldiers and prominent citizens. The Treaty of Guadalupe Hidalgo was signed in 1848, ending the Mexican American War and officially making California a territory of the United States. U.S. jurisdiction over California had really begun two years earlier, when on July 7, 1846, Commodore John D. Sloat raised the U.S. flag after the "Battle of Monterey," after 50 U.S. Marines and 100 Navy sailors landed unopposed and captured the city without firing a shot. The Gold Rush brought a multitude of new settlers to California in 1848 and the construction of the transcontinental railroad in 1869 contributed further to California's population boom.

Monterey and Santa Cruz counties were created in 1850 as two of the original counties in California. San Benito County was separated from Monterey County in 1874. Early American settlements in the area developed around the residences of earlier Hispanic settlers and on new colony settlements.

c. Cultural Resources Inventory

To compile a listing of recognized significant historic and prehistoric resources in Monterey, San Benito, and Santa Cruz counties, information was obtained from the State Office of Historic Preservation. The statewide Historical Resources Inventory is not available for public review according to the *California Historical Information System Information Center Rules of Operation Manual* (Section III.A). Therefore, this section does not include a complete list of all recorded cultural resources in the AMBAG region. The Historical Resources Inventory would be consulted after the determination of an Area of Potential Effect under project level analysis of MTP/SCS transportation projects.

Table 4.5-1, Table 4.5-2, and Table 4.5-3 present identified cultural resources in Monterey, San Benito, and Santa Cruz counties respectively. Included in each table are sites listed on the National Register of Historic Places (National Register), sites designated as a California State Landmark, sites listed in the California Register of Historical Resources (California Register) and those that are considered California Points of Historical Interest. The National Register, authorized by the National Historic Preservation Act (NHPA), lists the Nation's significant cultural resources. Resources listed in the National Register are protected under

the NHPA. The State Office of Historic Preservation maintains the California Register, which lists cultural resources important to the history of California; these are protected under CEQA. California Points of Historical Interest refers to resources of local significance.

Table 4.5-1 Monterey County Historical Resources

City or Community	Resource Name	National Register	State Landmark	California Register	Point of Historical Interest
Pacific Grove	Asilomar Conference Grounds	X			
Carmel Valley	Berwick Manor and Orchard	X			
Monterey	Black, Mary C. W., Studio House	X			
Salinas	Black, Samuel M., House	X			
Salinas	Bontadelli, Peter J., House	X			
Salinas	Boronda, Jose Eusebio, Adobe	X			
Monterey	Bromfield/Berne House			X	
Pacific Grove	Buck, Frank Laverne House	X			
Carmel	Carmel Mission	X			
Monterey County	Carmel Valley Road-Boronda Road Eucalyptus Trees	X			
Monterey	Casa De Oro		X		
Castroville	Castroville Japanese Language School	X			
Pacific Grove	Centrella Hotel	X			
Pacific Grove	Chautauqua Hall		X		
Monterey	Colton Hall		X		
Gonzales	Community Church of Gonzales	X			
King City	Cueva Pintada	X			
Monterey	Custom House	X	X		
Big Sur	Deetjen's Big Sur Inn	X			
Jolon	Dutton Hotel, Stagecoach Station	X			
Monterey	El Castillo	X			
Monterey	Finch, James W., House	X			
Salinas	First and Second Filipino Regiments Monument				X
Monterey	First Theater in California		X		
Gonzales	Gabilan Lodge No. 372- Independent Order of Odd Fellows	X			
Jolon	Gil, Jose Mario, Adobe	X			
Watsonville	Glass House, Casa Materna of the Vallejos		X		
Pacific Grove	Gosby House Inn	X			

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City or Community	Resource Name	National Register	State Landmark	California Register	Point of Historical Interest
Monterey	Gutierrez Adobe		X		
Salinas	Hill Town Ferry		X		
Monterey	House of Four Winds		X		
Monterey	House of Governor Alvarado		X		
Carmel	Jeffers, Robinson, House	X			
Salinas	José Eusebio Boronda Adobe Casa		X		
King City	King City Joint Union High School Auditorium	X			
Lucia	Kirk Creek Campground	X			
Salinas	Krough House	X			
Monterey	Landing Place of Sebastian Vizcaino and Fray Junípero Serra		X		
Monterey	Larkin House		X		
Monterey	Larkin House	X			
Soledad	Los Coches Rancho	X			
Monterey	Marsh, G.T. and Sons	X			
Monterey	Merritt, Josiah, Adobe	X			
King City	Milpitas Ranch House	X			
Soledad	Mission Nuestra Señora de la Soledad		X		
King City	Mission San Antonio de Padua		X		
Carmel	Mission San Carlos Borroméo de Carmelo	X	X		
Salinas	Monterey County Jail	X			
Monterey	Monterey Old Town Historic District	X			
Salinas	Nesbitt, Sheriff William Joseph, House	X			
Monterey	Old Pacific House		X		
Pebble Beach	Olvida Penas	X			
Carmel By-the-Sea	Outlands in the Eighty Acrea	X			
Monterey	Pacific Biological Laboratories	X			
Aromas	Pajaro River				X
Monterey	Parmelee, Lou Ellen House	X			
Pacific Grove	Point Pinos Lighthouse	X			
Big Sur	Point Sur Light Station	X			
Pajaro	Porter-Vallejo Mansion				

Environmental Impact Analysis
Cultural Resources

City or Community	Resource Name	National Register	State Landmark	California Register	Point of Historical Interest
Big Sur	Post, Joseph W., House	X			
Salinas	Rancho Las Palmas	X			
San Lucas	Rancho San Lucas	X			
Soledad	Richardson Adobe		X		
Monterey	Robert Louis Stevenson House	X	X		
Monterey	Royal Presidio Chapel	X			
Figueroa	Royal Presidio Chapel of San Carlos Borroméo		X		
Jolon	San Antonio De Padua Mission	X			
Salinas	Sargent, B. V., House	X			
Greenfield	Site Number 4 MNT 85	X			
Salinas	Site of the Battle of Natividad		X		
Monterey	Soberanes Adobe		X		
Salinas	Steinbeck, John House	X			
Monterey	Stevenson House	X			
Carmel-by-the-Sea	Sunset Center	X			
Salinas	Temporary Detention Camps for Japanese Americans-Salinas Assembly Center		X		
Jolon	Tidball Store	X			
Pacific Grove	Trimmer Hill	X			X
Monterey	Vásquez House		X		
Monterey County	Whaler's Cabin	X			

Source: California Office of Historic Preservation 2021

Table 4.5-2 presents identified cultural resources in San Benito County, where there are 12 National Register listings, five California State Landmarks, two Points of Historical Interest, and no California Register listings.

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Table 4.5-2 San Benito County Historical Resources

City or Community	Resource Name	National Register	State Landmark	Point of Historical Interest
San Juan Bautista	Anza House	X		
San Juan Bautista	Castro House		X	
Soledad	Chalone Creek Archaeological Sites	X		
Hollister	Downtown Hollister Historic District	X		
San Juan Bautista	Fremont Peak		X	
Hollister	Hawkins, Joel and Rena, House	X		
Hollister	Hollister Carnegie Library	X		
San Juan Bautista	Marentis House	X		
Hollister	McCallum, Roy D. House	X		
San Juan Bautista	Mission San Juan Bautista and Plaza		X	
Hollister	Monterey Street Historic District	X		
San Benito County	New Idria Mine		X	
San Juan Bautista	The Pear Tree			X
San Juan Bautista	Plaza Hotel	X	X	
San Juan Bautista	Rozas House	X		
San Juan Bautista	San Juan Bautista Congregational Church, Glad Tidings Chu			X
San Juan Bautista	San Juan Bautista Plaza Historic District	X		
San Juan Bautista	Wilcox, Benjamin, House	X		

Source: California Office of Historic Preservation 2021

Table 4.5-3 presents identified cultural resources in Santa Cruz County. Within Santa Cruz County there are 43 National Register listings, seven California State Landmarks, seven Points of Historical Interest and no California Register listings.

Table 4.5-3 Santa Cruz County Historical Resources

City or Community	Resource Name	National Register	State Landmark	Point of Historical Interest
Santa Cruz	Bank of Santa Cruz County	X		
Aptos	Bayview Hotel	X		
Big Basin	Big Basin Redwoods State Park		X	
Watsonville	Bockius, Godfrey M., House	X		
Santa Cruz	Branciforte Adobe	X		
Santa Cruz	Brown, Allan, Site	X		
Santa Cruz	Carmelita Court	X		

Environmental Impact Analysis
Cultural Resources

City or Community	Resource Name	National Register	State Landmark	Point of Historical Interest
Watsonville	Castro, Jose Joaquin, Adobe	X		
Santa Cruz	Cope Row Houses	X		
Santa Cruz	Cowell Lime Works Historic District	X		
Davenport	Davenport Jail	X		
Freedom	Discovery of California Redwoods			X
Santa Cruz	Evergreen Cemetery			X
Felton	Felton Covered Bridge	X	X	
Felton	Felton Presbyterian Church	X		
Santa Cruz	Garfield Park Branch Library	X		
Santa Cruz	Glen Canyon Covered Bridge	X		
Scotts Valley	Glenwood		X	
Santa Cruz	Golden Gate Villa	X		
Santa Cruz County	Grace Episcopal Church	X		
Capitola	Hihn Building	X		
Capitola	Hihn Building, Superintendent's Office			X
Santa Cruz	Hinds, A. J., House	X		
Santa Cruz	Hotel Metropole	X		
Watsonville	Judge Lee House	X		
Watsonville	Lettunich Building	X		
Santa Cruz	Live Oak Ranch	X		
Santa Cruz	Looff Carousel and Roller Coaster on the Santa Cruz Beach Boardwalk	X		
Watsonville	Madison House	X		
Watsonville	Mansion House Hotel	X		
Santa Cruz	Mission Hill Area Historic District	X		
Scotts Valley	Mountain Charlie Big Tree			X
Santa Cruz	Neary-Rodriguez Adobe	X		
Santa Cruz	Octagon Building	X		
Capitola	Old Riverview Historic District	X		
Ben Lomond	Phillpshurst-Riverwood	X		
Santa Cruz	Rancho San Andrés Castro Adobe		X	
Watsonville	Redman House	X		
Capitola	Rispin Mansion	X		
Santa Cruz	Robinson, Elias H., House	X		
Santa Cruz County	Sand Hill Bluff Site			X
Santa Cruz	Santa Cruz Beach Boardwalk		X	

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City or Community	Resource Name	National Register	State Landmark	Point of Historical Interest
Santa Cruz	Santa Cruz County Hall of Records-Octagon Building			X
Santa Cruz	Santa Cruz Downtown Historic District	X		
Scotts Valley	Scott, Hiram D., House	X		
Santa Cruz	Site of Center of Villa de Branciforte		X	
Capitola	Six Sisters-Lawn Way Historic District	X		
Watsonville	Stoesser Block and Annex	X		
Capitola	Superintendent's Office		X	
Felton	Toll House, Toll House Resort Motel			X
Santa Cruz	US Post Office- Santa Cruz Main	X		
Aptos	Valencia Hall	X		
Capitola	Venetian Court Apartments	X		
Santa Cruz	Veterans Memorial Building	X		
Watsonville	Watsonville City Plaza	X		
Watsonville	Watsonville-Lee Road Site	X		

Source: California Office of Historic Preservation 2021

4.5.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

National Historic Preservation Act of 1966

The National Historic Preservation Act of 1966 (NHPA), as amended, is the primary mandate governing projects under federal jurisdiction that may affect cultural resources. Section 106 of the NHPA requires federal agencies, or those they fund or permit, to consider the effects of their actions on the properties that may be eligible for listing or that are listed in the National Register. The regulations implementing Section 106 are codified in 36 CFR Part 800. To determine whether an undertaking could affect National Register-eligible properties, cultural resources must be inventoried and evaluated for listing in the National Register. The criteria applied to evaluate the significance of cultural resources are defined as follows.

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association and that have any of the following characteristics:

- (a) Associated with events that have made a significant contribution to the broad patterns of our history
- (b) Associated with the lives of persons significant in our past

- (c) Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction
- (d) Have yielded, or may be likely to yield, information important in prehistory or history

The Department of Transportation Act

Passed in 1966, the Department of Transportation Act (49 United States Code 303, formerly 49 United States Code 1651(b)(2) and 49 United States Code 1653f) includes Section 4(f), which states that the Federal Highway Administration and other U.S. Department of Transportation agencies cannot approve the use of land from public and private historical sites unless certain conditions apply. These conditions are the following: If there is no feasible and prudent avoidance alternative to the use of land, and if the action includes all possible planning to minimize harm to the property resulting from such use; or if the Federal Highway Administration determines the use of the property will have a *de minimis* impact.

Archaeological Resources Protection Act of 1979 (ARPA)

This regulation was enacted to protect archaeological resources and sites that are on public lands and tribal lands, to foster increased cooperation and exchange of information between government representatives, the professional archaeological community, and private individuals. Section 4 of the statute and Sections 16.5-16.12 of the uniform regulations describe the requirements that must be met before federal authorities can issue a permit to excavate or remove any archaeological resource on federal or tribal lands. The curation requirements of artifacts, other materials excavated or removed, and the records related to the artifacts and materials are described in Section 5 of the ARPA. This section also authorizes the Secretary of the Interior to issue regulations describing in more detail the requirements regarding these collections.

b. State Laws, Regulations, and Policies

California Register of Historical Resources

The CRHR program was designed for use by state and local agencies, private groups, and citizens to identify, evaluate, register, and protect California's historical resources. A historical resource can include any object, building, structure, site, area, or place that is determined to be historically or archaeologically significant. The CRHR is an authoritative guide to the state's significant archaeological and historic architectural resources. The list of these resources can be used for state and local planning purposes, the eligibility determinations can be used for state historic preservation grant funding and listing in the CRHR provides a certain measure of protection under CEQA.

California Historical Landmarks Program

The Historical Landmarks Program was instated to register buildings or landmarks of historical interest. Historical Landmarks are defined as sites, buildings, or features that have

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a statewide historical, cultural, anthropological, or other significance. To be designated as a Historical Landmark by the Director of California State Parks, the resource must meet set criteria, be recommended for designation by the State Historical Resources Commission and be approved by the property owners. The goals of the program include the preservation and maintenance of registered landmarks, most of which include missions, early settlements, battles, and gold rush sites (PRC Sections 5020.4, 5021, 5022, 5022.5, 5031 and 5032).

California Environmental Quality Act

Archaeological Resources

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

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

Impacts to Historical Resources

Section 15064.5 of the *State CEQA Guidelines* states that “a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.” The *State CEQA Guidelines* (Section 15064.5(a)) define an “historical resource” as including the following:

- A resource listed in, or eligible for listing in, the California Register of Historical Resources
- A resource listed in a local register of historical resources (as defined at PRC Section 5020.1(k))
- A resource identified as significant in a historical resources survey meeting the requirements of PRC Section 5024.1(g)
- 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. (Generally, a resource is considered by the lead agency to be “historically significant” if the resource meets the criteria for listing in the CRHR)

State CEQA Guidelines (Section 15064.5(b)[1]) define “substantial adverse change” as “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially

impaired.” Generally, the significance of a historical resource is “materially impaired” when a project demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in or eligibility for the CRHR, or its inclusion in a local register of historical resources (*State CEQA Guidelines* Section 15064.5(b)(2)).

Standard Mitigation Measures Under CEQA

HISTORICAL RESOURCES

Mitigation measures for historical resources impacts are discussed in *State CEQA Guidelines* Section 15126.4. Generally, by following the Secretary of the Interior’s Standards for the Treatment of Historic Properties or the Secretary of the Interior’s Standards for Rehabilitation, impacts can be considered as mitigated to a level less than significant. For historical resources that are archaeological sites, according to the *State CEQA Guidelines* Section 15126.4(b)(3), public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature.

UNIQUE ARCHEOLOGICAL RESOURCES

A cultural resource is also significant if it is a unique *archaeological resource*, which is defined in §21083.2(g) 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 any of the following criteria:

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

If an archaeological resource qualifies as a “historical resource,” potential adverse impacts must be considered in the same manner as a historical resource *State CEQA Guidelines* Section 15064.5(c)(2)). If the archaeological site does not qualify as a historical resource but does qualify as a unique archaeological resource, then the archaeological site is treated in accordance with PRC Section 21083.2 (*State CEQA Guidelines* Section 15064.5(c)(3)).

California Public Resources Code Section 5024 and State-Owned Lands

Historical resources on State-owned lands are subject to the requirements of PRC Section 5024. PRC Section 5024.5(f) requires State agencies to submit to SHPO for comment documentation for any project having the potential to affect historical resources under its jurisdiction listed in or potentially eligible for inclusion in the NRHP or registered or eligible for registration as California Historical Landmarks. The SHPO has 30 days after receipt of the notice for review and comment. If the SHPO determines that a proposed action would have

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an adverse effect on a listed historical resource, the relevant State agency shall adopt prudent and feasible measures that will eliminate or mitigate the adverse effects.

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act (PRC Section 5097.9) applies to both State and private lands. The act requires, upon discovery of human remains, that construction or excavation activity cease and that the county coroner be notified. If the remains are those of a Native American, the coroner must notify the NAHC, which notifies and has the authority to designate the most likely descendant (MLD) of the deceased. The act stipulates the procedures that the descendants may follow for treating or disposing of the remains and associated grave goods.

Health and Safety Code Section 7050.5

Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If they are determined to be Native American, the coroner must contact the NAHC.

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 the NAHC. Section 5097.5 of the PRC states the following:

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

California Health and Safety Code Sections 7050.5, 7051, and 7054

HSC Sections 7050.5, 70051, and 7051, and 7054 specify the provisions for the protection of human burial remains. Section 7050.5 of the HSC states the following:

In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27491 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the

person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

Section 7051 of the HSC states the following:

Every person who removes any part of any human remains from any place where it has been interred, or from any place where it is deposited while awaiting interment, cremation, or hydrolysis, with intent to sell it or to dissect it, without authority of law, or written permission of the person or persons having the right to control the remains under Section 7100, or with malice or wantonness, has committed a public offense that is punishable by imprisonment pursuant to subdivision (h) of Section 1170 of the Penal Code.

Section 7054 of the HSC states the following:

(a) (1) Except as authorized pursuant to the sections referred to in subdivision (b), every person who deposits or disposes of any human remains in any place, except in a cemetery, is guilty of a misdemeanor.

(2) Every licensee or registrant pursuant to Chapter 12 (commencing with Section 7600) of Division 3 of the Business and Professions Code and the agents and employees of the licensee or registrant, or any unlicensed person acting in a capacity in which a license from the Cemetery and Funeral Bureau is required, who, except as authorized pursuant to the sections referred to in subdivision (b), deposits or disposes of any human remains in any place, except in a cemetery, is guilty of a misdemeanor that shall be punishable by imprisonment in a county jail not exceeding one year, by a fine not exceeding ten thousand dollars (\$10,000), or both that imprisonment and fine.

(b) Cremated remains or hydrolyzed human remains may be disposed of pursuant to Sections 7054.6, 7116, 7117, and 103060.

(c) Subdivision (a) of this section shall not apply to the reburial of Native American remains under an agreement developed pursuant to subdivision (l) of Section 5097.94 of the Public Resources Code, or implementation of a recommendation or agreement made pursuant to Section 5097.98 of the Public Resources Code.

Public Resources Code Section 5097.98

PRC Section 5097.98 addresses the disposition of Native American burials, protects such remains, and established the NAHC to resolve any related disputes. Section 5097.98 of the PRC states the following:

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(a) Whenever the commission receives notification of a discovery of Native American human remains from a county coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, it shall immediately notify those persons it believes to be most likely descended from the deceased Native American. The descendants may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American human remains and may recommend to the owner or the person responsible for the excavation work means for treatment or disposition, with appropriate dignity, of the human remains and any associated grave goods. The descendants shall complete their inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site.

(b) Upon the discovery of Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this section, with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.

Native American Graves Protection and Repatriation Act

Health and Safety Code Sections 8010–8011 establishes a State repatriation policy intent that is consistent with and facilitates implementation of the federal Native American Graves Protection and Repatriation Act. The act strives to ensure that all California Indian human remains and that cultural and cultural items by publicly funded agencies and museums in California. It also states the intent for the State to provide mechanisms for aiding California Indian tribes, including non-federally recognized tribes, in filing repatriation claims and getting responses to those claims.

California Health and Safety Code Sections 18950 through 18961

The State Historic Building Code (HSC; Sections 18950–18961) provide alternative building regulations and building standards for the rehabilitation, preservation, restoration (including related reconstruction), or relocation of buildings or structures designated as historic buildings. Such alternative building standards and building regulations are intended to facilitate the restoration or change of occupancy to preserve their original or restored architectural elements and features, to encourage energy conservation and a cost-effective approach to preservation, and to provide for the safety of the building occupants.

c. Local Laws, Regulations, and Policies

Monterey County

The Monterey County General Plan Open Space Element (Monterey County 2010) contains policies that pertain to cultural resources as show below.

- **Policy OS-6.1.** Important representative and unique archaeological sites and features shall be identified and protected for all parcels with undisturbed natural conditions (i.e., ungraded properties), consistent with State Office of Historic Preservation guidelines and definitions employed on a statewide basis, including Phase I, II and III archaeological studies.
- **Policy OS-6.3.** New development proposed within moderate or high sensitivity zones, or within 150 feet of a known recorded archaeological and/or cultural site, shall complete a Phase I survey including use of the regional State Office of Historic Preservation or the California Native American Heritage Commission's list of sacred and traditional sites. Routine and Ongoing Agricultural Activities shall be exempted from this policy in so far as allowed by state or federal law.
- **Policy OS-6.4.** Development proposed in low sensitivity zones are not required to have an archaeological survey unless there is specific additional information that suggests archaeological resources are present.
- **Policy OS-6.6.** Efforts by historical, educational, or other organizations to improve the public's recognition of the County's cultural heritage and the citizen's responsibilities for archaeological or cultural resource preservation shall be encouraged. The County shall adopt a uniform set of guidelines to define Phase I, II and III significance assessment and data recovery programs. Similar guidelines shall be created to set standards for requirements for consultation with Native Californian descendants to establish procedures for determining the presence or absence of sacred or traditional sites. These guidelines shall address monitoring requirements and participation in cultural resource data recovery programs.

Chapter 18.25 of the Monterey County Code of Ordinances (Preservation of Historic Resources) contains the policies and procedures for administering historic resources in Monterey County.

The City of Monterey General Plan includes goals and policies to protect historic and cultural resources, including maintaining cultural resources master plans for districts of the city, encouraging development that enhances historic resources, and working with local stakeholders on preservation and conservation efforts.

San Benito County

The Land Use Element and Natural and Cultural Resources Element of the San Benito County 2035 General Plan (San Benito County 2015a) includes goals and policies to protect Native American, archaeological, and historical resources. Cultural resources goals and policies are listed below.

- **Policy LU-1.10 Development Site Suitability.** The County shall encourage specific development sites to avoid natural and manmade hazards, including, but not limited to, active seismic faults, landslides, slopes greater than 30 percent and floodplains. Development sites shall also be on soil suitable for building and maintaining well and septic systems (i.e., avoid impervious soils, high percolation, or high groundwater areas

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and provide setbacks from creeks). The County shall require adequate mitigation for any development located on environmentally sensitive lands (e.g., wetlands, erodible soil, archaeological resources, important plant, and animal communities).

- **Goal NCR-7.** To protect, preserve and enhance the unique cultural and historic resources in the county.
- **Policy NCR-7.9 Tribal Consultation.** The County shall consult with Native American tribes regarding proposed development projects and land use policy changes consistent with the State's Local and Tribal Intergovernmental Consultation requirements.
- **Policy NCR-7.11 Prohibit Unauthorized Grading.** The County shall prohibit unauthorized grading, collection, or degradation of Native American, archaeological, or paleontological resources.
- **Policy NCR-7.12 Archaeological Artifacts.** The County shall require an archaeological report prior to the issuance of any project permit or approval in areas determined to contain significant historic or prehistoric archaeological artifacts and when the development of the project may result in the disturbance of the site. The report shall be written by a qualified cultural resource specialist and shall include information as set forth in the county's archaeological report guidelines available at the County Planning Department.

The San Benito County Code, Title 19 (Land Use and Environmental Regulations), Chapter 19.05 (Architectural Site Review Ordinance) protects and preserves cultural resources in areas where cultural resources are known or not yet to be discovered by providing regulations for the protection, enhancement, and perpetuation of archaeological sites.

The City of Hollister General Plan EIR has mitigation measures that address historic preservation and impacts to cultural resources. While these have not been integrated into the General Plan as of the writing of this report, development within city limits would be subject to State law and the mitigation that addresses historic resources. The San Juan Bautista 2035 General Plan includes goals and policies to address historic preservation that interleaves with their community design vision and includes maintaining and preserving the integrity of local historic resources.

Santa Cruz County

The Santa Cruz County General Plan and Local Coastal Program (Santa Cruz County, 1994) Conservation and Open Space Element includes policies to protect archaeological and historical resources. Applicable policies are listed below.

- **Policy 5.19.1 Evaluation of Native American Sites.** Protect all archaeological resources until they can be evaluated. Prohibit any disturbance of Native American Cultural Sites without an appropriate permit. Maintain the Native American Cultural Sites ordinance.
- **Policy 5.19.2 Site Surveys.** Require an archaeological site survey (surface reconnaissance) as part of the environmental review process for all projects with very high site potential as determined by the inventory of archaeological sites, within the Archaeological

Sensitive Areas, as designated on General Plan and LCP Resources and Constraints Maps filed in the Planning Department.

- **Policy 5.19.3 Development Around Archaeological Resources.** Protect archaeological resources from development by restricting improvements and grading activities to portions of the property not containing these resources, where feasible, or by preservation of the site through project design and/or use restrictions, such as covering the site with earth fill to a depth that ensures the site will not be disturbed by development, as determined by a professional archaeologist.
- **Policy 5.19.4 Archaeological Evaluations.** Require the applicant for development proposals on any archaeological site to provide an evaluation, by a certified archaeologist, of the significance of the resource and what protective measures are necessary to achieve General Plan and LCP Land Use Plan objectives and policies.
- **Policy 5.19.5 Native American Cultural Sites.** Prohibit any disturbance of Native American Cultural Sites without an archaeological permit which requires, but is not limited to, the following:
 - (a) A statement of the goals, methods, and techniques to be employed in the excavation and analysis of the data and the reasons why the excavation will be of value.
 - (b) A plan to ensure that artifacts and records will be properly preserved for scholarly research and public education.
 - (c) A plan for disposing of human remains in a manner satisfactory to local Native American Indian groups.
- **Policy 5.20.3 Development Activities.** For development activities on property containing historic resources, require protection, enhancement and/or preservation of the historic, cultural, architectural, engineering, or aesthetic values of the resources as determined by the Historic Resources Commission. Immediate or substantial hardship to a project applicant shall be considered in establishing project requirements.
- **Policy 5.20.4 Historic Resources Commission Review.** Require that applicants for development proposals on property containing a designated Historic Resource submit plans for the protection and preservation of the historic resource values to the Historic Resources Commission for their review and approval; require an evaluation and report by a professional historian or a cultural resources consultant when required by the Commission.
- **Policy 5.20.5. Encourage Protection of Historic Structures.** Encourage and support public and private efforts to protect and restore historic structures and continue their use as an integral part of the community.
- **Policy 5.20.6. Maintain Designation as a Certified Local Government.** Support existing and further develop local historic resource programs in order to maintain the California State Department of Parks and Recreation's designation of Santa Cruz County as a Certified Local Government (CLG).

The Santa Cruz County Municipal Code Title 16 (Environmental and Resource Protection) outlines criteria for Native American cultural studies (chapter 14.60) and historic preservation

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(Chapter 16.42). Chapter 16.40 defines when archaeological surveys and reports are required, as well as required actions when Native American cultural sites or human remains are discovered during the review of a proposed project or during excavation or other ground disturbing activities. Chapter 16.42 defines the significance and designation of protected historic resources on the Santa Cruz County Inventory of Historic Resources and development procedures for designated historic resources.

As with many jurisdictions in the County, the City of Santa Cruz has goals and policies that address historic preservation and cultural resources protection in the city, including mapping sensitive resources, notifying project applicants if sensitive resources are anticipated on project sites, and managing discoveries, including of human remains, in accordance with local, State, and federal requirements.

4.5.3 Impact Analysis

a. Methodology and Significance Thresholds

For this discussion, the term cultural resource broadly includes historical and archaeological resources. The significance of a cultural resource impact is determined by whether that resource meets the criteria discussed above. Where the significance of a site is unknown, it is presumed to be a significant CEQA defined “historical resource” for the purpose of the impact evaluation in this EIR. Listings of historical resources in Monterey, San Benito and Santa Cruz counties were obtained from the State Office of Historic Preservation. Potential areas of disturbance associated with the 2045 MTP/SCS projects were compared to the identified historical sites listed on Table 4.5-1, Table 4.5-2 and Table 4.5-3 to determine whether an impact to a known cultural resource may occur. As discussed above, Table 4.5-1, Table 4.5-2 and Table 4.5-3 are based on information available online through the State Historic Preservation Office and do not reflect the complete California Historical Resources Information System, which would be consulted on a project-by-project basis.

Appendix G of the *State CEQA Guidelines* identifies the following criteria for determining whether a project’s impacts would have a significant impact on agricultural resources:

1. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5
2. Cause a substantial adverse change in the significant of an archaeological resource pursuant to §15064.5
3. Disturb any human remains, including those interred outside of formal cemeteries

b. Project Impacts and Mitigation Measures

The following section describes cultural resources impacts associated with the transportation improvements and future land use scenario included in the 2045 MTP/SCS. Table 4.5-4 summarizes the transportation projects that would result in historic and cultural resources impacts. Due to the programmatic nature of the 2045 MTP/SCS, a precise, project level analysis of the specific impacts associated with individual transportation and land use

projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2045 MTP/SCS would result in the impacts as described in the following section.

Threshold 1: Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5

Impact CR-1 IMPLEMENTATION OF PROPOSED TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE 2045 MTP/SCS WOULD CAUSE A SUBSTANTIAL ADVERSE CHANGE IN BUILT ENVIRONMENT CULTURAL RESOURCES THAT ARE HISTORICAL RESOURCES AS DEFINED IN STATE CEQA GUIDELINES SECTION 15064.5. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

With regard to known significant historic structures, the location and nature of the proposed 2045 MTP/SCS projects were evaluated relative to the location of the historic properties listed in Table 4.5-1, Table 4.5-2, and Table 4.5-3. Projects that involve bridge replacements and removal of other structures older than 50 years could generate an impact to historic structures. Furthermore, projects that are adjacent to or near historic structures would alter the integrity of those structures by changing their environmental context.

The 2045 MTP/SCS also has a future land use scenario that emphasizes infill development near transit, such as train stations and multimodal transportation hubs in existing urbanized areas, though some development in outlying areas would still occur. There are no specific development projects pursuant to the land use scenario envisioned by the 2045 MTP/SCS identified and, thus, a project specific evaluation is not possible. However, because future infill near transit could be located near or adjacent to existing historic structures, the integrity of such structures could be indirectly or directly impacted as a result. Moreover, if future infill near transit would involve redevelopment/demolition of existing structures, it is possible that such structures could have historical significance (as determined by site specific evaluation) given the presence of structures that are over 50 years old within the AMBAG region, particularly within existing urbanized areas. These impacts could occur in outlying areas as well; however, they are more likely to occur in infill areas due to the presence of existing development that may be considered historic. Redevelopment or demolition could result in the permanent loss of historic structures. Similarly, while proposed transportation projects would not impact known historic structures, it is possible that such projects may require reconstruction or demolition of transportation infrastructure or other structures that are over 50 years old, and which may be considered historically significant as determined by site specific evaluation. Such reconstruction or demolition would result in the permanent loss of historic structures.

In general, prior to commencement of any action, development, or land use changes on lands subject to federal jurisdiction or for projects involving federal funding, a cultural resource survey and an environmental analysis must be prepared, including a historic resources assessment. Historic structures are protected under the regulations of the National Historic Preservation Act and the Department of Transportation Act of 1966. AMBAG-sponsored projects would be subject to local ordinance requirements within the jurisdiction in which they occur, including General Plan provisions that protect cultural resources. Nevertheless,

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impacts would be significant because there would be substantial adverse changes to historic structures that meet the definition of “historical resources.” Thus, the following mitigation measures would be required for any project that may impact historical resources.

Mitigation Measures

To minimize impacts to historical resources for transportation projects under AMBAG jurisdiction, working with TAMC, SBtCOG, and SCCRTC shall, and transportation project sponsor agencies can and should, implement the following mitigation developed for the 2045 MTP/SCS program where applicable for transportation projects that result in impacts to historic resources, and where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG planning region can and should implement these measures, where relevant to land use projects implementing under the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

CR-1 Historic Resources Impact Minimization

Prior to individual project permit issuance, the implementing agency of a 2045 MTP/SCS project involving earth disturbance or construction of permanent above ground structures or roadways shall, or can and should, prepare a map defining the Area of Potential Effects (APE). This map shall indicate the areas of primary and secondary disturbance associated with construction and operation of the facility and will help in determining whether known historical resources are located within the impact zone. If a structure greater than 45 years in age is within the identified APE, a survey and evaluation of the structure(s) to determine their eligibility for recognition under State, federal, or local historic preservation criteria shall be conducted. 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). Study recommendations shall be implemented, which may include, but would not be limited to, the following:

- Realign or redesign projects to avoid impacts on known historic resources where possible
- If avoidance of a significant architectural/built environment resource is not feasible, additional mitigation options include, but are not limited to, specific design plans for historic districts, or plans for alteration or adaptive re-use 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, and Reconstructing Historic Buildings
- Comply with existing local regulations and policies that exceed or reasonably replace any of the above measures that protect historic resources

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This

mitigation measure shall, or can and should, be applied during permitting and environmental review.

Significance After Mitigation

Redevelopment or demolition that may be required to implement transportation improvements and/or infill development may result in the permanent loss or damage to historic structures. While implementation of Mitigation Measure CR-1 would reduce impacts to the extent feasible, some project specific impacts may be unavoidable. Therefore, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold: Cause a substantial adverse change in the significance of an archaeological resource pursuant to *State CEQA Guidelines* Section 15064.5

Impact CR-2 **IMPLEMENTATION OF PROPOSED TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE 2045 MTP/SCS WOULD CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF ARCHAEOLOGICAL RESOURCES AS DEFINED IN STATE CEQA GUIDELINES SECTION 15064.5. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

It is known that archaeological resources are present throughout the AMBAG region. Therefore, it is possible to encounter known and unknown archaeological resources during of implementation of transportation improvement projects under the 2045 MTP/SCS, particularly when ground-disturbing activities are involved. Many of the improvements proposed under the 2045 MTP/SCS consist of minor expansions of existing facilities that would not involve construction in previously undisturbed areas. However, depending on the location and extent of the proposed improvement and ground disturbance, known and/or unknown cultural resources could be impacted. Representative transportation projects that may impact previously undisturbed areas are listed in Table 4.5-4. The projects listed were identified based on the likelihood that development of new infrastructure would impact previously undisturbed areas. It is possible that construction activities associated with some of the proposed roadway or bridge widening or extension projects in addition to those listed in Table 4.5-4 could adversely impact archaeological resources by exposing them to potential vandalism or causing displacement from the original context and integrity. Project specific analysis would be required as individual projects are proposed.

The 2045 MTP/SCS considers a future land use scenario that emphasizes infill near transit and in existing urbanized areas. However, it is possible that archaeological resources could be located on or near future infill development sites, and in undisturbed areas that would be developed during implementation of the 2045 MTP/SCS. Project grading and excavation for development sites would disturb these undiscovered resources.

In general, prior to commencement of any action, development, or land use changes on lands subject to federal jurisdiction or for projects involving federal funding, a cultural resource survey and an environmental analysis must be prepared. County and city sponsored projects would be subject to local ordinance requirements, including General Plan provisions that

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protect cultural resources. Nevertheless, impacts to archaeological resources would be significant because there would be substantial adverse changes to the significance of archaeological resources, i.e., archaeological resources that meet the definition of “historical resources” or “unique archaeological resources.”

Mitigation Measures

To minimize impacts to cultural resources for transportation projects under AMBAG jurisdiction, working with TAMC, SBtCOG, and SCCRTC shall, and transportation project sponsor agencies can and should, implement the following mitigation developed for the 2045 MTP/SCS program where applicable for transportation projects that result in impacts to archaeological resources, and where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG planning region can and should implement these measures, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

CR-2(a) Archaeological Resources Impact Minimization

Before construction activities, implementing agencies shall, or can and should, retain a qualified archaeologist to conduct a record search at the Northwest Information Center to determine whether the project area has been previously surveyed and whether resources were identified. When recommended by the Information Center, implementing agencies shall, or can and should, retain a qualified archaeologist to conduct archaeological surveys before construction activities. Implementing agencies shall, or can and should, follow recommendations identified in the survey, which may include, but would not be limited to: subsurface testing, designing and implementing a Worker Environmental Awareness Program (WEAP), construction monitoring by a qualified archaeologist, or avoidance of sites and preservation in place. Recommended mitigation measures will be consistent with *State CEQA Guidelines* Section 15126.4(b)(3) recommendations and may include but not be limited to preservation in place and/or data recovery. All cultural resources work shall follow accepted professional standards in recording any find including submittal of standard DPR Primary Record forms (Form DPR 523) and location information to the appropriate California Historical Resources Information System office for the project area.

CR-2(b) Unanticipated Discoveries During Construction

If evidence of any prehistoric or historic-era subsurface archaeological features or deposits are discovered during construction-related earthmoving activities (e.g., ceramic shard, trash scatters, lithic scatters), implementing agencies shall, or can and should, halt all ground-disturbing activity proximate to the discovery until a qualified archaeologist (36 CFR Section 61) can assess the significance of the find. If the find is a prehistoric archaeological site, the culturally affiliated California Native American tribe shall be notified. If the archaeologist determines that the find does not meet the CRHR standards of significance for cultural resources, construction may proceed. If the archaeologist determines that further

information is needed to evaluate significance, a testing plan shall be prepared and implemented. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), the archaeologist shall work with the implementing agency to avoid disturbance to the resources, and if complete avoidance is not feasible in light of project design, economics, logistics and other factors, shall recommend additional measures such as the preparation and implementation of a data recovery plan. Recommended mitigation measures will be consistent with State CEQA Guidelines Section 15126.4(b)(3) recommendations and may include but not be limited to preservation in place and/or data recovery. All cultural resources work shall follow accepted professional standards in recording any find including submittal of standard DPR Primary Record forms (Form DPR 523) and location information to the appropriate California Historical Resources Information System office for the project area. If the find is a prehistoric archaeological site, the culturally affiliated California Native American tribe shall be notified and afforded the opportunity to monitor mitigative treatment. During evaluation or mitigative treatment, ground disturbance and construction work may continue in other parts of the project area that are distant enough from the find not to impact it, as determined by the qualified archaeologist.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction, as applicable.

Significance After Mitigation

Implementation of the above measure would reduce impacts to archaeological resources by requiring cultural resource searches and surveys of project areas and providing a procedure for discovered cultural archaeological resources. While implementation of Mitigation Measure CR-2 would reduce impacts to the extent feasible, some project specific impacts may be unavoidable. Therefore, this impact remains significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold: Disturb any human remains, including those interred outside of formal cemeteries

Impact CR-3 **IMPLEMENTATION OF PROPOSED TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE 2045 MTP/SCS COULD DISTURB HUMAN REMAINS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

Human burials outside of formal cemeteries are often associated with prehistoric archaeological contexts. Therefore, it is possible to encounter unknown human burials because of implementation of transportation improvement projects under the 2045

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MTP/SCS. Excavation during construction activities in the AMBAG region would have the potential to disturb these resources, including Native American burials.

In addition to being potential archaeological resources, human burials have specific provisions for treatment in PRC Section 5097, as listed under Section 4.5.2, *Regulatory Setting*. The California Health and Safety Code (Sections 7050.5, 7051 and 7054) has specific provisions for the protection of human burial remains. Existing regulations address the illegality of interfering with human burial remains, and protects them from disturbance, vandalism, or destruction, and established procedures to be implemented if Native American skeletal remains are discovered. PRC Section 5097.98 also addresses the disposition of Native American burials, protects such remains, and established the NAHC to resolve any related disputes. Implementation of these regulations would ensure that 2045 MTP/SCS impacts to disturbance of human remains, including those interred outside of formal cemeteries would be less than significant.

Mitigation Measures

None required.

c. Specific MTP/SCS Projects That May Result in Impacts

Table 4.5-4 identifies transportation projects with the potential to cause or contribute to direct or indirect impacts to cultural resources such as those discussed above. These projects are representative and were selected based on their potential scope and likelihood to require disturbances in previously undisturbed areas. While many projects have the potential to impact cultural resources, those requiring substantial ground disturbance in undisturbed areas have greater potential to impact prehistoric archaeological and paleontological resources. Projects located in urban infill areas near transit or in previously disturbed areas, such as an existing road right-of-way, have a greater potential to impact historic built environment resources, as well as historic archaeological resources in older developed areas. Additional specific analysis would be required as individual projects are implemented to determine the project specific magnitude of impact. Mitigation measures discussed above would apply to these specific projects.

Table 4.5-4 MTP/SCS Projects that May Result in Cultural Resources Impacts

AMBAG Project No.	Project	Location	Impact
MON-CT011-CT	SR 68 – Commuter Improvements	Monterey-Salinas	CR-2, CR-3
MON-CT022-CT	SR 156 – Corridor Widening Project	Monterey County	CR-2, CR-3
MON-CT023-CT	SR 156/U.S. 101 Interchange	Monterey County	CR-2, CR-3
MON-CT030-SL	U.S. 101 – Salinas Corridor	Salinas	CR-2, CR-3
MON-CT031-CT	U.S. 101 – South County Frontage Roads	Salinas-Chualar- Soledad	CR-2, CR-3
MON-CT036-CT	SR 156-Castroville Boulevard Interchange	Castroville	CR-2, CR-3
MON-GON015-GO	U.S. 101/Gloria Road Interchange	Gonzales	CR-2, CR-3
MON-GRN008-GR	U.S. 101/Walnut Avenue Interchange	Greenfield	CR-1, CR-2, CR-3
MON-KCY006-CK	U.S. 101/1st Street Interchange	King City	CR-1, CR-2, CR-3
MON-KCY016-CK	Bypass S. San Antonio Extension	King City	CR-1, CR-2, CR-3
MON-KCY017-CK	Bypass Lonoak Connection	King City	CR-1, CR-2, CR-3
MON-MAR077-MA	Salinas Avenue Improvement Project	Marina	CR-1, CR-2, CR-3
MON-MAR114-MA	Del Monte Boulevard Widening	Marina	CR-1, CR-2, CR-3
MON-MAR-136-MA	SR 1 & Imjin Bridge (Northbound)	Marina	CR-1, CR-2, CR-3
MON-MAR-137-MA	SR 1 & Imjin Bridge (Southbound)	Marina	CR-1, CR-2, CR-3
MON-MAR-154-MA	Imjin Pkwy Widening	Marina	CR-1, CR-2, CR-3
MON-MRY016-MY	Lower Presidio Pedestrian Connection	Monterey	CR-1, CR-2, CR-3
MON-MYC062-UM	Old Stage Road Shoulder Widening	Monterey County	CR-2, CR-3
MON-MYC147-UM	SR 156 Blackie Road Extension	Monterey County	CR-1, CR-2, CR-3
MON-MYC307-UM	Davis Road Bridge Replacement	Monterey County	CR-1, CR-2, CR-3
MON-SOL002-SO	U.S. 101 North Interchange	Soledad	CR-1, CR-2, CR-3
MON-SOL003-SO	U.S. 101 South Interchange	Soledad	CR-1, CR-2, CR-3
MON-SOL014-SO	SR 146 Bypass	Soledad	CR-1, CR-2, CR-3
MON-SNS138-SL	Bardin Road Safe Routes to School/ATP	Salinas	CR-2, CR-3
MON-GRN005-GR	Thorne Road Bridge over U.S. 101	Greenfield	CR-2, C-3
MON-MAR157-MA	Reservation Road/Beach Road Improvements	Marina	CR-2, CR-3
MON-SOL044-SO	Pinnacles Bike Route	Soledad	CR-2, CR-3
MON-GRN008-GR	U.S. 101 – Walnut Avenue Interchange	Greenfield	CR-2, CR-3
MON-MAR156-MA	Imjin Parkway at SR 1	Marina	CR-2, CR-3
MON-SNS012-SL	Boronda Road Widening	Salinas	CR-2, CR-3
MON-SNS029-SL	John Street – U.S. 101	Salinas	CR-2, CR-3
MON-SNS035-SL	Lincoln Avenue Widening	Salinas	CR-2, CR-3
MON-SNS048-SL	Romie Lane Widening	Salinas	CR-2, CR-3
MON-SNS090-SL	Russell Road Extension	Salinas	CR-2, CR-3
MON-SNS096-SL	Sanborn Road Extension	Salinas	CR-2, CR-3

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AMBAG Project No.	Project	Location	Impact
MON-SNS102-SL	Constitution Boulevard Extension	Salinas	CR-2, CR-3
MON-MYC162-UM	CVMP – Laureles Grade Climbing Lane	Monterey County	CR-2, CR-3
MON-MYC238-UM	Salinas Road Improvements	Monterey County	CR-2, CR-3
MON0SOL031-SO	Intersection Improvements	Soledad	CR-2, CR-3
MON-KCY053-CK	King City Multimodal Transit Station	King City	CR-2, CR-3
MON-SNS077-SL	North Main/Espinosa Road Class II Bike Lane	Salinas	CR-1
MON-MYC149-UM	Central Avenue	Salinas	CR-1
SB-COH-A30	Meridian Street Bike Lane	Hollister	CR-2, CR-3
SB-SBC-A65	San Benito River Recreational Trail Phase I	San Benito County	CR-2, CR-3
SB-CT-A01	SR 156 Widening – San Juan Bautista to Union Road	San Benito County	CR-2, CR-3
SB-CT-A17	Airline Highway Widening/SR 25 Widening: Sunset Drive to Fairview Road	San Benito County	CR-2, CR-3
SB-CT-A44	Highway 25 Widening Phase 1	San Benito County	CR-2, CR-3
SB-CT-A45	Highway 25 Widening Phase 2	San Benito County	CR-2, CR-3
SB-CT-A02	SR 156/Fairview Road Intersection Improvements	San Benito County	CR-2, CR-3
SB-COH-A11	Union Road (formerly Crestview Drive) Construction	Hollister	CR-2, CR-3
SB-COH-A18	Westside Boulevard Extension	Hollister	CR-2, CR-3
SC-SBC-A67	Shore Road Extension	San Benito County	CR-2, CR-3
SB-SJB-A07	Third Street Extension	San Juan Batista	CR-2, CR-3
SB-SJB-A09	Connect Lang Street to The Alameda	San Juan Batista	CR-2, CR-3
SB-SJB-A25	Roundabout at 1 st Street & Lavagnino Road	San Juan Batista	CR-2, CR-3
SC-RTC 27a-RTC	Monterey Bay Sanctuary Scenic Trail Network (Coastal Rail Trail) – Design, Environmental Clearance and Construction	Santa Cruz County	CR-2, CR-3
SC-SC-P30-SCR	Murry Street to Harbor Path Connection	Santa Cruz	CR-2, CR-3
SC-RTC-24e-RTC	3 – Highway 1: Auxiliary Lanes from Park Avenue to Bay Avenue/Porter Street	Santa Cruz	CR-2, CR-3
SC-RTC-24f-RTC	2 – Highway 1: Auxiliary Lanes from 41st Avenue to Soquel Avenue and Chanticleer Bike/Pedestrian Bridge and Mar Vista Bike/Pedestrian Bridge	Santa Cruz	CR-2, CR-3
SC-CAP-P07p-CAP	Stockton Avenue Bridge Rehab	Capitola	CR-2, CR-3
SC-SC-P91-SCR	Shaffer Road Widening and Railroad Crossing	Santa Cruz	CR-2, CR-3

Environmental Impact Analysis
Cultural Resources

AMBAG Project No.	Project	Location	Impact
SC-WAT-O1A-WAT	Highway 1/Harkins Slough Road Interchange: Bicycle/Pedestrian Bridge	Watsonville	CR-2, CR-3
TRL 07bSC	MBSST Segment 7 Phase 2	Santa Cruz County	CR-2, CR-3
SC-CO-P02-USC	Airport Boulevard Improvements	Watsonville	CR-2, CR-3
SC-VAR-P45-VAR	West Side Transit Hub	Santa Cruz	CR-2, CR-3
SC-CT-P48-CT	Hwy 17 Wildlife Crossing	Santa Cruz County	CR-2, CR-3

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4.6 Energy

This section discusses the energy impacts of implementing transportation projects in the proposed Plan, as well as the energy-related consequences of land use projects that are consistent with the proposed Plan.

4.6.1 Setting

Energy relates directly to environmental quality. Energy use can adversely affect air quality and other natural resources. Most of California's air pollution is caused by burning fossil fuels. Consumption of fossil fuels is linked to changes in global climate and depletion of stratospheric ozone. Transportation energy use is related to the fuel efficiency of cars, trucks, and public transportation; choice of different travel modes (auto, carpool and public transit); vehicle speeds; and miles traveled by these modes. Construction and routine operation and maintenance of transportation infrastructure also consume energy. In addition, residential, commercial, and industrial land uses consume energy, typically through the usage of natural gas and electricity.

a. Energy Supply

California's major sources of fuel production in 2019 comprised approximately 68.9 percent crude oil, 16.5 percent natural gas, 12.6 percent nuclear, and 1.9 percent biofuels (U.S. Energy Information Administration [EIA] 2020a). California's current electricity generation is comprised of approximately 44.5 percent non-hydroelectric renewable energy, 40.1 percent natural gas, 8.8 percent hydroelectric, 6.4 percent nuclear, and 0.2 percent coal-fired (U.S. EIA 2020a).

California continues to depend upon out-of-state imports for nearly 90 percent of its natural gas supply (U.S. EIA 2020a). Natural gas production in 2019 was approximately 969,021 thousand cubic feet (Mcf) in Monterey County (California Geologic Energy Management Division [CalGEM], formerly California Department of Conservation, Division of Oil, Gas and Geothermal Resources 2019) and 21,456 Mcf in San Benito County (CalGEM 2019). There is no natural gas production in Santa Cruz County. The year 2019 is used to cross examine energy production and consumption across the AMBAG region as it is the most recent year for available information.

Monterey County contains 721 active oil wells (CalGEM 2019), which produced 311,181 barrels (bbl) of oil in 2019 (CalGEM 2019), while San Benito County contains 15 active oil wells (CalGEM 2019), which produced 14,453 bbl of oil in 2019 (CalGEM 2019). Santa Cruz County contains no active oil wells. Table 4.6-1 illustrates the oil and natural gas produced in the AMBAG region in 2019 compared to statewide statistics.

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Table 4.6-1 2019 Oil and Natural Gas Production by County

Natural Resource	California	Monterey County	San Benito County	Santa Cruz County	AMBAG Total	AMBAG Proportion of Statewide Production
Crude Oil (bbl)	156,449,220	8,311,181	14,543	0	8,325,724	5.32%
Natural Gas (Mcf)	165,986,427	969,021	21,456	0	990,477	0.60%

Source: CalGEM 2019.

b. Energy Consumption and Sources

Total energy consumption in the U.S. in 2019 was estimated at approximately 100,266 trillion Btu (U.S. EIA 2020b). Petroleum provided approximately 36.8 percent of the energy used in 2019 in the U.S. (U.S. EIA 2020b). In the same year, coal provided approximately 11.3 percent of energy consumed, natural gas provided approximately 32.1 percent, nuclear energy provided approximately 8.4 percent and total renewable sources supplied the rest at approximately 11.3 percent (U.S. EIA 2020b). On a per capita basis, California is ranked second lowest of the states in terms of energy use in 2019 (198 million Btu per person), or about 44.0 percent less than the U.S.’s average per capita consumption of 354 million Btu per person (U.S. EIA 2020c).

Electricity and Natural Gas

In 2019, California used 277,704 gigawatt hours (GWh) of electricity; approximately 32 percent of California’s electricity supply came from renewable energy sources, such as wind, solar photovoltaic, geothermal, and biomass (CEC 2021a). In 2019, California also consumed approximately 13,158 million U.S. therms of natural gas (CEC 2021b). Table 4.6-2 illustrates the electricity and natural gas consumption by county and that county’s respective proportion of statewide consumption in 2019. In addition, many rural areas within the AMBAG region rely on wood, propane or other liquefied petroleum gases (LPGs) as heating fuels. In 2019, roughly 2,640 households in Monterey County, 970 households in San Benito County, and 3,840 households in Santa Cruz County wood as their primary heating fuel (American Community Survey [ACS] 2021a, 2021b). Meanwhile, roughly 6,175 households in Monterey County, 1466 households in San Benito County, and 9,315 households in Santa Cruz County used propane or other LGPs as their primary heating fuel (ACS 2021a, 2021b).

Table 4.6-2 2019 Electricity and Natural Gas Consumption by County

County	Electricity Consumption 2019 (GWh) ¹	Electricity Consumption Per Capita (kWh)	Electricity Consumption Statewide Proportion	Natural Gas Consumption 2019 (MMthm) ²	Natural Gas Consumption Per Capita (thm)	Natural Gas Consumption Statewide Proportion
Monterey	2,471	5,693	0.9%	115.0	264.9	0.009%
Santa Cruz	1,201	4,396	0.4%	53.0	194.0	0.004%
San Benito	380	6,050	0.1%	15.7	250.0	0.001%
AMBAG total	4,052	5,262	1.5%	183.7	238.5	0.013%

¹ Electricity consumption is quantified in Millions of Kilowatt-Hours (GWh), while per capita electricity is quantified in Kilowatt-Hours (kWh). $168.8 + 1276.8 + 692.7 + 16.1 = 2154.4$

² Natural Gas consumption is quantified in Millions of Therms (MMthm), while per capita natural gas consumption is quantified in Therms (thm).

Note: The per capita consumption for natural gas and electricity are determined by using 2019 data from the CEC for overall county-wide consumption and divided by the 2019 county population retrieved from the United States Census Bureau database (770,082 persons). Individual entries may not add up to exact total amounts as a result of rounding to a single decimal point.

Sources: CEC 2021a; CEC 2021b; U.S. Census Bureau 2021

As shown in Table 4.6-2, the AMBAG region accounted for approximately 1.5 percent of the State's electricity consumption and 0.013 percent of the State's natural gas consumption in 2019. The three counties within AMBAG are served by Pacific Gas and Electric (PG&E), King City Community Power (KCCP), and Central Coast Community Energy (3CE; formerly Monterey Bay Community Power).

Petroleum

Energy consumed by the transportation sector accounts for roughly 39.4 percent of California's energy demand, amounting to approximately 3,073 trillion Btu in 2019 (U.S. EIA 2020b). California's transportation sector, including on-road and rail transportation, consumed roughly 565,056,000 bbl of petroleum fuels in 2019 (U.S. EIA 2020d). Furthermore, petroleum-based fuels are used for approximately 98.2 percent of the State's transportation activity (U.S. EIA 2020d). Most gasoline and diesel fuel sold in California for motor vehicles is refined in California to meet state-specific formulations required by the California Air Resources Board (CARB). Major petroleum refineries in California are concentrated in three counties: Contra Costa, Kern, and Los Angeles (CEC 2021c).

The estimated gasoline sales and diesel sales in the region for 2019 were approximately 97,596 million Btu as shown in Table 4.6-3.

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Table 4.6-3 Fuel Consumption by County

Fuel	2019 Annual Fuel Use (million gallons)	2019 Annual Fuel Use (million Btu)	2019 Daily Energy Use (million Btu)	2019 Daily Per Capita Energy Use (thousand Btu)¹
Monterey County				
Gasoline	174	19,102,796	52,336	0.12
Diesel	26	3,313,960	9,079	0.02
San Benito County				
Gasoline	21	2,305,510	6,316	0.10
Diesel ¹	2	254,920	698	0.01
Santa Cruz County				
Gasoline	90	9,880,757	27,071	0.10
Diesel	6	764,760	2,095	0.01
AMBAG Total	319	35,622,703	97,596	0.13

¹ The per capita consumption for fuel was determined by using 2019 data divided by the 2019 county population retrieved from the California Department of Finance.

² Retail Fuel Sales data aggregates sales for the counties of Alpine, Modoc, San Benito, Sierra, and Trinity. Diesel use in San Benito County was estimated based on the relative population of San Benito County to the total population of these counties (71.3 percent).

Note: Totals may not add up due to rounding.

Sources: CEC 2021d; CEC 2017; California Department of Finance 2021

As stated in Section 4.15, *Transportation*, 17,331,954 vehicle miles were traveled each day within the AMBAG region in 2020. Table 4.6-4 illustrates the daily and VMT for the AMBAG region in 2020.

Table 4.6-4 Daily VMT for the AMBAG Region

County/Area	Daily VMT (2020 Baseline)
Monterey County	10,478,661
San Benito County	1,811,724
Santa Cruz County	5,041,569
AMBAG Total	17,331,954

Note: individual numbers may not add up to totals due to rounding.

Source: EMFAC Summary Outputs (2045 MTP/SCS Appendix G)

Alternative Fuels

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

- **Hydrogen** is being explored for use in combustion engines and fuel cell electric vehicles. There is interest in hydrogen as an alternative transportation fuel stems from its clean-burning qualities, its potential for domestic production, and the fuel cell vehicle's potential for high efficiency (two to three times more efficient than gasoline vehicles). Currently, 48 hydrogen refueling stations are located in California; however, none are located in the AMBAG region (U.S. Department of Energy [DOE] 2021).
- **Biodiesel** is a renewable alternative fuel that can be manufactured from vegetable oils, animal fats, or recycled restaurant greases. Biodiesel is biodegradable and cleaner-burning than petroleum-based diesel fuel. Biodiesel can run in any diesel engine generally without alterations, but fueling stations have been slow to make it available. There are currently 22 biodiesel refueling stations in California, none are located in the AMBAG region (U.S. DOE 2021).
- **Electricity** can be used to power electric and plug-in hybrid electric vehicles directly from the power grid. Electricity used to power vehicles is generally provided by the electricity grid and stored in the vehicle's batteries. Fuel cells are being explored as a way to use electricity generated on board the vehicle to power electric motors. There are currently 13,877 charging stations in California, including charging stations throughout Monterey County, San Benito County, and Santa Cruz County (U.S. DOE 2021).

4.6.2 Regulatory Setting

Programs and policies at the State and national levels have emerged to bolster the previous trend towards energy efficiency, as discussed below.

a. Federal Laws, Regulations, and Policies

Energy Policy and Conservation Act and CAFE Standards

The Energy Policy and Conservation Act in 1975 established the Corporate Average Fuel Economy Standards (CAFE) standards are Federal rules established by the National Highway Traffic Safety Administration (NHTSA) that set fuel economy standards for all new passenger cars and light trucks sold in the United States. The CAFE standards become more stringent each year, reaching an estimated 38.3 miles per gallon for the combined industry-wide fleet for model year 2020 (77 Federal Register 62624 et seq. [October 15, 2012 Table I-1). It is, however, illegal for individual municipalities to adopt more stringent fuel efficiency standards. The Clean Air Act (CAA) (42 United States Code [USC] Section 7543[a]) states that “no state or any political subdivision therefore shall adopt or attempt to enforce any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines subject to this part.” In August 2016, the U.S. EPA and NHTSA announced the adoption of the

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phase two programs related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi- trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower carbon dioxide (CO₂) emissions by approximately 1.1 billion MT CO₂ and reduce oil consumption by up to two billion barrels over the lifetime of the vehicles sold under the program.

In August 2018, the U.S. EPA and NHTSA issued a proposed ruling to roll back some of the fuel economy and GHG standards for medium- and heavy-duty trucks. The new ruling proposed by the U.S. EPA and NHTSA, the Safer Affordable Fuel-Efficient (SAFE) Vehicle Rules, would replace the CAFE standards set for model year 2022-2025 passenger car and light trucks, while the 2021 model year vehicles will maintain the CAFE standards. The ruling is split into two parts.

In September 2019, U.S. EPA and the National Highway Traffic Safety Administration issued the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One, “One National Program” (84 Federal Register 51310). This rulemaking revokes a waiver granted by U.S. EPA to the State of California under Section 209 of the CAA to enforce more stringent emission standards for motor vehicles than those required by U.S. EPA for the explicit purpose of GHG reduction, and indirectly, criteria air pollutants and ozone precursor emission reduction. This revocation became effective on November 26, 2019, potentially restricting the ability of CARB to enforce more stringent GHG emission standards for new vehicles and set zero emission vehicle mandates in California.

In April 2020, the federal agencies issued the SAFE Vehicles Rule Part Two addresses CAFE standards for passenger cars and light trucks for model years 2021 to 2026 (85 Federal Register 24174). This rulemaking proposes new CAFE standards for model years 2022 through 2026 and would amend existing CAFE standards for model year 2021. The proposal would retain the model year 2020 standards (specifically, the footprint target curves for passenger cars and light trucks) through model year 2026. The proposal addressing CAFE standards was jointly developed by NHTSA and U.S. EPA, with U.S. EPA simultaneously proposing tailpipe CO₂ standards for the same vehicles covered by the same model years.

At the time of preparation of this EIR, the implications of the SAFE Rule on California’s future emissions are uncertain. On February 8, 2021, the incoming federal administration issued a stay in regard to the legal challenges by California and other states to the revocation of California’s waiver (JDSupra 2021a). As of May 11, 2021, there is currently a proposed rule to withdraw Part One of the SAFE Rule (Docket No. NHTSA-2021-0030).

Executive Order on Strengthening American Leadership in Clean Cars and Trucks

On August 5, 2021 President Biden signed an executive order setting a goal setting a goal that 50 percent of all new passenger cars and light trucks sold in 2030 be zero-emission vehicles. The executive order also mandates the EPA administrator and secretary of transportation to start new rulemaking on multi-pollutant emissions standards and fuel economy standards for

passenger cars and light-duty trucks with model years from 2027 through 2030 (White House 2021a).

b. State Laws, Regulations, and Policies

Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as CEC. The Act established a State policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The CPUC regulates privately-owned utilities in the energy, rail, telecommunications, and water fields.

Integrated Energy Policy Report (IEPR)

Senate Bill (SB) 1389 (Chapter 568, Statutes of 2002) required CEC to conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The CEC 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.

CEC adopts an IEPR every two years and an update every other year. The 2019 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 electricity resource and supply plans; electricity and natural gas demand forecasts; natural gas outlooks; transportation energy demand forecasts; energy efficiency savings; integrated resource planning; a barriers study; climate adaptation and resilience; renewable gas; southern California energy reliability; distributed energy resources; strategic transmission investment plans; and existing power plan reliability issues (CEC 2020).

Senate Bill 1078: California Renewables Portfolio Standard Program.

SB 1078 (Chapter 516, Statutes of 2002) established a renewable portfolio standard (RPS) for electricity supply. The RPS requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of retail sales from renewable sources by 2017. In addition, electricity providers subject to the RPS are required increase their renewable share by at least one percent each year.

Senate Bill X1-2: California Renewable Energy Portfolio Standard

In 2011, Governor Brown signed SB X1-2, which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20% of electricity retail sales from renewable sources by 2010, and 33% by 2020. CPUC and CEC jointly implement the Statewide RPS program through rulemakings and monitoring the activities of electric energy utilities in the state.

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SB 350

In 2015, Governor Brown signed SB 350, which established new renewable portfolio standard targets, requiring retail sellers of electricity to provide at least 50% of electricity retail sales from renewable sources by 2030. SB 350 also set a goal of doubling energy efficiency savings in electricity and natural gas by 2030.

SB 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state’s Renewables Portfolio Standard Program. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 50 percent by 2026, 60 percent by 2030, and 100 percent by 2045.

Assembly Bill 1493: Reduction of Greenhouse Gas Emissions

AB 1493 (Chapter 200, Statutes of 2002), known as the “Pavley bill,” amended Health and Safety Code sections 42823 and 43018.5 requiring CARB to develop and adopt regulations that achieve maximum feasible and cost-effective reduction of GHG emissions from passenger vehicles, light-duty trucks and other vehicles used for noncommercial personal transportation in California.

Implementation of new regulations prescribed by AB 1493 required that the State of California apply for a waiver under the federal Clean Air Act. Although EPA initially denied the waiver in 2008, EPA approved a waiver in June 2009 and in September 2009, CARB approved amendments to its initially adopted regulations to apply the Pavley standards that reduce GHG emissions to new passenger vehicles in model years 2009 through 2016. By 2025, the rules will be fully implemented, and new automobiles will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions from their model year 2016 levels (CARB 2011).

Assembly Bill 1007: State Alternative Fuels Plan

AB 1007 (Chapter 371, Statutes of 2005) required CEC to prepare a State plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels Plan (SAF Plan) in partnership with the ARB and in consultation with other State, federal and local agencies. The SAF Plan presents strategies and actions California must take to increase the use of alternative non- petroleum fuels in a manner that minimizes 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 fuels use, reduce GHG emissions and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Executive Order S-01-07 (Low Carbon Fuel Standard)

Executive Order S-01-07 (17 CCR 95480 et seq.) requires the state to achieve a 10 percent or greater reduction by 2020 in the average fuel carbon intensity for transportation fuels in California regulated by ARB. ARB identified the Low Carbon Fuel Standard (LCFS) as a discrete early action item under AB 32.

In 2018, CARB approved amendments to the LCFS regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

Executive Order B-16-2012

EO B-16-2012 establishes goals for electric vehicle adoption; goals include construction of relevant infrastructure to support achieving 1.5 million zero emission vehicles (ZEV) by 2025. The order directs CARB, the CEC, the CPUC, and other relevant agencies to establish plans to help achieve these goals. Furthermore, the order states that new vehicle purchases for the California's state vehicle fleet shall consist of at least 25 percent ZEVs by 2025.

Bioenergy Action Plan, Executive Order S-06-06

Executive Order (EO) S-06-06, 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 EO establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020 and 75 percent by 2050. EO S-06-06 also calls for the State to meet a target for use of biomass electricity. The 2011 Bioenergy Action Plan identifies those barriers and recommends actions to address them so that the State can meet its clean energy, waste reduction and climate protection goals (CEC 2011). The 2012 Bioenergy Action Plan updates the 2011 Plan and provides a more detailed action plan to achieve the following goals (CEC 2012):

- 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.

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California Building Energy Efficiency Standards

California Code of Regulations Title 24, Part 6 contains California's Energy Efficiency Standards for Residential and Non-residential Buildings. California Building Energy Efficiency Standards were established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and nonresidential buildings. The standards are updated on an approximately three-year cycle to allow consideration and possible incorporation of new efficient technologies and methods. In 2019, CEC updated the Building Energy Efficiency Standards with more stringent requirements effective January 1, 2020. All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The CEC Impact Analysis estimates that nonresidential buildings will be 30 percent more energy efficient compared to buildings built consistent with 2016 Building Energy Efficiency Standards, and single-family homes will be 7 percent more energy efficient (CEC 2018). Due to the solar requirement for all new homes, the CEC also estimates that the 2019 standards will cut energy demand from grid electricity in new homes by more than 50 percent (CEC 2018). The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary due to local climatologic, geologic, or topographic conditions, provided that these standards exceed those provided in Title 24. At the time of this EIR, the 2022 California Code of Regulations Title 24 is currently out for review and is proposed to be adopted before the end of 2021.

California Green Building Standards Code

California Code of Regulations Title 24, Part 11 contains California's green building code (CALGreen), which was developed to provide a consistent approach to green building within the State. The original 2009 CALGreen was included voluntary measures and the 2016 CALGreen version first instituted mandatory minimum environmental performance standards for all ground-up new construction of non-residential and residential structures. The most recent update in January 2020 outlines minimum requirements for newly constructed residential and nonresidential buildings to reduce GHG emissions through improved efficiency and process improvements. It also includes voluntary tiers to further encourage building practices that improve public health, safety, and general welfare by promoting a more sustainable design.

c. Regional Laws, Regulations, and Policies

Electric Vehicle Infrastructure for the Monterey Bay Area Plan

vehicle charging network in the Monterey Bay Area (AMBAG 2013a). The three major goals

- Provide charging opportunities for plug-in electric vehicle owners that lack access to home charging
- Extend the range of plug-in electric vehicle for intra- and interregional travel along various corridors
- Maximize all electric miles by providing ample opportunities for charging while minimizing the risk of stranded plug-in electric vehicles

Monterey Bay Plug-In Electric Vehicle Readiness Plan

Central Coast Zero Electric Vehicle Strategy

AMBAG is working with the Santa Barbara County Association of Governments (SBCAG) and the San Luis Obispo Council of Governments (SLOCOG) to develop the Central Coast Zero Electric Vehicle Strategy (CCZEVS). The CCZEVS will identify gaps and opportunities to implement ZEV infrastructure on the Central Coast, including on or near the State Highway System, major freight corridors, and transit hubs. This strategy is important as it will seek to accelerate large scale, affordable, and equitable ZEV development across all altitudes of the public sphere in the wake of Governor Newsom's EO N-79-20. This strategy will directly advance the goals outlined in the 2045 MTP/SCS as well as the goals of CalSTA's CAPTI. The CCZEV is scheduled to be completed in 2023.

AMBAG Sustainability Program

The AMBAG Sustainability Program works collaboratively with local stakeholders and regional partners to provide energy efficiency, renewable energy, electric vehicle, and sustainability related resources to our communities. Currently AMBAG staff is working with partners throughout rural California to explore pathways designed to bring new energy efficiency programs and resources to rural communities. AMBAG staff also works with local agencies to identify energy efficiency opportunities, discuss potential funding opportunities, and provide technical assistance for energy benchmarking, energy auditing, and grant reporting.

d. Local Laws, Regulations, and Policies

The General Plans for local jurisdictions in the AMBAG region contain initiatives to reduce overall energy consumption and improve energy efficiency. Many of the cities' General Plans

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also contain goals that guide their intent to reduce energy consumption. For example, the Conservation Element of the City of Monterey General Plan (City of Monterey 2005) contains Goal e, *Encourage the effective use of energy in all its critical forms by public and private users alike*. This goal is then actualized through programs such as Program e.1.1, *Consider aesthetically compatible independent energy sources in new public and private buildings*, and Program e.1.2, *Encourage energy retrofitting in existing residential and commercial structures*. Building and transportation energy conservation has been improvement significant over time through statewide policies; however, the Circulation, Conservation and Land Use elements of local jurisdiction General Plans help facilitate the implementation of state and local energy efficiency initiatives.

Monterey County

The Monterey County General Plan (Monterey County 2010) addresses energy efficiency in the Conservation and Open Space Elements. The goals and policies of their Conservation and Open Space Element is to promote energy efficiency by encouraging all energy sectors (i.e., agricultural, residential, commercial, industrial, and public building applications) to employ renewable energy sources to the maximum extent feasible.

San Benito County

The San Benito County 2035 General Plan (San Benito County 2015a) addresses energy efficiency in the Land Use, Public Facilities and Services and Natural and Cultural Resources Elements. The goals and policies of the Land Use Element encourage the County to use energy conservation and efficiency techniques in new building design, orientation, and construction (San Benito County 2015b), while policies found in the Natural and Cultural Resources and Public Facilities and Services Elements encourage greater utilization and accessibility to renewable energy sources (San Benito County 2015a).

Santa Cruz County

The Santa Cruz County General Plan and Local Coastal Program (Santa Cruz County 1994) also addresses energy efficiency in their Conservation and Open Space Elements. Objective 5.17, Energy Conservation, states that in accordance with Measure C, The Decade of the Environmental Referendum from 1990, the County will seek to maximize conservation and efficient use of energy in the private and public sections and encourage the development and use of locally available renewable energy resources in order to reduce dependence on imported and nonrenewable energy supplies (Santa Cruz County 1994).

In July 2020, the City of Santa Cruz enacted an ordinance which prohibits the installation of natural gas hookups in most new buildings. The ordinance applies to all residential and commercial buildings, except in cases where developers can prove electric systems are not feasible, or where the exception is for the public good, such as for hospitals or water treatment plants (City of Santa Cruz 2020).

4.6.3 Impact Analysis

a. Methodology and Significance Thresholds

Appendix G of the *State CEQA Guidelines* identifies the following criteria for determining whether a project's impacts would have a significant impact to energy resources. Because the 2045 MTP/SCS and RTPs are regional plans and not a specific and single construction project, AMBAG has chosen to expand on threshold 1, below, such that energy consumption can be evaluated at a regional level rather than project level. This is consistent with the programmatic nature of the EIR. For the purposes of this EIR, implementation of the 2045 MTP/SCS and RTPs would have a significant impact if it would:

1. Result in significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation (including transportation), based on whether the project would:
 - a. Result in an increase in overall per capita energy consumption relative to baseline conditions;
 - b. Result in an increased reliance on fossil fuels and decreased reliance on renewable energy sources; or
2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Direct and Indirect Energy Consumption

For this analysis, the calculation of total energy consumption follows the Input-Output methodology suggested by Caltrans (Caltrans 1983). Caltrans methodology provides for the calculation of the cumulative energy consumption, including energy consumption that would be due to the construction of 2045 MTP/SCS projects, and energy consumption that is not due to the 2045 MTP/SCS, but rather is due to changes in VMT caused by socioeconomic growth (e.g., population and employment), land use policies, and the existing transportation infrastructure.

Energy consumption from transportation projects is categorized in terms of "direct" and "indirect" energy.

Direct Energy Consumption

Direct energy is that energy used in the daily operation of the transportation system, including the propulsion of passenger vehicles (automobiles, vans, and trucks) and transit vehicles, including buses and trains. The direct energy analysis for the project is based on baseline (2020), and 2045 VMT with and without the 2045 MTP/SCS (as analyzed in Section 4.15, *Transportation*).

The baseline gasoline and diesel fuel consumption data for Monterey, San Benito, and Santa Cruz counties was converted to Btu (refer to Table 4.6-3). Future gasoline and diesel fuel consumption with and without adoption of the 2045 MTP/SCS was forecasted using CARB's

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Emission Factor (EMFAC) Model Summary Outputs (2045 MTP/SCS Appendix G; refer to Table 4.6-6).

It should be noted that the Btu/VMT factor is forecast to continue to decrease into the future due to improved fuel economy. Applying the 2019-based factor to future year (2045) VMT therefore provides a conservative evaluation of energy consumption as the energy efficiency of vehicles in 2045 is likely to be higher than current fuel efficiency of vehicles.

Indirect Energy Consumption

Indirect energy is the energy required to construct, operate, and maintain the transportation network, as well as to manufacture and maintain on-road vehicles and transit vehicles. Therefore, construction-related impacts associated with the 2045 MTP/SCS are included in the indirect energy analysis. The indirect energy analysis was conducted using the Input-Output methodology developed by Caltrans (Caltrans 1983). This method converts VMT, lanes miles, or construction dollars into energy consumption based on data from other transportation projects in the United States. Table 4.6-5 shows the indirect energy consumption factors used in this analysis.

Table 4.6-5 Indirect Energy Consumption Factors

Mode	Factor
Manufacturing	
Passenger Vehicles	1,410 Btu/VMT
Transit Buses	3,470 Btu/VMT
Roadway (Construction)	27,300 Btu/1977 dollars
Rail (Construction)	2,108 Btu/VMT
Maintenance	
Passenger Vehicles	1,400 Btu/VMT
Transit Buses	13,142 Btu/VMT
Rail	7,060 Btu/VMT

Source: Caltrans 1983.

b. Project Impacts and Mitigation Measures

This section describes energy impacts associated with the transportation projects and land use scenario included in the 2045 MTP/SCS. Due to the programmatic nature of the 2045 MTP/SCS, a precise, project level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2045 MTP/SCS would result in energy impacts as described in the following sections.

Threshold 1: Result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation (including transportation), based on whether the project would:

- a) Result in an increase in overall per capita energy consumption relative to baseline conditions, or otherwise use energy in an inefficient, wasteful, or unnecessary manner

Impact E-1 FUTURE TRANSPORTATION IMPROVEMENT PROJECTS AND IMPLEMENTATION OF THE LAND USE SCENARIO ENVISIONED BY THE 2045 MTP/SCS WOULD NOT RESULT IN A SIGNIFICANT ENVIRONMENTAL IMPACT DUE TO WASTEFUL, INEFFICIENT, OR UNNECESSARY CONSUMPTION OF ENERGY RESOURCES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Daily operation of the regional transportation system uses energy in the form of fuel consumed by propulsion of passenger vehicles (automobiles, vans, and trucks) and transit vehicles (buses and trains). Some highway and roadway improvements included in the 2045 MTP/SCS would increase vehicle capacity, allowing a greater number of vehicles to use facilities in the region. Increases in motor vehicle trips are primarily a combined function of population and employment growth. As discussed in Section 4.15, *Transportation*, the expansion of highway capacity in the AMBAG region, such as adding additional travel lanes to U.S. 101 near Salinas, are examples of projects that may induce travel demand. It should be noted that population growth and growth in VMT would occur within the region regardless of whether the 2045 MTP/SCS is implemented. As a result, energy consumption as it relates to vehicles would increase beyond the 2020 baseline in any scenario. However, many 2045 MTP/SCS projects (e.g., bikeway and pedestrian projects, rail projects, transit projects, Transportation System Management [TSM] and Transportation Demand Management [TDM] projects, etc.) would improve the availability of alternative transportation modes and help reduce congestion and resultant air pollutants in the AMBAG region.

Construction and maintenance of the proposed 2045 MTP/SCS projects would result in short-term consumption of energy resulting from the use of construction equipment and processes. In addition, roadway and transit construction materials, such as asphalt, concrete, surface treatments, steel, rail ballast, as well as building materials, require energy to be produced, and would likely be used in projects that involve new construction or replacement of older materials, as well as construction of future infill and transit oriented development (TOD) projects/developments envisioned by the 2045 MTP/SCS. All construction and maintenance conducted pursuant to the 2045 MTP/SCS, or as a result of improvements made by the 2045 MTP/SCS, would be required to comply with relevant provisions of CALGreen.

Table 4.6-6 shows daily VMT and estimated fuel consumption translated into energy use (Btu) in the AMBAG region under 2020 baseline conditions, 2045 no project conditions, and 2045 conditions with implementation of the MTP/SCS.

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Table 4.6-6 Direct and Indirect Transportation Energy Use

Year	Daily VMT	Direct Energy Use (Daily Billion Btu)	Indirect Energy Use (Daily Billion Btu)	Total Energy Use (Daily Billion Btu)	Per Capita Energy Use (Daily Thousand Btu)
2020 Baseline	17,331,954	191.74	45.0	236.8	305.6
2045 No Project	20,041,051	139.1	52.6	191.7	220.4
2045 MTP/SCS	20,032,142	139.1	65.9	205.0	235.7
Change % (Baseline vs. 2045 MTP/SCS)¹	16%	-27%	46%	-13%	-23%

¹A negative percentage represents a decrease

Notes: Daily VMT, drawn from Table 4.6-4, was used on information from Table 4.6-5 to identify direct and indirect daily Btu consumption. 2020 U.S. Census Bureau population records (774,729 persons in 2020 and 869,776 persons in 2045) were then consulted to identify daily per capita Btu consumption (U.S. Census Bureau 2021).

As shown in Table 4.6-6, regionwide daily VMT and total daily energy use would increase over time as the result of regional socioeconomic (population and employment) growth; however, this increase would be less under the 2045 MTP/SCS than under the No Project scenario. The 2045 MTP/SCS would result in an approximately 27 percent reduction in direct energy usage from vehicle fuels when compared to 2020 baseline conditions; when compared to the no project scenario would result in a negligible difference in direct energy use. The 2045 MTP/SCS would result in an approximately 13 percent decrease in total per capita energy usage when compared to 2020 baseline conditions; however, this would be a smaller reduction in per-capita energy use than the No Project scenario.

Transportation Improvement Projects

The transportation improvements proposed under the 2045 MTP/SCS would result in a more efficient transit system. The 2045 MTP/SCS would result in greater availability of public transit and other alternative modes of transportation, such as Complete Streets and active transportation. In addition, Santa Cruz County proposes other transportation projects that promote the use of alternatively fueled vehicles. For example, the County's Electric Bicycle Commuter Incentive Program would provide financial incentives to encourage the use of electric bicycles over gasoline powered vehicles, and the Transportation System Electrification Program would invest in more charging stations for electric vehicles, plug-in hybrids, ebikes, and scooters throughout the county. Transportation projects, such as the aforementioned, would change the transportation system in the AMBAG region to be less reliant on petroleum products and would promote fuel efficiency. In addition, improvements to State fuel efficiency standards for vehicles and State-mandated increases in the supply and use of alternative transportation fuels would further reduce fuel consumption, such as continued implementation of the Electric Vehicle Infrastructure for the AMBAG region.

Land Use Changes

The 2045 MTP/SCS emphasizes a regional land use scenario that promotes mixed use and infill development in existing commercial corridors in combination with high quality transit service (e.g., bus service that has headways of 15 minutes or less during the peak period, Bus Rapid Transit [BRT], express bus or rail) and improved bicycle and pedestrian infrastructure. Although some outlying development in more rural areas would still occur under the 2045 MTP/SCS, the emphasis on mixed use and infill projects would help reduce per-capita VMT and energy use because they would locate people closer to existing goods and services, thereby resulting in shorter vehicle trips and/or promoting walking or biking and they would locate people closer to existing transportation hubs, thereby encouraging the use of alternative modes of transit (e.g., buses) and resulting in fewer vehicle trips. Operation of future infill projects would increase overall demand for energy beyond existing demand; however, such development would not require unusual, unnecessary, or wasteful amounts of energy. Future land use projects would to be constructed using standard building practices. These projects would also be subject to CALGreen and California Building Energy Efficiency Standards, which set forth specific energy efficiency requirements related to design, construction methods and materials.

In summary, the 2045 MTP/SCS would not increase overall per capita energy consumption relative to baseline conditions, or otherwise result in use of energy in an inefficient, wasteful, or unnecessary manner. Impacts would be less than significant.

Mitigation Measures

None required.

Threshold 1: Result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation (including transportation), based on whether the project would: b) Result in an increased reliance on fossil fuels and decreased reliance on renewable energy sources

Impact E-2 THE 2045 MTP/SCS WOULD NOT INCREASE RELIANCE ON FOSSIL FUELS OR DECREASE RELIANCE ON RENEWABLE ENERGY SOURCES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Pursuant to CPUC regulations, utilities such as PG&E, KCCP and 3CE utilize a long-term planning process to plan for increased energy demand in the future with its publication of ten-year integrated resource plans. The most recent PG&E plan, titled *PG&E's 2020 Integrated Resource Plan*, details planned projects between 2020 and 2030 that aim to ensure compliance with North American Electric Reliability Corporation standards, improve transmission system access for renewable generation to meet Renewable Portfolio Standard (RPS) goals and targets, improve service reliability for end users and coordinate long-term plans for PG&E's transmission system (PG&E 2020). Similarly, the most recent 3CE plan, titled *Monterey Bay Community Power Authority 2020 Integrated Resource Plan*, outlines plans to increase annual accounts from 295,000 to 400,000, increase service capacity by 5,000

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gigawatt-hours per year, and achieve 60 percent renewable energy procurement by 2025 and 100 percent renewable energy procurement by 2030 (3CE 2021).

Each Integrated Resource Plan published is a ten-year planning document; thus, each utility will continue to assess the reliability and capacity of its energy facilities every ten years based on critical system conditions, growth assumptions and study years agreed upon by the California Independent System Operator Corporation (CAISO) and participating stakeholders.

As shown in Table 4.6-6 and discussed above, the 2045 MTP/SCS would result in an approximately 13 percent reduction in total energy usage when compared to 2020 baseline conditions. Projects in the 2045 MTP/SCS that specifically support alternative energy use include the following:

- **AMBAG ID SC-VAR-907-VAR: Transportation System Electrification in Santa Cruz County.** AMBAG in partnership with other local government agencies and electric vehicle manufacturers, businesses, and Ecology action would work together to establish more electric vehicle charging stations for electric vehicles, plug-in hybrids, neighborhood electric vehicles, ebikes, and scooters in the county.
- **AMBAG ID CO 36SC: State Park Drive/Seacliff Village Improvements in Santa Cruz County.** Sidewalks, bike lanes, bus turnouts, central plaza, street lighting, electric vehicle charging station, parking landscaping, drainage, and roadway overlay in the core area of the Seacliff State Beach park in the town of Aptos.

In addition, several Active Transportation projects in Monterey, San Benito, and Santa Cruz counties would increase multi-modal transportation by providing bike lanes and/or sidewalks for better connectivity.

As described under Impact E-1, the 2045 MTP/SCS emphasizes a regional land use scenario that promotes mixed use and infill development in existing commercial corridors in combination with high quality transit service and improved bicycle and pedestrian infrastructure, which would reduce per-capita energy use. Operation of future infill projects would increase overall demand for energy beyond existing demand; however, such development would not require unusual, unnecessary, or wasteful amounts of energy.

Therefore, the 2045 MTP/SCS would not increase reliance on fossil fuels or decrease reliance on renewable energy sources. Impacts would be less than significant.

Mitigation Measures

None required.

Threshold 2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency

Impact E-3 THE 2045 MTP/SCS WOULD NOT CONFLICT WITH OR OBSTRUCT A STATE OR LOCAL PLAN FOR RENEWABLE ENERGY OR ENERGY EFFICIENCY. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

As discussed above, the 2045 MTP/SCS would result in an approximately 13 percent decrease in total per capita energy use in the region compared to 2020 baseline conditions and would not result in energy used in an unnecessary or wasteful manner. Implementation of the 2045 MTP/SCS would result in lesser net energy consumption than 2020 baseline conditions and the 2045 MTP/SCS would not result in the inefficient, wasteful, or unnecessary consumption of energy because it would be consistent with existing relevant energy conservation policies. Accordingly, inconsistencies between the 2045 MTP/SCS and adopted plans and policies related to energy conservation or renewable energy have not been identified. The discussion below further examines consistency with adopted plans and policies related to energy conservation or renewable energy.

AMBAG monitors regulations related to fuel efficiency standards and alternative fuel vehicles. The 2045 MTP/SCS would not conflict with such regulations (e.g., Energy Policy and Conservation Act and CAFE Standards, EPCRA92, Energy Independence and Security Act of 2007, AB 1493: Reduction of Greenhouse Gas Emissions, AB 1007: State Alternative Fuels Plan).

The 1975 Warren-Alquist Act established the California Energy Resource Conservation and Development Commission, now known as the California Energy Commission (CEC), and established a State policy to reduce wasteful, uneconomical, and unnecessary uses of energy. Based on the data above, and explained in the conclusion below, the 2045 MTP/SCS would not result in wasteful, inefficient, or unnecessary use of energy. Therefore, the 2045 MTP/SCS is consistent with the Warren-Alquist Act policies.

SB 1078 as accelerated by SB 350 and SB 100, establishes a renewable portfolio standard for electricity supply, and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 60 percent of electricity retail sales from renewable sources by 2030. In addition, the 2019 IEPR includes a set of strategies to address California's future energy needs. Key topics covered in the report include electricity resource and supply plans; electricity and natural gas demand forecasts; natural gas outlooks; transportation energy demand forecasts; energy efficiency savings; integrated resource planning; a barriers study; climate adaptation and resilience; renewable gas; distributed energy resources; strategic transmission investment plans; and existing power plan reliability issues. The proposed 2045 MTP/SCS would not conflict with these policies. Refer to Section 4.8, *Greenhouse Gas Emissions/Climate Change*, for a discussion of greenhouse gas emissions reductions related to the proposed 2045 MTP/SCS.

Locally, the proposed 2045 MTP/SCS would be consistent with the 2010 Monterey County General Plan, the 1994 Santa Cruz County General Plan and Local Coastal Program, and the 2015 San Benito County 2035 General Plan energy policies. These plans encourage the use of renewable energy, energy conservation, and energy efficiency techniques in all new building

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design, orientation, and construction and support of alternative transportation and fuels. As described above, the 2045 MTP/SCS includes TDM and TSM intended to improve the efficiency and effectiveness of the transportation system, reducing fuel consumption, transit, and other alternative modes of transportation, such as new pedestrian and bicycle facilities and promotes mixed use and infill development.

In summary, the 2045 MTP/SCS is consistent with applicable plans and policies regarding energy conservation and renewable energy. Impacts would be less than significant.

Mitigation Measures

None required.

c. Specific 2045 MTP/SCS Project That May Result in Impacts

The analysis within this section discusses the potential energy related impacts associated with the 2045 MTP/SCS. The transportation projects within the 2045 MTP/SCS are evaluated herein in their entirety and are intended to improve circulation rather than cause adverse impacts. However, as described above, the 2045 MTP/SCS would increase both energy usage both directly and indirectly as a result of project construction and operation. These effects have been found to be less than significant, as described above. Any number of the 2045 MTP/SCS projects would presumably increase energy usage. For example, any project that requires construction equipment or lighting improvements would increase energy usage. Thus, no specific projects are listed in this section related to the adverse impacts on energy in the AMBAG region.

4.7 Geology and Soils

This section describes seismic ground shaking, erosion, geologic stability, and paleontological resource impacts of development facilitated by the 2045 MTP/SCS.

4.7.1 Setting

All three counties in the AMBAG region are part of the Coast Ranges geomorphic province, a region dominated by active tectonics at the margin of the Pacific and North American tectonic plates. Existing geologic, soils and flooding conditions for each county are briefly summarized below. Figure 4.7-1, Figure 4.7-2 and Figure 4.7-3 show known active faults in each county. Figure 4.7-4 shows the envisioned 2045 MTP/SCS projects near fault areas and Figure 4.7-5 shows the planning area and its proximity to Alquist-Priolo Zones.

a. Monterey County

At the southwestern portion of AMBAG's planning area, Monterey County has approximately 100 miles of coastline, two coastal ranges (the Santa Lucia and Gabilan Mountain Ranges) and two valleys (the Salinas and Carmel Valleys).

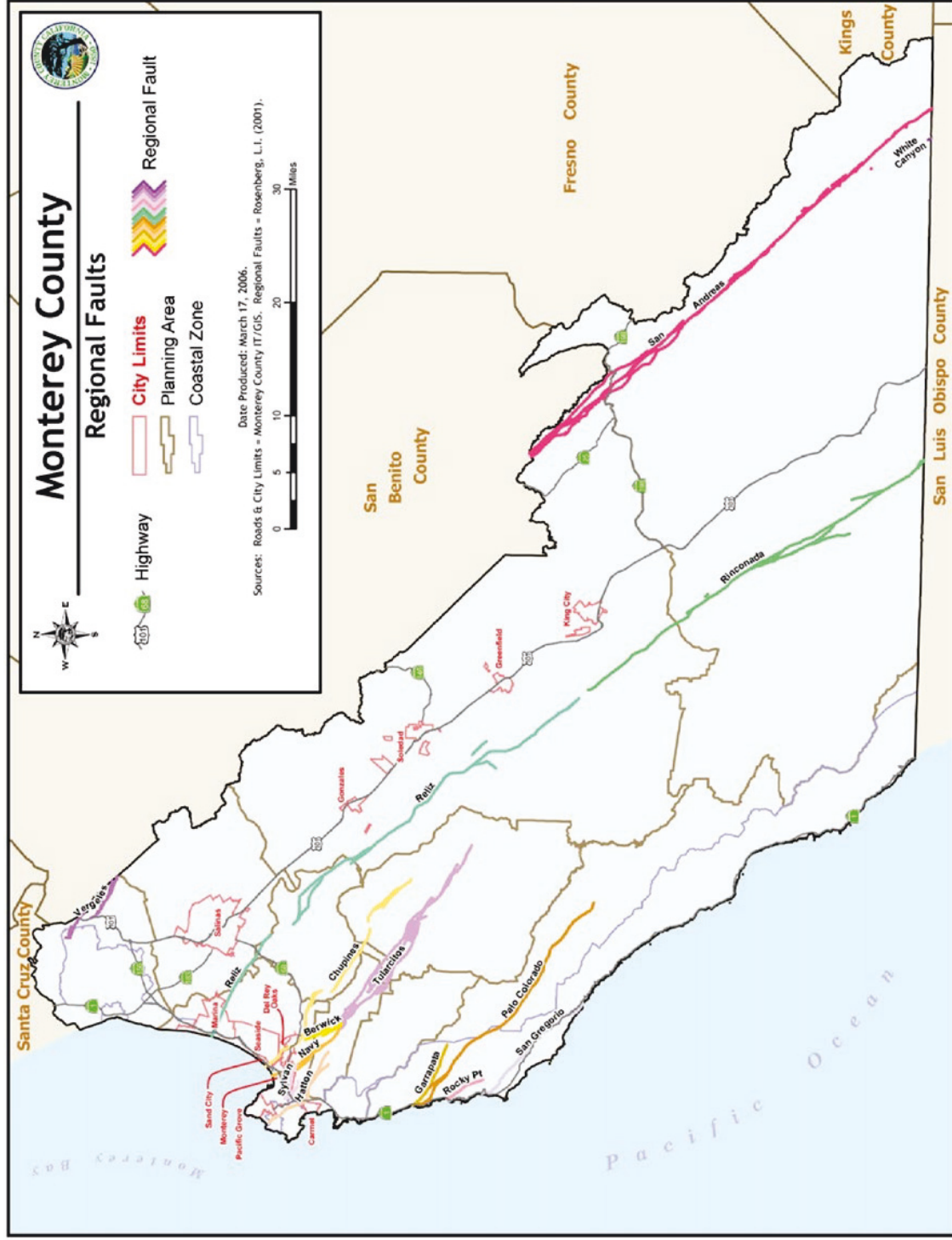
Geologic Formations

The interaction between Pacific and North American tectonic plates has created the primary geologic formations in Monterey County, as uplift along faults is largely responsible for the formation of the Coast Ranges, including the Santa Lucia and Gabilan Ranges. These granitic and metamorphic mountain ranges trend in a northwest-southeast direction, with the Santa Lucia Range along the coast and the Gabilan Range along Monterey County's eastern border (RWMG 2013). Located between the Santa Lucia and Gabilan mountain ranges, the Salinas Valley is a broad basin filled with several thousand feet of sediment. This valley is 130 miles long and generally 10 to 20 miles wide. The northern part of Monterey County, between the Salinas River mouth and the Pajaro Valley, has a more undulating topography and wide sandy beaches at the coastline.

Earthquake Ground Shaking and Fault Rupture

According to the Monterey County Multi-Jurisdictional Hazard Mitigation Plan, several active faults run through the County (Monterey County 2014). These faults include but are not limited to the San Andreas, Reliz, Chupines, Tularcitos, Berwick, Navy, Sylvan, Hatton and Vergeles Faults (see Figure 4.7-1). Historically, most of the earthquakes that have occurred in Monterey County originated from movement along the San Andreas Fault system, which runs through the southeastern portion of the county for approximately 30 miles. This fault system is the most active in California and, in its entirety, runs 800 miles along the California coastline. Fault rupture can occur during severe earthquakes and produce ground surface displacements (vertical or horizontal offsets) ranging in severity. Where these faults cross structures (roads, bridges, buildings), substantial damage can

Figure 4.7-1 Monterey County Fault Zones



Source: Monterey County General Plan Draft EIR, Exhibit 4.4.1, 2008.

Figure 4.7-2 San Benito County Fault Zones

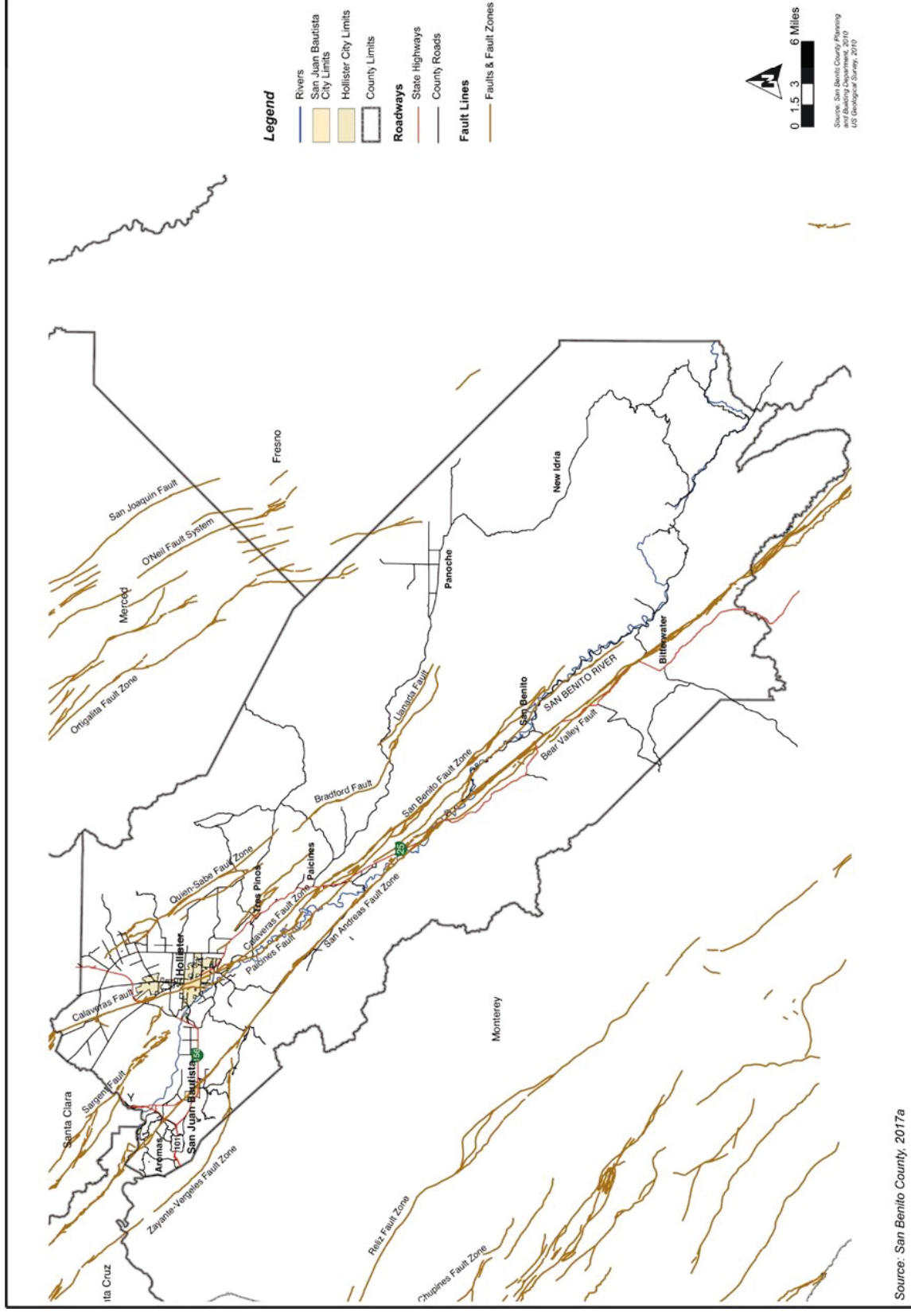
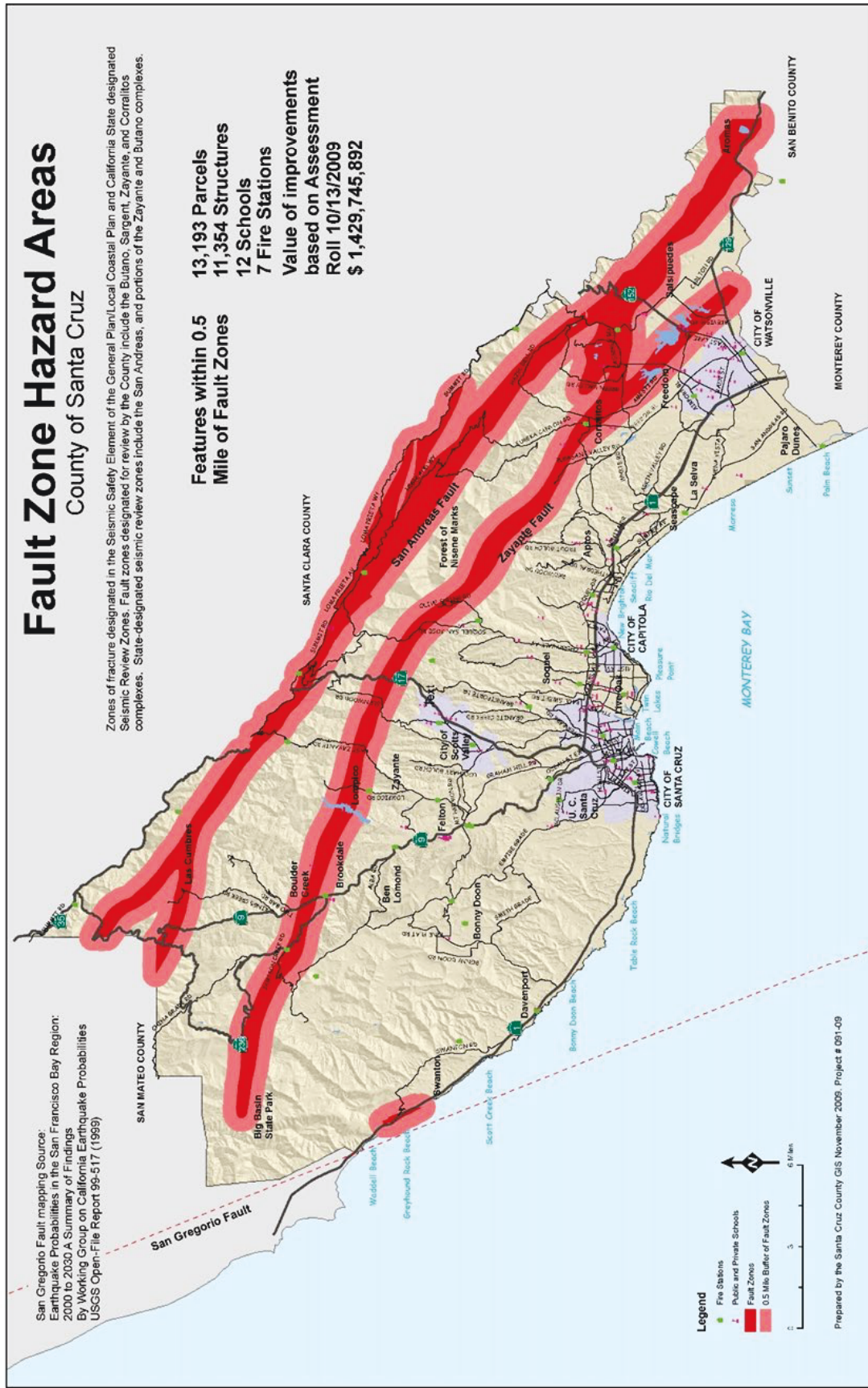
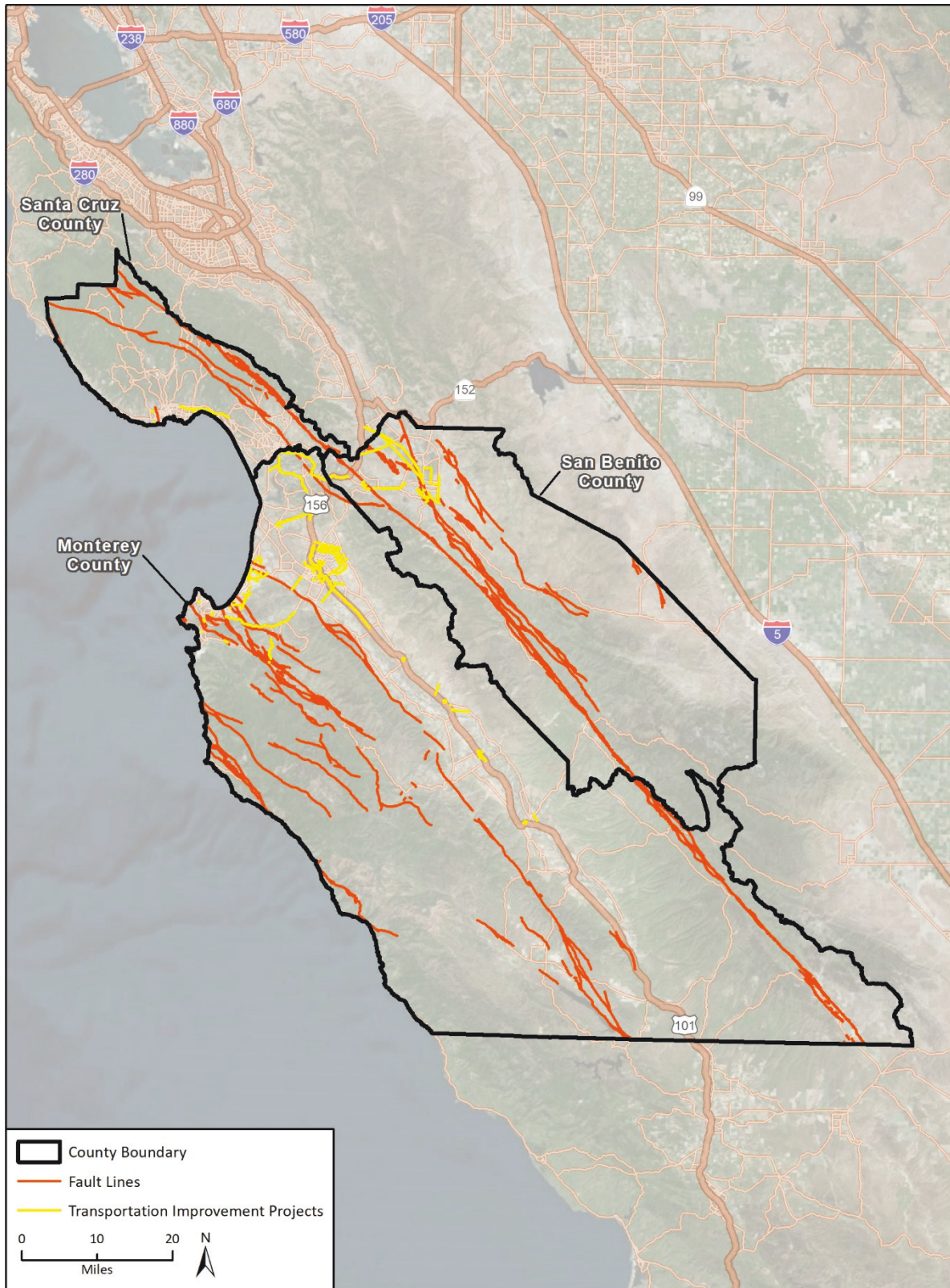


Figure 4.7-3 Santa Cruz County Fault Zones



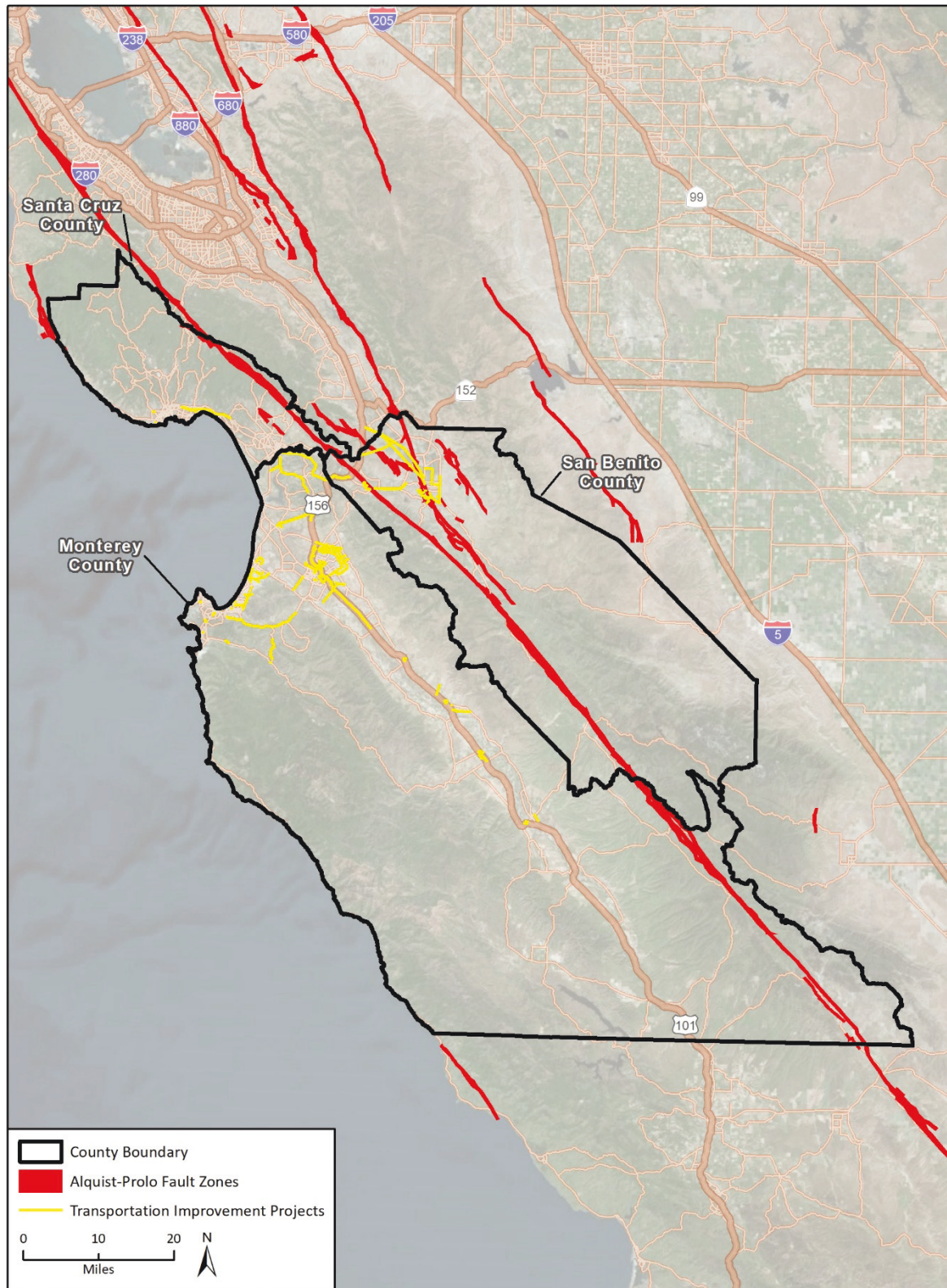
Source: Santa Cruz County GISWeb, 2012

Figure 4.7-4 MTP/SCS Transportation Projects within Fault Areas



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Cruz Counties

Figure 4.7-5 MTP/SCS Transportation Projects within Alquist Priolo Zones



occur which can cause injury to occupants or users. The highest potential for fault rupture is directly on the active faults. Monterey County also is susceptible to high levels of ground shaking due to the numerous active faults which pass through or border the county. The portions of Monterey County with the highest susceptibility to ground shaking are the lower Salinas Valley (northward from the City of Gonzales), the peninsular area from Carmel to the Santa Cruz County line and in the southeast around Parkfield.

Liquefaction and Lateral Spreading

Liquefaction, or the loss of soil bearing strength during a strong earthquake, is a potential occurrence in areas with younger soils as well as in areas where the groundwater table is less than 50 feet deep. Specifically, in areas of loose sand and silt that is saturated with water, soils can behave like liquid during earthquakes. Liquefaction can cause serious damage to foundations and bases of structures (USGS n.d.). Liquefaction in a subsurface layer can cause lateral spreading of the ground surface, which usually occurs along weak shear zones that have formed within the liquefiable soil layer. Lateral spreading has generally been observed to take place in the direction of a free face (e.g., a retaining wall or slope). In Monterey County, this condition occurs mainly along the Salinas River and floodplain, the Moss Landing and Elkhorn Slough areas, the Carmel River and floodplain, the San Antonio and Lockwood Valleys and the Peachtree and Cholame Valleys (Monterey County 2008). The severity of ground deformation due to liquefaction is dependent on the density and depth of the liquefied material. Shallower materials experience the most severe effects.

Slope Stability

Landslides and surficial slope failures are most likely to occur in areas of greater than 25 percent slope (hillside areas) and along steep bluffs. Landslides also occur due to specific events, such as loss of vegetation after fires or earthquakes adding loads to barely stable slopes. Monterey County is vulnerable to slope instability in the Santa Lucia Mountain Range and fault zones, especially after prolonged rainfall. In general, mountainous areas and steeply sloped streambanks are most susceptible to landslides or mudflows when soils are wet, particularly adjacent to areas of unstabilized cut or fill. High susceptibility to earthquake-induced landslides does not generally occur in the urbanized areas of Monterey County, including cities in the Salinas Valley or along the Monterey Peninsula (Monterey County 2008).

Expansive Soils

Soils with relatively high clay content are expansive because the clay absorbs water and swells (expands). Because the bedrock and soils contain relatively high amounts of clay, the potential for soil expansion occurs throughout the County. However, the Monterey County Multi-Jurisdictional Hazard Mitigation Plan does not identify substantial risks from expansive soils and states that no historic events related to this hazard have occurred in the County (Monterey County 2014).

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Subsidence

Subsidence is a gradual settling or sudden sinking of the Earth's surface due to removal or displacement of subsurface earth materials. Principal causes include aquifer-system compaction associated with groundwater withdrawals; drainage of organic soils; underground mining; or natural compaction or collapse, such as with sinkholes or thawing permafrost (USGS 2021). Monterey County includes areas with oil mining and groundwater extraction that can be at risk from subsidence. However, there is little evidence of widespread land subsidence from drainage of organic soils, underground mining, or hydrocompaction in Monterey County. The Carmel Valley includes soils that are comprised of Holocene deposits, which could be susceptible to subsidence resulting from groundwater extraction in the underlying aquifer (Monterey County 2015).

Mineral Resources

The primary mineral commodities currently mined in Monterey County are sand, gravel, and petroleum (County of Monterey 2007). Historic mineral production in Monterey County included sand and gravel mining for construction materials, mining for industrial materials (diatomite, clay, quartz, and dimension stone), and metallic minerals (chromite, placer gold, manganese, mercury, platinum, and silver). The predominant non-metallic minerals found in the county include sand and gravel, limestone, and dolomite, gemstones (mainly jade and jasper), asbestos, barite, clay, diatomite, feldspar, phosphate, sodium compounds, and stone. Of the non-metallic minerals, construction-grade aggregate (sand, gravel, and crushed stone) is the most abundant and commonly used mineral resource in the county (County of Monterey 2007). The only area designated as MRZ-2, an area of identified mineral resource significance, in Monterey County is in the vicinity of Marina, Sand City, and Seaside (County of Monterey 2007).

According to the Department of Conservation, Division of Mines and Geology Special Report 146, Part IV, there are eight Mineral Resources Zones Sectors in Monterey County. These sectors are identified as Sector G (Sur Series Marble and Dolomite – Natividad Deposit) located on the west flank of the Gabilan Range at the northeastern end of the Salinas Valley, about 1 mile south of Sugarloaf Peak; Sector H (Quaternary Beach and Dune Sand – Monterey Bay) located along the southeastern edge of Monterey Bay and is adjacent to Marina State Beach; Sector I (Quaternary Dune Sand – Monterey Bay Deposit) located along the southeastern shore of Monterey Bay; Sector J (Cretaceous Quartz Diorite – Huckleberry Hill Deposit) located south of Monterey and Pacific Grove and east of Pebble Beach on the Monterey Peninsula; Sector K (Holocene Stream Channel and Terrace Deposits – Carmel River) located in the Carmel River which flows due west across the southern half of the quadrangle to Carmel Bay; Sector N (Quaternary Alluvium – King City Transit Mix, Inc.) located in the stream channel and flood plain of Chalone Creek, near its confluence with the Salinas River at Metz Station on the Southern Pacific Railroad, 8 miles south of Soledad and 13 miles of King City; Sector O (Quaternary Alluvium – South County Sand and Gravel) located at the mouth of Chalone Creek west of the Metz Road, 8 miles south of Soledad and 13 miles north of King City; and Sector P (Quaternary Alluvium – Topo Aggregates) located along San Lorenzo

Creek low on the west slope of the Gabilan Range. The western part of the property is adjacent to King City – Bitterwater Road and is situated approximately 6 miles northeast of King City (DOC 1987).

b. San Benito County

Located in the eastern portion of AMBAG's planning area, San Benito County topography is dominated by the Diablo and Gabilan Mountain ranges and the valleys between these ranges.

Geologic Formations

In the north-central portion of San Benito County lie the relatively flat San Juan, Hollister and Santa Ana valleys, which are composed of alluvium. The Diablo and Gabilan Ranges are located to the east and west of these valleys, respectively. According to the San Benito County General Plan EIR (San Benito County 2015b), the Diablo and Gabilan Ranges consist of highly deformed and metamorphosed sedimentary and igneous rocks. These rock formations have been intensely deformed during the collision of the North American Plate and the Pacific Plate and have undergone low grades of metamorphism. The low grade metamorphism has resulted in the alteration of ultramafic rocks to asbestos-containing formations.

Earthquake Ground Shaking and Fault Rupture

Several well-known geologic features traverse San Benito County. The most substantial is the San Andreas Fault, which runs the length of the county stretching 60 miles from the Santa Cruz County line in the north, to the Monterey County line in the south (San Benito County 2015). Other notable faults in San Benito County include the Calaveras (principal active fault), Sargent, Paicines, Bear Valley, Zayante-Vergeles and Quien-Sabe Faults. In San Benito County, the highest ground shaking potential occurs in the north-central valley region, including the Cities of Hollister and San Juan Bautista (see Figure 4.7-2).

Liquefaction and Lateral Spreading

Although San Benito County is not subject to any recognized hazard areas for liquefaction, the risk of liquefaction and lateral spreading is considered highest near Quaternary alluvial deposits where soil saturation is close to the land surface. Specifically, in areas of loose sand and silt that is saturated with water, soils can behave like liquid during earthquakes. Liquefaction can cause serious damage to foundations and bases of structures (USGS n.d.). The potential for liquefaction and thus lateral spreading is recognized throughout the Santa Clara Valley in San Benito County and in most areas where unconsolidated sediments and a high water table coincide. Liquefaction has been reported from historical earthquakes near San Juan Bautista and Hollister (San Benito County 2015b).

Slope Stability

Slope instability occurs in areas with steep topography, as well as near Hollister, Tres Pinos, and Paicines, and along faults (see Figure 4.7-2). Landslides can occur due to specific events, such as loss of vegetation after fires or earthquakes adding loads to barely stable slopes.

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Subsidence

Areas susceptible to subsidence in San Benito County are typically composed of open textured soils that become saturated or extensive withdrawal of groundwater or oil. Subsidence as a result of ground water mining has been well documented in the Santa Clara Valley to the north. Cases of subsidence within the County have not been well documented. Subsidence in the Santa Clara Valley is mainly due to hydrocompaction from groundwater withdrawal. The valley deposits within the County are also at risk for subsidence if groundwater overdraft conditions exist (San Benito County, 2015b).

Mineral Resources

According to the Department of Conservation, Division of Mines and Geology Special Report 146, Part IV, there are two Mineral Resources Zones Sectors in San Benito County. These sectors are identified as Sector E (Holocene Stream Channel and Terrace Deposits, San Benito River and Tres Pinos Creek), located along the channel of the San Benito River from Tres Pinos to the County line in the northwest and Sector F (Cretaceous Honblende Gabbro-Aromas Deposit), located five miles from Chittenden Pass to Pajaro Gap and classified as MRZ-2 (DOC 1987) (County of San Benito 2015).

c. Santa Cruz County

Santa Cruz County is bounded to the north by San Mateo County, to the east by the crest of the Santa Cruz Mountains, to the south by the Pajaro River and to the west by the Pacific Ocean. The County is characterized by steep coastal bluffs and deep mountain canyons.

Geologic Formations

The Santa Cruz Mountains consist of predominantly marine sedimentary rocks of Paleocene to Pliocene age and non-marine sediments of Pleistocene and Holocene age, which overlay a granitic and metamorphic basement from the Cretaceous period or older (SCCRTC 2013).

Earthquake Ground Shaking and Fault Rupture

The major faults in Santa Cruz County are the San Andreas Fault, the Zayante-Vergeles Fault, San Gregorio Fault, and the Monterey Bay – Tularcitos Fault Zone. These faults are associated with Holocene activity (movement in the last 11,000 years) and are considered to be active (SCCRTC 2013) (Figure 4.7-3). Southwest of the San Andreas Fault, the older sedimentary rocks in the Coast Ranges are moderately to strongly deformed, with steep-limbed folds and several generations of faults associated with uplift of the Santa Cruz Mountains. Along the coast, the ongoing tectonic activity is most evident in the gradual uplift of the coastline, as indicated by the series of uplifted marine terraces that sculpt the coastline.

Although a map of ground shaking hazards is not available for Santa Cruz County, the County of Santa Cruz Local Hazard Mitigation Plan 2015-2020 states that, based on historical evidence, the entire County is vulnerable to ground shaking from earthquakes (Santa Cruz County 2015). The epicenter of the Loma Prieta earthquake in October 1989, which was the

most intense to strike California since 1906, was located on the San Andreas Fault, approximately 10 miles east-northeast of the City of Santa Cruz.

Liquefaction and Lateral Spreading

Liquefaction and lateral spreading potential in Santa Cruz County is high in lowland areas of the City of Santa Cruz, the Soquel Valley and the Pajaro River Valley (Santa Cruz County 2015). Specifically, in areas of loose sand and silt that is saturated with water, soils can behave like liquid during earthquakes. Liquefaction can cause serious damage to foundations and bases of structures (USGS n.d.).

Slope Stability

Areas subject to landslide hazards are widely dispersed across inland portions of Santa Cruz County (Santa Cruz County 2015a).

Expansive Soils

Expansive soils occur in southeastern Santa Cruz County and along the coast, especially in the City of Santa Cruz and in Capitola (Santa Cruz County 2015a).

Subsidence

Santa Cruz County does not have any areas that have a high susceptibility to subsidence. Estimated potential for areas within the county that are at a low susceptibility to subsidence include the coastal areas of the County as well as inland toward the middle of the County.

Mineral Resources

According to the Department of Conservation, Division of Mines and Geology Special Report 146, Part IV, there are five Mineral Resource Zones Sectors in Santa Cruz County. These sectors are identified as Sector A (Cretaceous Quartz Diorite and Metasedimentary Rocks – Ben Lomond Mountain) located on the east side of Ben Lomond Mountain; Sector B (Santa Margarita Formation Sandstone – Felton Deposits) located north and east of Felton; Sector C (Santa Margarita Formation Sandstone – Davenport Deposit), located at Davenport, west of Santa Cruz; Sector L (Cretaceous Quartz Diorite – Olive Springs Quarry) located on the east side of Sugar Loaf Mountain, between Soquel Creek and Hester Creek, at the north of Olive Springs Road; and Sector M (Quaternary Sand and Gravels – Cabrillo Pit) located in the southern portion of the Santa Cruz Mountains, approximately 1,000 feet south of Freedom Boulevard, 6.5 miles northwest of Watsonville and 2.5 miles northeast of Rob Roy Junction (DOC 1987).

d. Paleontological Resources

Paleontological resources, also known as fossils, are the remains, traces or imprints of once-living organisms preserved in rocks or sediment. Paleontological resources are commonly found in sedimentary rock units. Paleontological sites are normally discovered in cliffs,

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ledges, steep gullies, or along wave-cut terraces where vertical rock sections are exposed. Fossil material may be exposed by a trench, ditch, or channel caused by construction.

Paleontological sensitivity refers to the potential for a geologic unit to produce scientifically significant fossils. Direct impacts to paleontological resources occur when earthwork activities, such as grading or trenching, cut into the geologic deposits (formations) within which fossils are buried and physically destroy the fossils. Since fossils are the remains of prehistoric animal and plant life, they are considered to be nonrenewable. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey.

Invertebrate fossils in microscopic form such as diatoms, foraminifera and radiolarians can be so prolific as to constitute major rock material in some areas. Invertebrate fossils normally are marine in origin, widespread, abundant, fairly well preserved, and predictable as to fossil sites. Therefore, the same or similar fossils can be located at any number of sites throughout central California. Vertebrate fossil sites are usually found in non-marine or continental deposits. Vertebrate fossils of continental material are usually rare, sporadic and localized. According to the University of California Museum of Paleontology (UCMP) several vertebrate localities containing terrestrial mammals (mammoth, mastodon, horse, ground sloth, camel and rodents) have been identified from the Pleistocene non-marine continental deposits throughout the AMBAG region (UCMP 2021). Therefore, the AMBAG region contains areas of high paleontological sensitivity.

4.7.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act was enacted in 1977 to “reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program.” To accomplish this, the act established the National Earthquake Hazard Reduction Program (NEHRP). NEHRP’s mission includes improved understanding and characterization of hazards and vulnerabilities, improvement of building codes and land use practices, risk reduction through post-earthquake investigations and education, development and improvement of design and construction techniques, improvement of mitigation capacity, development of alternative performance objectives to advance functional recovery, and accelerated application of research results. The NEHRP designates the National Institute of Standards and Technology as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Programs under the NEHRP help inform and guide planning and building code requirements, such as emergency preparedness responsibilities and seismic code standards.

Disaster Recovery Reform Act of 2018

The Disaster Recovery Reform Act was signed into law in 2018. The reforms acknowledge the shared responsibility for disaster response and recovery, are intended to reduce the complexity of the Federal Emergency Management Agency (FEMA), and build the nation's capacity for the next catastrophic event. The law, which amends the Robert T. Stafford Disaster Relief and Emergency Assistance Act, contains 56 distinct provisions that require FEMA policy or regulation changes for full implementation. Examples of the provisions include expanding eligible hazard mitigation activities including the replacement of electric utility poles resilient to extreme winds (Section 1204) and earthquake early warning technology (Section 1233).

b. State Laws, Regulations, and Policies

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act, California's Alquist-Priolo Act (PRC 2621 et seq.), is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location of most types of structures intended for human occupancy across the traces of active faults and strictly regulates construction in the corridors along active faults (Earthquake Fault Zones). It also defines criteria for identifying active faults, giving legal weight to terms such as "active," and establishes a process for reviewing building proposals in and adjacent to Earthquake Fault Zones. Under the Alquist-Priolo Act, faults are zoned, and construction along or across them 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 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 (Hart and Bryant 1997).

Seismic Hazards Mapping Act of 1990

Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (PRC 2690–2699.6) is intended 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 strong ground shaking, liquefaction and seismically induced landslides. Its 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.

California Building Code

The California Building Code (CBC) has been codified in the CCR as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible

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for coordinating all building standards. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The 2019 CBC is based on the 2018 IBC published by the International Code Council. In addition, the CBC contains necessary California amendments, which are based on reference standards obtained from various technical committees and organizations, such as the American Society of Civil Engineers (ASCE), the American Institute of Steel Construction, and the American Concrete Institute. ASCE Minimum Design Standard 7-05 (ASCE 7-05) provides requirements for general structural design and includes means for determining earthquake loads, as well as other loads (e.g., flood, snow, wind), for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure, or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements consider the occupancy category of the structure, site class, soil classifications, and various seismic coefficients that are used to determine a Seismic Design Category (SDC) for a project as described in Chapter 16 of the CBC. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E (very high seismic vulnerability and near a major fault) and SDC F (hospitals, police stations, emergency control centers in areas near major active faults). Design specifications are then determined according to the SDC in accordance with Chapter 16 of the CBC. Chapter 16, Section 1613 provides earthquake loading specifications for design and construction to resist the effects of earthquake motions in accordance with ASCE 7-05.

Chapter 18 of the CBC covers the requirements of geotechnical investigations (Section 1803); excavation, grading, and fills (Section 1804); load-bearing of soils (1806); foundations (Section 1808); shallow foundations (Section 1809); and deep foundations (Section 1810). Chapter 18 also describes analysis of expansive soils and the determination of the depth to groundwater table. For SDC D, E, and F, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses mitigation measures to be considered in structural design, which may include ground stabilization, selection of appropriate foundation type and depths, selection of appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions.

Specifically, Section 1803.7 of the CBC requires geologic and earthquake engineering reports for all proposed construction. The purpose of the engineering report is to identify geologic and seismic conditions that may require mitigation. The reports, which are prepared by a

California certified engineering geologist in consultation with a California-registered geotechnical engineer, assess the nature of the site and potential for earthquake damage based on appropriate investigations of the regional and site geology, project foundation conditions, and potential seismic shaking at the site. These reports must consider the most recent CGS Note 48 (Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings), CGS Special Publication 42: Fault Rupture Hazard Zones in California (for project sites proposed within an Alquist-Priolo Zone), and the most recent version of CGS Special Publication 117: Guidelines for Evaluating and Mitigating Seismic Hazard in California (for project sites proposed within a Seismic Hazard Zone). All conclusions must be fully supported by satisfactory data and analysis.

The geotechnical report required by Section 1803 provides completed evaluations of the foundation conditions of the site and the potential geologic and seismic hazards. It includes site specific evaluations of design criteria related to the nature and extent of foundation materials, groundwater conditions, liquefaction potential, and settlement potential and slope stability, as well as the results of the analysis of problem areas identified in the engineering geologic report. The geotechnical report incorporates estimates of the characteristics of site ground motion provided in the engineering geologic report. The geotechnical report must be prepared by a geotechnical engineer registered in the State of California with the advice of the certified engineering geologist and other technical experts, as necessary. The approved engineering geologic report is submitted with, or as part of, the geotechnical report. Local jurisdictions in the AMBAG region typically regulate construction activities through a process that requires the preparation of a site specific geotechnical investigation, consistent with Title 24, Part 2, Chapter 18 of the CBC.

California Department of Transportation Regulations and Seismic Design Criteria

The California Department of Transportation (Caltrans) has Seismic Design Criteria (SDC) which contain new and currently practiced seismic design and analysis methodologies for the design of new bridges in California. The SDC adopts a performance-based approach specifying minimum levels of structural system performance, component performance, analysis and design practices for ordinary standard bridges. The SDC has been developed with input from the Caltrans Offices of Structure Design, Earthquake Engineering and Design Support and Materials and Foundations. Memo 20-1 outlines the bridge category and classification, seismic performance criteria, seismic design philosophy and approach, seismic demands and capacities on structural components and seismic design practices that collectively comprise Caltrans' seismic design methodology (Caltrans 2010).

Clean Water Act Section 402

Section 402 of the Clean Water Act authorizes the California State Water Resources Control Board (SWRCB) to issue National Pollutant Discharge Elimination System (NPDES) General Construction Storm Water Permit (Water Quality Order 99-08-DWQ, as amended), referred to as the "General Construction Permit." Construction activities can comply with and be covered under the General Construction Permit provided that the permittee:

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- Develops and implements a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving off-site into receiving waters.
- Eliminates or reduces non-stormwater discharges to storm sewer systems and other waters of the nation.
- Performs inspections of all BMPs

California Surface Mining and Reclamation Act (SMARA)

SMARA mandated the initiation by the State geologist of mineral land classification to help identify and protect mineral resources in areas within the State subject to urban expansion or other irreversible land uses that would preclude mineral extraction. Areas are classified into mineral resource zones based on the presence of deposits and how much evaluation of the resource has occurred.

SMARA also allowed the State Mining and Geology Board (SMGB), after receiving classification information from the State geologist, to designate lands containing mineral deposits of regional or Statewide significance. Areas designated by SMGB are incorporated by regulation into Title 14, Division 2 of the CCR. Such designations require that a lead agency's land use decisions involving designated areas be made in accordance with its mineral resource management policies and that the lead agency consider the importance of the mineral resource to the region or the State as a whole and not just the lead agency's jurisdiction. In 1979, SMGB adopted guidelines for the management of mineral resources and preparation of local plans. The guidelines require local general plans to reference the State-identified mineral deposits and sites that are identified by the State geologist for conservation and/or future mineral extraction. Subsequently, SMGB identified urbanized areas where irreversible land uses precluded mineral extraction.

Assembly Bill (AB) 885 – On -Site Wastewater Treatment Systems

AB 885 (Chapter 781, Statutes of 2000) required SWRCB to draft and implement regulations for siting, installation, operation, and maintenance of on-site wastewater treatment systems. Proposed regulations were issued in 2009 and adopted in June 2012.

c. Local Laws, Regulations, and Policies

Monterey County

The Safety Element of the Monterey County General Plan (Monterey County 2010a) contains goals and policies related to seismic hazards. Goal S-1 of the General Plan is to "Minimize the potential for loss of life and property resulting from geologic and seismic hazards." The policies listed under Goal S-1 would ensure that land uses contain measures to reduce loss from earthquakes (Policy S-1.1), site specific geologic studies for new development (Policy S-1.3) and require development review (Policy S-1.7) (Monterey County 2010b). Monterey County Code Chapter 16.12 is designed to eliminate and prevent conditions of accelerated

erosion. The chapter requires control of all existing and potential conditions of accelerated erosion and sets forth required provisions for project planning, preparation of erosion control plans, runoff control and land clearing. Monterey County Code Chapter 18.02 adopts the 2019 California Building Code by right. Monterey County Code Section 15.20.060 requires a permit be obtained for septic tanks within the county and sets forth requirements for septic tank construction.

Cities in Monterey County such as City of Monterey and City of Carmel-by-the-Sea include similar geology and soils and seismic hazard goals and policies in their respective general plans. Goal a of the City of Monterey's General Plan, Safety Element is to "Evaluate seismic safety when reviewing development applications and land uses" The policies listed under Goal a would ensure that land uses contain measures to reduce loss from earthquakes (Policy a.1, Policy a.2, Policy a.3, and Policy a.4), limiting development in hazard areas (Policy a.5), and reinforcing existing structures (Policy a.6). Goal b of the City of Monterey's General Plan, Safety Element is to "Minimize landslide hazards by locating development away from steep slopes and by requiring excellent grading practices." The policies listed under Goal b would ensure that development on slopes over 25 percent would be prohibited (Policy b.1), grading on hillsides is minimized (Policy b.2), limit grading operations (Policy b.2) (City of Monterey 2005).

The City of Carmel-by-the-Sea's General Plan, Environmental Safety Element provides goals and policies related to seismic hazards. Goal O8-5 is to "Prevent or reduce loss of life, injury, and property damage from geologic and seismic disasters". The policies listed under Goal O8-5 would ensure that development consider potential seismic hazards (Policy P8-22), require analysis and geotechnical investigations of structures and sites (Policy P8-23 and P8-24), and avoid placement of critical facilities and high occupancy structures in areas subject to ground failure (Policy P8-25).

San Benito County

The Health and Safety Element of the San Benito County 2035 General Plan (San Benito County 2015a) contains goals and policies related to seismic and geological hazards. Goal HS-3 is to "protect lives and property from seismic and geologic hazards." Policies listed under this goal include earthquake resistant design (Policy HS-3.1), abatement of unsafe structures (Policy HS-3.4), liquefaction studies (Policy HS-3.8) and seismic safety evaluations (Policy HS-3.9) (San Benito County 2015a). Chapter 19.17 of the San Benito County Code of Ordinances requires erosion control as part of project plans that include the proposed methods for control of runoff, erosion and sediment control. San Benito County Code Chapter 21.01 adopts the 2019 California Building Code by right. San Benito County Code Section 15.07 requires a permit be obtained for septic tanks within the county and sets forth requirements for septic tank construction.

Cities in San Benito County such as the City of Hollister include similar geology and soils and seismic hazard goals and policies in their general plan. Goal HS1 of the City of Hollister's General Plan, Health and Safety Element is to "Protect community health and safety from natural and man made hazards." Policies listed under this goal include location of future

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development (HS1.1), safety considerations in development review (HS1.2), seismic hazard design (Policy HS1.4), geotechnical and geologic review requirements (Policy HS1.5), and engineering tests for geologic conditions (Policy HS1.6) (City of Hollister 2005).

Santa Cruz County

The Health, Safety and Noise Element of the Santa Cruz County General Plan and Local Coastal Program (Santa Cruz County 2020) contains objectives and policies related to seismic hazards. Goal 6.1 is to “reduce the potential for loss of life, injury and property damage resulting from earthquakes by regulating the siting and design of development in seismic hazard areas; encouraging open space; agricultural or low density land use in the fault zones; and increasing public information and awareness of seismic hazards” (Santa Cruz County, 2020). Policies in the General Plan to implement this objective include geological review for development in designated fault zones (Policy 6.1.1), site investigation regarding liquefaction hazard (Policy 6.1.4) and location of new development away from potentially hazardous areas (Policy 6.1.5). Similar to the Monterey County Code, the Santa Cruz County Code Chapter 16.22 is designed to prevent accelerated erosion. Under Section 16.22.040 of the Santa Cruz County Code no person shall allow for the continued existence of accelerated erosion. Chapter 16.22 requires projects to have an erosion control plan, runoff control and land clearing approval. Santa Cruz County Code Chapter 12.10.215 adopts the 2019 California Building Code by right. Santa Cruz County Code Section 7.38 and 7.42 requires a permit be obtained for septic tanks within the county and sets forth requirements for septic tank construction.

Cities in Santa Cruz County such as City of Santa Cruz and City of Capitola include similar geology and soils and seismic hazard goals and policies in their respective general plans. Goal HZ6 of the City of Santa Cruz’s General Plan, Hazards, Safety, and Noise Element is to provide residents with “Protection from natural hazards.” Policies listed under this goal include reducing erosion hazards (Policy HZ6.1), discouraging development on unstable slopes (Policy HZ6.2), and reducing risk of seismic hazards (Policy HZ6.3) (City of Santa Cruz 2012).

The City of Capitola’s General Plan, Safety and Noise Element provides goals and policies related to seismic hazards. Goal SN-2 is to “Minimize the loss of life, injury, and property damage due to seismic and geologic hazards.” Policies listed under this goal include development restrictions (Policy SN-2.1), geological and seismic mitigation (Policy SN-2.2), seismic analysis (Policy SN2.3), hazard reduction from bluff erosion (Policy SN-2.4), retrofitting (Policy SN-2.5), geotechnical hazard considerations (Policy SN-2.6), and enforcing state standards (Policy SN-2.9).

4.7.3 Impact Analysis

a. Methodology and Significance Thresholds

Appendix G of the *State CEQA Guidelines* identifies the following criteria for determining whether a project’s impacts would have a significant impact related to geology and soils and mineral resources:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides;
2. Result in substantial soil erosion or the loss of topsoil;
3. 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;
4. Be located on expansive soil, creating substantial risks to life or property;
5. 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;
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature;
7. 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; and/or
8. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

b. Project Impacts and Mitigation Measures

The following section describes geology and soils impacts associated with the transportation projects and land use scenario included in the 2045 MTP/SCS. Table 4.7-1 summarizes the specific transportation projects that could result in the impacts discussed in this section. Due to the programmatic nature of the 2045 MTP/SCS, a precise, project level analysis of the specific geologic impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2045 MTP/SCS could be exposed to impacts caused by geology/soil conditions as described in the following sections.

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Threshold 1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides

Impact GEO-1 IMPLEMENTATION OF PROPOSED TRANSPORTATION IMPROVEMENTS AND FUTURE PROJECTS INCLUDED IN LAND USE SCENARIO ENVISIONED IN THE 2045 MTP/SCS WOULD NOT DIRECTLY OR INDIRECTLY CAUSE POTENTIAL SUBSTANTIAL ADVERSE EFFECTS INVOLVING RUPTURE OF A KNOWN EARTHQUAKE FAULT, GROUND SHAKING, OR SEISMIC-RELATED GROUND FAILURE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Fault rupture can occur along or immediately adjacent to faults during an earthquake. Fault rupture is characterized by ground cracks and displacement which could endanger life and property. Damage is typically limited to areas close to the moving fault.

Ground shaking effects are also the result of an earthquake, but the impacts can be widespread. Although a function of earthquake intensity, ground shaking effects can be magnified by the underlying soils and geology, which may amplify shaking at great distances. It is difficult to predict the magnitude of ground shaking following an earthquake, as shaking can vary widely within a relatively small area.

As indicated by Figure 4.7-4, transportation projects across the AMBAG region may be vulnerable to fault rupture. Roadway projects near faults in Monterey County include roadway widening at Highway 1 and Imjin Bridge as well as roadway widening of U.S. 101 within City of Salinas limits. In San Benito County, the proposed Highway 25 expressway conversion project from San Felipe Road to the County line would be near faults.

Regional trail projects, due to their length, could be affected by faults. The proposed San Benito River Recreational Trail would cross the Calaveras fault zone. In addition, the Monterey Bay Sanctuary Scenic Trail Network, which would traverse coastal Santa Cruz County, would be vulnerable to the San Gregorio Fault in its northern reach.

Whereas vulnerability to fault rupture is site specific, the entire AMBAG region – and thus, all projects under the 2045 MTP/SCS – would be vulnerable to ground shaking. Transportation projects in the urbanized areas of northern Monterey County and southern Santa Cruz County (near the epicenter of the Loma Prieta earthquake) would be particularly susceptible to ground shaking (Monterey County 2014). Bridge structures are most susceptible to earthquake ground shaking and fault rupture, although residential and commercial structures, as well as roadways, may also be damaged by either phenomenon.

Land use growth envisioned under the 2045 MTP/SCS includes a variety of land uses that could potentially be exposed to hazards as a result of surface fault rupture. The land use growth footprint envisioned under the 2045 MTP/SCS neither fully nor partially intersects Alquist-Priolo Zones as shown in Figure 4.7-5.

Seismic related ground failure such as liquefaction or landslides may result from an earthquake in the AMBAG region. Projects in the Salinas River valley in Monterey County;

greater Hollister area in San Benito County; and the Soquel Valley and Pajaro River Valley in Santa Cruz County are particularly susceptible to liquefaction. Roadway projects in mountainous areas or along steeply sloped streambanks are most susceptible to landslide or mudflows which may be triggered during an earthquake. Therefore, 2045 MTP/SCS projects such as the Union Road Construction (SB-COH-A11) may be impacted by seismic related ground failure.

Potential structural damage and the exposure of people to the risk of injury or death from structural failure would be minimized by compliance with California Building Code engineering design and construction measures. Foundations and other structural support features would be designed to resist or absorb damaging forces from strong ground shaking and liquefaction. To reduce impacts related to fault rupture, implementing agencies require project sponsors to comply with provisions of the Alquist-Priolo Act for project sites located within or across an Alquist-Priolo Zone.

Lead agencies must prepare site specific fault identification investigations conducted by licensed geotechnical professionals in accordance with the requirements of the Act, as well as any existing local policies that exceed or reasonably replace any of the Alquist-Priolo Act's requirements. Fault identification studies required by the Alquist-Priolo Act involve on-site trenching and excavation for site specific identification and location of fault rupture planes where any future rupture would be anticipated. Structures intended for human occupancy (defined in the Act as a structure that might be occupied more than 2,000 hours per year) must be located a minimum distance of 50 feet from any identified active fault traces.

All projects are required to adhere to design standards described in the CBC and all standard geotechnical investigation, design, grading, and construction practices to avoid or reduce impacts from earthquakes, ground shaking, ground failure, and landslides. These requirements would partially reduce seismic impacts. Moreover, construction within seismic zones as identified by the Alquist-Priolo Act and the Seismic Hazards Mapping Act of 1990 (PRC 2690 -2699.6) are required by the CBC to follow more stringent regulations to withstand fault ruptures and ground shaking effects from seismic activities. The CBC provides standards for various aspects of construction, including but not limited to: excavation, grading and earthwork construction; fills and embankments; expansive soils; foundation investigations; liquefaction potential; and soil strength loss. In accordance with California law, proponents of specific projects are required to comply with all provisions of the CBC for certain aspects of design and construction.

The type of transportation and land use projects proposed under 2045 MTP/SCS are unlikely to exacerbate seismic activity, fault rupture, or increases in ground shaking due to the nature of the project's effects, including construction, being near or on the ground surface. Footings and pilings that could extend below the surface would be localized to the project site and require geological testing for specific impacts. The 2045 MTP/SCS would not have the potential to exacerbate risks related to seismic activity. Compliance with the CBC and provisions of the Alquist-Priolo Act, including the preparation of a site specific geotechnical investigation, would reduce the potential for seismic damage to occur as a result of implementation of 2045 MTP/SCS projects. Impacts would be less than significant.

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Mitigation Measures

None required.

Threshold 2: Result in substantial soil erosion or the loss of topsoil

Impact GEO-2 TRANSPORTATION IMPROVEMENTS AND FUTURE PROJECTS INCLUDED IN THE LAND USE SCENARIO ENVISIONED IN THE **2045 MTP/SCS** WOULD NOT CAUSE SUBSTANTIAL SOIL EROSION OR LOSS OF TOP SOIL. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Transportation projects and future land use development under the 2045 MTP/SCS would include earthwork activities that could expose soils to the effects of erosion or loss of topsoil. Once disturbed, either through removal of vegetation, asphalt, or demolition of a structure, stockpiled soils may be exposed to the effects of wind and water. Construction of additional lanes on freeways and other transportation facilities could result in loss of topsoil if work includes grading, trenching, excavation, or soil removal of any kind in an area not previously used as a paved transportation facility. Erosion control can be accomplished on critical slopes being affected by natural agents.

Buildout under the 2045 MTP/SCS would occur in conformance with the Monterey County Code, Chapter 16.12 Erosion Control; San Benito County Code of Ordinances, Chapter 19.17 Grading, Drainage and Erosion Control; and Santa Cruz County Code, Chapter 16.22 Erosion Control, as discussed in Section 4.7.2, *Regulatory Setting*. These ordinances would require the appropriate measures to prevent erosion resulting from implementation of transportation and land use projects under the 2045 MTP/SCS, thus reducing erosion impacts.

In addition, the Construction General Permit would require a project specific SWPPP to be prepared for each project that disturbs an area one acre or larger. The SWPPPs would include project specific BMPs designed to control drainage and erosion. Project BMPs to control erosion may include, but would not be limited to: silt fencing, fiber rolls, slope stabilization and sand bags. These BMPs would be required as part of each individual project permit and would minimize impacts related to soil erosion and loss of top soil caused by construction or grading. Projects that would disturb less than one acre would be subject to the CalGreen requirements related to stormwater drainage that have been designed to prevent or reduce discharges of sediments through BMPs that include on-site retention and filtration. Generally, once construction is complete and exposed areas are revegetated or covered by buildings, asphalt, or concrete, the erosion hazard is substantially eliminated or reduced.

Adherence to the applicable ordinance codes and other local, State, and local regulatory programs, as discussed above, would ensure that project specific erosion and topsoil loss would be minimized. Because such effects would not be substantial, impacts related to erosion and loss of topsoil would be less than significant.

Mitigation Measures

None required.

Threshold 3: 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

Threshold 4: Be located on expansive soil, creating substantial risks to life or property

Impact GEO-3 IMPLEMENTATION OF PROPOSED TRANSPORTATION IMPROVEMENTS AND FUTURE PROJECTS INCLUDED IN THE LAND USE SCENARIO ENVISIONED IN THE 2045 MTP/SCS WOULD BE LOCATED ON POTENTIALLY UNSTABLE SOILS, IN AREAS OF LATERAL SPREADING, SUBSIDENCE, OR HIGH LIQUEFACTION POTENTIAL, OR AREAS OF EXPANSIVE SOIL. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2045 MTP/SCS could be prone to slope instability, liquefaction, and other soil-related hazards. Representative transportation projects that could be subject to these hazards are listed in Table 4.7-1.

As discussed above, Monterey County is vulnerable to slope instability in the Santa Lucia Mountain Range and fault zones; San Benito County is vulnerable to slope instability near Hollister, Tres Pinos, and Paicines; and Santa Cruz County is vulnerable to slope instability across inland portions of Santa Cruz. Erosion problems are generally limited to restricted areas where grading has over-steepened slopes, has deposited fill in unstable areas, or where improper grading practices have not included provisions to seed or otherwise protect fresh slopes from eroding. Due to areas susceptible to slope instability in the AMBAG region, erosion will continue to reduce slopes to lower and lower elevations. However, this normal function is incremental and slow enough so as to be imperceptible. This can change if the erosion functions are accelerated by events, predominantly human activities related to development and grading. Roadway projects in mountainous areas or along steeply sloped streambanks are most susceptible to landslide or mudflows, especially when soils are wet and in areas adjacent to unstabilized cut or fill. Few transportation projects proposed under the 2045 MTP/SCS are located in such areas. However, projects involving cut slopes of over 20 feet in height or projects located in areas of bedded or jointed bedrock are more likely to result in a landslide.

New land use development and transportation projects constructed on expansive soils could be subject to damage or could become unstable when the underlying soil shrinks or swells. Soils with high clay content have the highest potential for shrink-swell. Potential impacts related to expansive soils may occur in coastal areas of southern Santa Cruz County and in the Pajaro River valley. Transportation improvement projects in the 2045 MTP/SCS which may be affected include the Pajaro River Bike Path System. However, expansive soils can be remediated, or structures and foundations can be engineered to withstand the forces of expansive soil.

Ground failure, including liquefaction, lateral spreading, and subsidence, caused by an earthquake could occur in the AMBAG region depending on the underlying conditions including ground water level, relative size of soil particles, and density of subsurface materials within 50 feet of ground surface. Damage from earthquake-induced ground failure associated with liquefaction, lateral spreading, and subsidence could be high in buildings with

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foundations not properly constructed for such hazards. Areas that are exposed to liquefaction hazard may also have lateral spreading or differential settlement and subsidence concerns. Areas not at risk of liquefaction do not have lateral spreading potential. As noted above, ground failure associated with liquefaction would result in damage to transportation projects if not engineered appropriately.

Transportation improvements and new development constructed under the 2045 MTP/SCS may be vulnerable to subsidence in areas with saturation. Within the AMBAG region, these areas include the Carmel Valley and Salinas Valley in Monterey County and valley areas under conditions of overdraft in San Benito County. Santa Cruz County has low potential for subsidence. Where it can occur, subsidence may result in unstable soils and affect the stability of structures constructed by the 2045 MTP/SCS. Therefore, projects under the 2045 MTP/SCS may be located on unstable soils with potential for subsidence.

Transportation improvements and development projects in the 2045 MTP/SCS may be vulnerable to liquefaction and lateral spreading in areas with younger soils and with high groundwater tables. In the AMBAG region, these areas include the Salinas River Valley in Monterey County; greater Hollister area in San Benito County; and the City of Santa Cruz, the Soquel Valley, and the Pajaro River Valley in Santa Cruz County. Liquefaction and resulting lateral spreading may result in the loss of the soils ability to support structures constructed by the 2045 MTP/SCS in any of these areas.

The preparation of site specific geotechnical studies prepared in accordance with requirements as set forth by the CBC, the Seismic Hazards Mapping Act, and standard industry practices would reduce impacts related to slope instability, liquefaction, soil expansion, and ground failure. Future projects under the 2045 MTP/SCS would also be required to comply with local general plans and local building code requirements that contain seismic safety policies to resist ground failure through construction techniques, including structural design. Potential structural damage and the exposure of people to the risk of injury or death from structural failure would be minimized by compliance with California Building Code engineering design and construction measures. Foundations and other structural support features would be designed to resist or absorb damaging forces from expansive soils, liquefaction, or landslides. Land use and transportation projects included in the 2045 MTP/SCS would be required to comply with the CBC, and local building standards including the implementation of geotechnical practices such as ground treatments or replacing existing soils with engineered fill. Transportation projects that would involve the construction or improvements of bridge or overpass design would also be required to comply with Caltrans seismic design criteria which would reduce potential ground failure hazards. The 2045 MTP/SCS would not have the potential to exacerbate risks related to ground failure.

Therefore, impacts related to ground failure hazards, including liquefaction, lateral spreading, and subsidence would be less than significant with compliance with the CBC, local general plans and building standards, Caltrans design criteria for transportation projects, where applicable.

Mitigation Measures

None required.

Threshold 5: 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

Impact GEO-4 IMPLEMENTATION OF PROPOSED TRANSPORTATION IMPROVEMENTS AND FUTURE PROJECTS INCLUDED IN THE LAND USE SCENARIO ENVISIONED IN THE 2045 MTP/SCS IN RURAL AREAS MAY HAVE SOILS INCAPABLE OF ADEQUATELY SUPPORTING SEPTIC TANKS OR ALTERNATIVE WASTEWATER DISPOSAL SYSTEMS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The 2045 MTP/SCS does not include transportation projects that would require the use of septic tanks or alternative wastewater disposal systems. The expansion and/or improvement of streets, highways, transit facilities, airports and related transportation infrastructure would not include elements that would require wastewater treatment or otherwise necessitate the development of septic systems.

Most future land use development projects implementing the 2045 MTP/SCS land use would connect to centralized wastewater infrastructure; the few development projects in rural areas requiring septic tanks or alternative wastewater disposal systems would be required to comply with local regulatory requirements that assure soils would adequately support these systems. Septic and alternative wastewater disposal systems would be required to comply with AB 885 and applicable County or City regulations. Septic systems in Monterey County would be required to comply with code requirements as set forth by Title 15 of the County Municipal Code; in San Benito County would be required to comply with Municipal Code Section 15.07; and in Santa Cruz County would be required to comply with Municipal Code Chapters 7.38 and 7.42. Cities within each County would further require compliance with municipal code requirements as set forth by individual jurisdictions. Therefore, impacts related to having soils incapable of adequately supporting the use of septic tanks and alternative wastewater disposal systems would be less than significant.

Mitigation Measures

None required.

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Threshold 6: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

Impact GEO-5 IMPLEMENTATION OF PROPOSED TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE **2045 MTP/SCS** WOULD DIRECTLY OR INDIRECTLY DESTROY A UNIQUE PALEONTOLOGICAL RESOURCE OR SITE OR UNIQUE GEOLOGICAL FEATURE. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Paleontological resources are present throughout the AMBAG region. Therefore, it is possible to encounter known and unknown paleontological resources during construction of transportation improvement projects pursuant to the 2045 MTP/SCS. Paleontological resources are by nature specific to their local context, and as such, impacts on these resources would occur at the local level. Projects involving excavation, grading, or soil removal in previously undisturbed areas have the greatest likelihood to encounter these resources.

The *State CEQA Guidelines* provide no definition to the term “unique geologic feature.” This phrase also has no common definition. However, a geologic unit could be considered unique if it is a stratotype, contributes to scientific research, or is exclusive to the region.

Many of the transportation improvements envisioned under the 2045 MTP/SCS consist of minor expansions of existing facilities that would not involve construction in previously undisturbed areas. However, depending on the location and extent of the improvement and ground disturbance, paleontological resources or unique geologic features could be impacted. Representative projects that may impact previously undisturbed areas are listed in Section 4.5, *Cultural Resources*, Table 4.5-4. The projects listed were identified based on the likelihood that development of new infrastructure would impact previously undisturbed areas; it should be noted, however, that any project overlying a geologic unit with high paleontological sensitivity would result in impacts, regardless of location relative to existing development. It is also possible that construction activities associated with some of the proposed roadway or bridge widening or extension projects in addition to those listed in Table 4.5-4 could adversely impact paleontological resources by exposing them to potential vandalism or causing displacement from the original context and integrity. Project specific analysis would be required as individual projects are proposed.

In addition, the 2045 MTP/SCS also contains a future land use scenario that emphasizes infill near transit and within existing urbanized areas. However, it is possible that paleontological resources could be located on or near future site infill sites, as well as undisturbed sites that are developed. Project grading and excavation for development sites may disturb these undiscovered resources. Compliance with and implementation of assessment requirements set forth by the Paleontological Resources Preservation Act, the Federal Land Policy and Management Act, the Antiquities Act, Section 5097.5 of the PRC, adopted county and city general plans would reduce impacts to paleontological resources and unique geologic features. However, projects envisioned under the 2045 MTP/SCS would still have the

potential to affect paleontological resources and unique geologic features on a regional and localized level, and impacts would be potentially significant.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall, and transportation project sponsor agencies can and should, implement the following mitigation developed for the 2045 MTP/SCS program where applicable for transportation projects that result in impacts to paleontological resources, and where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region can and should implement this mitigation measure where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

GEO-5 Paleontological and Geologic Resources Impact Minimization

The implementing agency of a 2045 MTP/SCS project involving ground disturbing activities (including grading, trenching, foundation work and other excavations) shall, or can and should, retain a qualified paleontologist, defined as a paleontologist who meets the Society of Vertebrate Paleontology (SVP) standards for Qualified Professional Paleontologist (SVP 2010), to conduct a Paleontological Resources Assessment (PRA). The PRA shall determine the age and paleontological sensitivity of geologic formations underlying the proposed disturbance area, consistent with SVP Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (SVP 2010) guidelines for categorizing paleontological sensitivity of geologic units within a project area. If underlying formations are found to have a high potential (sensitivity) for paleontological resources and/or could be considered a unique geologic feature, the following measures shall apply:

- **Avoidance.** Avoid routes and project designs that would permanently alter unique paleontological and geological features. If avoidance practices cannot be implemented, the following measures shall apply.
- **Paleontological Mitigation and Monitoring Program.** A qualified paleontologist shall prepare a Paleontological Mitigation and Monitoring Program to be implemented during ground disturbance activity. This program shall outline the procedures for construction staff training, paleontological monitoring extent and duration (i.e., in what locations and at what depths paleontological monitoring shall be required), salvage and preparation of fossils, the final mitigation and monitoring report and paleontological staff qualifications.
- **Paleontological Worker Environmental Awareness Program (WEAP).** Prior to the start of ground disturbance activity, construction personnel shall be informed on the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff.
- **Paleontological Monitoring.** Ground disturbing activity with the potential to disturbed geologic units with high paleontological sensitivity shall be monitored on a full-time basis by a qualified paleontological monitor. Should no fossils be observed during the first 50 percent of such excavations, paleontological monitoring could be reduced to weekly spot-

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checking under the discretion of the qualified paleontologist. Monitoring shall be conducted by a qualified paleontological monitor, who is defined as an individual who has experience with collection and salvage of paleontological resources.

- **Salvage of Fossils.** If fossils are discovered, the implementing agency shall be notified immediately, and the qualified paleontologist (or paleontological monitor) shall recover them. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case, the paleontologist should have the authority to temporarily direct, divert or halt construction activity to ensure that the fossil(s) can be removed in a safe and timely manner.
- **Preparation and Curation of Recovered Fossils.** Once salvaged, fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection, along with all pertinent field notes, photos, data and maps.
- **Final Paleontological Mitigation and Monitoring Report.** Upon completion of ground disturbing activity (and curation of fossils if necessary) the qualified paleontologist shall prepare a final mitigation and monitoring report outlining the results of the mitigation and monitoring program. The report shall include discussion of the location, duration and methods of the monitoring, stratigraphic sections, any recovered fossils, and the scientific significance of those fossils, and where fossils were curated.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

Significance After Mitigation

Implementation of the above mitigation measure would reduce impacts to paleontological resources and unique geologic features by requiring a PRA and mitigation measures for any projects under the 2045 MTP/SCS that may impact such resources. While implementation of Mitigation Measure GEO-4 would reduce impacts to the extent feasible, some project specific impacts may be unavoidable. Therefore, this impact is significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 7: 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

Threshold 8: Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan

Impact GEO-6 IMPLEMENTATION OF PROPOSED TRANSPORTATION IMPROVEMENTS AND FUTURE PROJECTS INCLUDED IN THE LAND USE SCENARIO ENVISIONED IN THE 2045 MTP/SCS WOULD NOT RESULT IN THE LOSS OF AVAILABILITY OF KNOWN MINERAL RESOURCES OF VALUE OR LOCALLY-IMPORTANT MINERAL RESOURCE RECOVERY SITES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The 2045 MTP/SCS primarily involves modifications to existing roadways, including improvements related to intersections, safety and widening, as well as alternative transportation projects. In addition, most future land use development would be infill and TOD and would be located within existing urbanized areas. Infill and TOD projects would not be located on sites with known mineral resources or locally important mineral resources. For projects not considered to be infill or TOD, local jurisdictions have policies to manage mineral resources through general plans and are required to respond to mineral resource recovery areas that have been designated MRZ-2 locations under SMARA. The MRZ-2 designation is an area where significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists. Land use development would avoid known mineral resources that would be of value to the region and residents of the State of California, to the extent feasible. Any projects located within MRZ-2 areas would be identified and impacts would be required to be mitigated during the environmental review for project specific impacts pertaining to mineral resources.

The Monterey County General Plan Conservation and Open Space Policy OS-2.1 states that the County shall protect on-site and off-site land uses that would be incompatible with mineral extraction activities (Monterey County 2010a). In San Benito County, Goal NCR-5 of the San Benito County 2035 General Plan (San Benito County 2015a) intends to protect and support mineral resource extraction while avoiding land use conflicts and environmental impacts from current and historical mining activities. Policies and programs in the Conservation and Open Space Element of the Santa Cruz County General Plan and Local Coastal Program (Santa Cruz County 1994) would ensure that conflicts are minimized between new development and mineral resource areas (Policy 5.16.4). In the City of Marina, policy 4.124 and its associated programs are intended to conserve soil and mineral resources. In the City of Hollister, General Plan policy NRC 3.1 is intended to conserve mineral resources. In the City of Santa Cruz, policy NRC 3.4 is intended to preserve mineral resources in the area. The City of Watsonville General Plan Goal 9.9 provides for protection and conservation of mineral resources in the area.

There are no transportation projects included in the 2045 MTP/SCS that would directly result in the extraction, exploration, or digging for mineral resources, or prevent such activities, and therefore would not result in the loss of availability of minerals. Impacts pertaining to mineral resources would be less than significant.

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Mitigation Measures

None required.

c. Specific 2045 MTP/SCS Projects that May Result in Impacts

Table 4.7-1 identifies transportation projects that may result in geology and soils-related impacts as discussed above. Given the large number of projects envisioned across the AMBAG region in the 2045 MTP/SCS, the table shows a representative rather than comprehensive list of projects that would generate these impacts. Listed projects are representative of the types of geologic impacts and the types of transportation projects that could be affected in different localities.

The individual projects listed could result in significant geologic impacts but would not necessarily do so. Additional site specific analysis would need to be conducted as the individual projects are implemented to determine the project specific magnitude of impact. Mitigation measures discussed above would apply to these specific projects as well as any other 2045 MTP/SCS projects that would result geology and soils-related impact.

Table 4.7-1 2045 MTP/SCS Projects that May Result in Geologic Impacts

AMBAG Project No.	Projects	County	Impact
MON-CT011-CT	SR 68 Commuter Improvements	Monterey	GEO-1
MON-CT030-SL	U.S. 101 Salinas Corridor	Monterey	GEO-1
MON-CT023-CT	SR 156 and U.S. 101 Interchange	Monterey	GEO-1
SB-CT-A44	SR 25 Expressway Conversion Project, Phase 1	San Benito	GEO-1
SB-CT-A45	SR 25 Expressway Conversion Project, Phase 2	San Benito	GEO-1
SB-COH-A11	Union Road Construction	San Benito	GEO-1
SC-CO-P38-USC	Pajaro River Bike Path System	Santa Cruz	GEO-3

4.8 Greenhouse Gas Emissions/Climate Change

This section discusses potential impacts related to greenhouse gas emissions and climate change. Air quality impacts are discussed in Section 4.2, *Air Quality and Health Impacts/Risks*.

4.8.1 Setting

a. Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. The term "climate change" is often used interchangeably with the term "global warming," but "climate change" is preferred to "global warming" because it helps convey other changes in addition to rising temperatures. The baseline against which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate changes continuously, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed substantial acceleration in the rate of warming during the past 150 years (Intergovernmental Panel on Climate Change [IPCC] 2021). The understanding of anthropogenic warming and cooling influences on climate has led to an unequivocal understanding that the human activities have been the dominant cause of warming since the mid-nineteenth century (IPCC 2021).

Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHGs). The GHGs that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO₂), methane (CH₄), nitrous oxides (N₂O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs) and sulfur hexafluoride (SF₆). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are primarily determined by natural processes, such as oceanic evaporation.

GHGs are emitted by both natural processes and human activities. Of these gases, CO₂, CH₄ and N₂O are emitted in the greatest quantities from human activities. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas CH₄ results from off-gassing associated with agricultural practices and landfills. N₂O is produced by microbial processes in soil and water, including those reactions that occur in fertilizers that contain nitrogen, fossil fuel combustion and other chemical processes. Man-made GHGs, many of which have greater heat-absorption potential than CO₂, include fluorinated gases and SF₆.

Different types of GHGs have varying global warming potentials (GWPs). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference

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gas (CO₂) is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as “carbon dioxide equivalent” (CO₂e) and is the amount of a GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 28, meaning its warming effect is 28 times greater than carbon dioxide on a molecule-per-molecule basis (IPCC 2014). N₂O has a GWP of 265 (IPCC 2014).

Greenhouse Gas Emissions Inventories

California Emissions Inventory

Based on the California Air Resources Board (CARB) California GHG Inventory for 2000-2019, California produced 418.2 MMT CO₂e in 2019 (CARB 2021a). The largest single source of GHG in California is transportation, contributing 39.7 percent of the State’s total GHG emissions. In the transportation sector, passenger vehicles are the main contributor with 28.5 percent of emissions generated by these vehicles. Heavy-duty vehicles account for approximately 7.8 percent and the remaining three percent are from other sources of transportation (e.g., aviation, ships, and rail). Industrial sources are the second-largest source of the state’s GHG emissions, contributing 21.1 percent of the State’s GHG emissions (CARB 2021a). Emissions from this sector are primarily produced from refineries, oil and gas extraction, cement plants, and general fuel use. The electric power sector contributed 14.1 percent of the total with emissions from in-state power generation and imported electricity being the primary sources. Residential and commercial fuel combustion (e.g., natural gas and other fuels for space heating, cooking, and hot water or steam generation) account for 10.5 percent of the total. The agriculture sector contributes 7.6 percent of the total with the major emissions sources being enteric fermentation and manure management from livestock, crop production, and fuel combustion for agriculture activities. The remaining seven percent is due high GWP gases (4.9 percent) and waste (2.1 percent). High GWP gases include ozone depleting substance substitutes, SF₆ emissions from electricity transmission and distribution, and gases emitted by the semiconductor manufacturing process. Lastly, recycling and waste sector sources are landfills and from commercial-scale composting.

AMBAG Region Baseline Emissions Inventory

Baseline GHG emissions from land uses were forecasted in the 2045 Metropolitan Transportation Plan/Sustainable Communities Strategy for Monterey, San Benito, and Santa Cruz Counties Greenhouse Gas Emissions Forecast by Rincon Consultants (October 2021). The aggregated on-road mobile GHG emissions were calculated using emission factors from CARB’s Emission FACtor (EMFAC) 2017 model and regional VMT from AMBAG’s updated Regional Travel Demand Model (RTDM) (refer to Appendix E).

The 2019/2020 GHG Emissions Inventory Summary included the following GHG emission sources for the AMBAG region:

- On-road mobile emissions
- Off-road vehicle and equipment use
- Aviation

- Residential energy consumption
- Commercial/Industrial energy consumption
- Solid waste landfilling and generation
- Wastewater generation
- Agriculture

A detailed summary of the GHG emissions for the baseline 2019/2020 year is provided in Table 4.8-1.

Table 4.8-1 AMBAG Regional 2019/2020 GHG Emissions Detailed Summary (MT CO₂e)

GHG Emissions Sector/Source	CO ₂ (MT)	CH ₄ (MT)	N ₂ O (MT)	CO ₂ e (MT)	Activity Data	Activity Data Units
Transportation						
On-Road Transportation ¹	2,482,892	176	171	2,533,207	17,331,954	VMT
Aviation Gasoline Fuel Sales	2,669	0	0	2,679	321,231	Gallons
JET-A Fuel Sales	8,158	0	0	8,185	836,689	Gallons
Monterey Regional Airport	–	–	–	41,282	41,282	NA ²
Off-road Natural Gas	9,597	–	–	9,597	1,461,595	Gallons
Off-road Diesel	185,994	–	–	185,994	18,216,792	Gallons
Off-road Gasoline	94,899	5	2	94,899	10,720,237	Gallons
Residential						
Electricity - 3CE	5,982	20	13	10,043	1,320,068,190	kWh
Electricity - PG&E	62	1	0	109	51,410,638	kWh
Electricity - KCCP	2,733	0	0	2,744	12,135,267	kWh
Natural Gas	418,309	39	1	419,622	78,896,397	therms
Commercial/Industrial						
Electricity - PG&E	9,507	32	21	15,961	2,097,951,750	kWh
Electricity - 3CE	619	8	1	1,084	509,341,666	kWh
Electricity - KCCP	5,983	0	0	6,008	26,566,071	kWh
Natural Gas	491,158	46	1	492,701	92,636,407	therms
Wastewater						
Fugitive Emissions from Septic Systems	5,983	0	1	6,268	336	Population
Process N ₂ O from Wastewater Treatment	336,309	58	20	343,120	3	Population
Process N ₂ O from Effluent Discharge	–	–	0	59	54	Population

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GHG Emissions Sector/Source	CO ₂ (MT)	CH ₄ (MT)	N ₂ O (MT)	CO ₂ e (MT)	Activity Data	Activity Data Units
Solid Waste						
Monterey Peninsula Landfill	–	–	2	421	390,189	Tons of waste
Johnson Canyon Sanitary Landfill	–	–	31	8,110	959	Tons of waste
John Smith Landfill	–	–	–	–	226,045	Tons of waste
Buena Vista Landfill	–	2,128	–	59,576	77	Tons of waste
Community Generated Solid Waste	–	2,032	–	56,908	868,851	Tons of waste
Agricultural						
Enteric Fermentation	–	9,217	–	258,071	NA ³	Heads of Livestock
Manure Management	–	192	176	51,973	NA ³	Heads of Livestock
Nitrogen Fertilizer Application	–	–	547	145,054	NA ³	Acreage of Crops

Notes: Values in this table may not add up to totals due to rounding.

NA = not applicable; CO₂ = carbon dioxide; CH₄ = methane; N₂O = nitrous oxide; CO₂e = carbon dioxide equivalent; PG&E = Pacific Gas and Electric; 3CE = Central Coast Community Energy; KCCP = King City Community Power; kWh = kilowatt-hour

¹ The on-road transportation emissions account for all gasoline and diesel vehicle types (e.g., passenger vehicles, medium-duty trucks, heavy-duty trucks, buses, motorhomes, and motorcycles) traveling within the AMBAG region.

² Activity data for Monterey Regional Airport was not provided.

³ Agricultural GHG emissions use a breakdown of livestock and crop types in the county, resulting in numerous activity data values.

See Appendix E for the on-road transportation CO₂ GHG emissions and for the 2045 MTP/SCS GHG Emissions Forecast letter. Please refer to Appendix F of the 2045 MTP/SCS for the modeling methodology for VMT.

b. Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. Long-term trends have found that each of the past four decades has been warmer than all the previous decades in the instrumental record and the decade from 2011 through 2020 has been the warmest. The observed global mean surface temperature (GMST) for the decade from 2011 to 2020 was approximately 1.09°C (0.95°C to 1.20°C) higher than the average GMST over the period from 1850 to 1900. Due to past and current activities, anthropogenic GHG emissions are increasing global mean surface temperature at a rate of 0.2°C per decade. In addition to these findings, the latest IPCC report states that “Human-induced climate change is already affecting many weather and climate extremes in every region across the globe” (IPCC 2021). These climate change impacts include climate change

sea level rise, increased weather extremes, and substantial ice loss in the Arctic over the past three decades.

According to *California's Fourth Climate Change Assessment*, statewide temperatures from 1986 to 2016 were approximately 1°F to 2°F higher than those recorded from 1901 to 1960. Potential impacts of climate change in California may include loss in water supply from snowpack, sea level rise, more extreme heat days per year, more large forest fires, and more drought years (State of California 2018). While there is growing scientific consensus about the possible effects of climate change at a global and statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy. In addition to statewide projections, *California's Fourth Climate Change Assessment* includes regional reports that summarize climate impacts and adaptation solutions for nine regions of the state as well as regionally-specific climate change case studies (State of California 2018). Below is a summary of some of the potential effects that could be experienced in California and the Central Coast region as a result of climate change.

Public Health

Climate changes expected to cause a number of impacts which could negatively affect public health in the AMBAG region. As temperatures increase the Central Coast is set to experience an increased number of extreme heat days which may lead to increases in the number of heat-related deaths and illnesses (State of California 2018). An increase in the frequency and severity of wildfires may contribute to worsening air quality and cause additional illnesses such as asthma. Higher temperatures could also lead to increased air pollution formation and potentially accelerate the spread of certain diseases and pests. These adverse impacts may also disproportionately burden vulnerable populations.

Water Supply

Analysis of paleoclimatic data, such as tree-ring reconstructions of stream flow and precipitation, indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future precipitation trends and water supplies in California. This uncertainty regarding future precipitation trends complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. However, the average early spring snowpack in the Sierra Nevada decreased by about 10 percent during the last century, a loss of 1.5 million acre-feet of snowpack storage. During the same period, sea level rose over 5.9 inches along the central and southern California coast (State of California 2018). The Sierra snowpack provides the majority of California's water supply by accumulating snow during the state's wet winters and releasing it slowly during the state's dry springs and summers. A warmer climate is predicted to reduce the fraction of precipitation falling as snow and result in less snowfall at lower elevations, thereby reducing the total snowpack (DWR 2008; State of California 2018). The State of California projects that average spring snowpack in the Sierra Nevada and other mountain catchments in central and northern California will decline by approximately 66 percent from its historical average by

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2050 (State of California 2018). As described in Section 4.10, *Hydrology and Water Quality*, the primary source of water for most users in the AMBAG region is groundwater. Climate change may reduce groundwater recharge, putting further strain on an already limited water supply in the region.

Hydrology and Sea Level Rise

Climate change could potentially affect the amount of snowfall, rainfall, and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for saltwater intrusion. According to *Rising Seas in California: An Update on Sea-Level Rise Science* (Griggs, et al. 2017), climate change has the potential to induce substantial sea level rise in the coming century. The rising sea level increases the likelihood and risk of flooding. The rate of increase of global mean sea levels from 2006 to 2018, as observed by satellites, ocean buoys and land gauges, was approximately 3.7 mm per year, which is almost the observed 1971-2006 trend of 1.9 mm per year (IPCC 2021). Global mean sea levels have increase about eight inches from 1901 to 2018 (IPCC 2021). Sea levels are rising faster now than in the previous two millennia, and the rise is expected to accelerate, even with robust GHG emission control measures the latest IPCC reports predict a mean sea level rise of 11 to 21.5 inches by 2100 under the lowest emissions scenario and a rise of 25 to 40 inches by 2100 under the very high emissions scenario (IPCC 2021).

A rise in sea levels could completely erode 31 to 67 percent of southern California beaches, result in flooding of approximately 370 miles of coastal highways during 100-year storm events, jeopardize California's water supply due to saltwater intrusion, and induce groundwater flooding and/or exposure of buried infrastructure (State of California 2018). In addition, increased CO₂ emissions can cause oceans to acidify due to the carbonic acid it forms. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Ocean Acidification

The ocean covers over 70 percent of the earth's surface and acts as a major carbon sink in the global carbon cycle. As the concentration of CO₂ in the atmosphere increases, so does the concentration of carbon in the ocean. The reaction of dissolved CO₂ with seawater results in the creation of carbonic acid (H₂CO₃), carbonate, bicarbonate and hydrogen ions, which lowers pH causing higher seawater acidity. Higher acidity in seawater affects many aquatic animals' ability to fix calcium for body structure, which could have significant negative effects across the entire food chain. The effects of ocean acidification may impact the success of California's \$318 million per year fishing industry and \$17 billion per year tourism/recreation industry (National Ocean Economics Program [NOEP], Center for the Blue Economy, Market database, www.oceaneconomics.org, 2014). Ocean acidification in the Monterey Bay National Marine Sanctuary would impact key species such as kelp, which provide important structural features and ecosystem function (NOAA 2017).

Agriculture

California has a \$50 billion annual agricultural industry that produces over a third of the country's vegetables and two-thirds of the country's fruits and nuts (California Department of Food and Agriculture 2018). If temperatures continue to rise and drier conditions prevail, certain regions of agricultural production could experience water shortages of up to 16 percent; water demand could increase as hotter conditions lead to the loss of soil moisture; crop-yield could be threatened by water-induced stress and extreme heat waves; and plants may be susceptible to new and changing pest and disease outbreaks (State of California 2018). In addition, temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen and thereby affect their quality (California Climate Change Center [CCCC] 2006). Finally, extreme heat days could impact the health of farmworkers and impact the abilities to harvest crops. As described in Section 4.2, *Agriculture and Forestry*, AMBAG's planning area includes expansive agricultural lands. Agriculture may face challenges due to extreme heat and water stress associated with climate change.

Ecosystems and Wildlife

Climate change and the resulting changes in weather patterns will have ecological effects on a global and local scale. Increasing concentrations of GHGs will accelerate the rate of climate change. Scientists project that the annual average global surface temperature could rise by 4.4 to 5.8°F in the next 40 years, and 5.6 to 8.8°F in the next 80 years (State of California 2018).

Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals related to (1) timing of ecological events; (2) geographic distribution and range; (3) species' composition and the incidence of nonnative species within communities; and (4) ecosystem processes, such as carbon cycling and storage (Parmesan 2006; State of California 2018). Many of the impacts identified above would impact ecosystems and wildlife in the Central Coast region. Increases in wildfire would further remove sensitive habitat; increased severity in droughts would potentially starve plants and animals of water; and sea level rise will affect sensitive coastal ecosystems.

4.8.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

The U.S. Supreme Court in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) held that the U.S. EPA has the authority to regulate motor-vehicle GHG emissions under the federal Clean Air Act. U.S. EPA began regulating GHGs under the Clean Air Act in 2011 following its endangerment finding. U.S. EPA's GHG regulations include regulations governing transportation and mobile sources, renewable fuels, carbon pollution standards for existing power plants, the GHG tailoring rule governing new and existing industrial facilities, and GHG reporting requirements. Standards for mobile sources have been

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established pursuant to Section 202 of the CAA, and GHGs from stationary sources are currently controlled under the authority of Part C of Title I of the Act.

The U.S. EPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009 (U.S. EPA 2009). This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters and manufacturers of heavy-duty and off-road vehicles and vehicle engines and requires annual reporting of emissions. In 2012, the U.S. EPA issued a Final Rule that establishes the GHG permitting thresholds that determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities.

Corporate Average Fuel Economy Standards

The Energy Policy and Conservation Act in 1975 established the Corporate Average Fuel Economy Standards (CAFE standards). The CAFE standards are Federal rules established by the National Highway Traffic Safety Administration (NHTSA) that set fuel economy standards for all new passenger cars and light trucks sold in the United States. The CAFE standards become more stringent each year, reaching an estimated 38.3 miles per gallon for the combined industry-wide fleet for model year 2020 (77 Federal Register 62624 et seq. [October 15, 2012 Table I-1]).

In September 2019, U.S. EPA and the National Highway Traffic Safety Administration issued the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program, which revoked California's authority to set its own GHG emissions standards and zero-emission vehicle mandates in California (84 Federal Register 51310). In April 2020, the federal agencies issued the SAFE Vehicles Rule Part Two for Model Years 2021–2026 Passenger Cars and Light Trucks, which relaxed federal GHG emissions and fuel economy standards (85 Federal Register 24174). At the time of preparation of this EIR the implications of the SAFE Rule on California's future emissions are uncertain. On February 8, 2021, the incoming federal administration issued a stay in regard to the legal challenges by California and other states to the revocation of California's waiver (JDSupra 2021a). As of April 22, 2021, there is currently a proposal to withdraw Part One of the SAFE Rule (JDSupra 2021b).

In August 2016, the U.S. EPA and NHTSA announced the adoption of the phase two programs related to the fuel economy and GHG standards for medium- and heavy-duty trucks (U.S. EPA 2016). The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi- trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower carbon dioxide (CO₂) emissions by approximately 1.1 billion MT CO₂ and reduce oil consumption by up to two billion barrels over the lifetime of the vehicles sold under the program.

b. State Laws, Regulations, and Policies

CARB is responsible for the coordination and oversight of State and local air pollution control programs in California. California has a numerous regulations aimed at reducing the state's GHG emissions. These initiatives are summarized below.

Executive Order S-3-05

Executive Order S-3-05, among other things, established the following GHG emission reduction goals for California: reduction to 2000 levels by 2010; to 1990 levels by 2020; and to 80 percent below 1990 levels by 2050.

Assembly Bill 1493

Assembly Bill (AB) 1493 (Chapter 200, Statutes of 2002), known as the "Pavley bill," amended Health and Safety Code sections 42823 and 43018.5 requiring CARB to develop and adopt regulations that achieve maximum feasible and cost-effective reduction of GHG emissions from passenger vehicles, light-duty trucks and other vehicles used for noncommercial personal transportation in California.

Implementation of new regulations prescribed by AB 1493 required that the State of California apply for a waiver under the federal Clean Air Act. Although EPA initially denied the waiver in 2008, EPA approved a waiver in June 2009, and in September 2009, CARB approved amendments to its initially adopted regulations to apply the Pavley standards that reduce GHG emissions to new passenger vehicles in model years 2009 through 2016. According to CARB, implementation of the Pavley regulations is expected to reduce fuel consumption while also reducing GHG emissions (CARB 2017a).

Assembly Bill 1007: State Alternative Fuels Plan

AB 1007 (Chapter 371, Statutes of 2005) required CEC to prepare a State plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels Plan (SAF Plan) in partnership with the ARB and in consultation with other State, federal and local agencies. The SAF Plan presents strategies and actions California must take to increase the use of alternative non- petroleum fuels in a manner that minimizes 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 fuels use, reduce GHG emissions and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Assembly Bill 32

California's major initiative for reducing GHG emissions is outlined in Assembly Bill 32, the "California Global Warming Solutions Act of 2006," signed into law in 2006 (Chapter 488, Statutes of 2006). AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020, and requires CARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt

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regulations to require reporting and verification of statewide GHG emissions. Based on this guidance, CARB developed a Scoping Plan, which was adopted on December 11, 2009, approving a 1990 statewide GHG level and 2020 limit of 427 MMT CO₂e (CARB 2008). The Scoping Plan included measures to address GHG emission reduction strategies related to energy efficiency, water use and recycling and solid waste, among other measures. Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since approval of the Scoping Plan.

In May 2014, CARB approved the first update to the AB 32 Scoping Plan, which included an adjusted 2020 limit of 431 MMT CO₂e (CARB 2014). The 2013 Scoping Plan update defines CARB's climate change priorities for the next five years and sets the groundwork to reach post-2020 statewide goals. The update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluates how to align the State's longer-term GHG reduction strategies with other State policy priorities, such as for water, waste, natural resources, clean energy and transportation and land use (CARB 2014).

Senate Bill 32

On September 8, 2016, the governor signed Senate Bill 32 into law (Chapter 429, Statutes of 2016), extending AB 32 by requiring the State to further reduce GHGs to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). SB 32 became effective on January 1, 2017 and now codifies the 2030 goal set in EO B-30-15. This requires CARB to develop technologically feasible and cost-effective regulations to achieve the targeted 40 percent GHG emission reduction. In November 2017, CARB adopted an updated Scoping Plan that calls for emissions reductions at the State level that meet or exceed the Statewide GHG target, and notes that additional effort will be needed to maintain and continue GHG reductions to meet the mid- (2030) and long-term (2050) targets (CARB 2017a).

Executive Order B-55-18

On September 10, 2018, the governor issued Executive Order B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets. The 2022 Scoping Plan Update will assess progress towards achieving the SB 32 target and layout out a path to achieve carbon neutrality (CARB 2021b).

Executive Order S-01-07 (Low Carbon Fuel Standard)

Executive Order S-01-07 (17 CCR 95480 et seq.) requires the state to achieve a 10 percent or greater reduction by 2020 in the average fuel carbon intensity for transportation fuels in California regulated by ARB. ARB identified the Low Carbon Fuel Standard (LCFS) as a discrete early action item under AB 32.

In 2018, CARB approved amendments to the LCFS regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

Executive Order B-16-12

Executive Order B-16-12 orders State entities under the direction of the Governor including CARB, the Energy Commission and Public Utilities Commission to support the rapid commercialization of zero emission vehicles (ZEVs). It directs these entities to achieve various benchmarks related to zero emission vehicles, including:

- Infrastructure to support up to one million zero emission vehicles by 2020,
- Widespread use of zero emission vehicles for public transportation and freight transport by 2020,
- Over 1.5 million zero emission vehicles on California roads by 2025,
- Annual displacement of at least 1.5 billion gallons of petroleum fuels by 2025, and
- A reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels by 2050.

Executive Order N-19-19

Executive Order N-19-19 was signed on September 20, 2019 and is intended to require the redoubling of the state's efforts to reduce greenhouse gas emissions and mitigate the impacts of climate change while building a sustainable, inclusive economy. The Executive Order includes four main directives which include investment, transportation, state buildings and operations, and zero-emissions vehicles.

SB 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard Program. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 50 percent by 2026, 60 percent by 2030, and 100 percent by 2045.

Senate Bill 375

The Sustainable Communities and Climate Protection Act of 2008 (SB 375), signed in August 2008, enhances the state's ability to reach AB 32 goals by directing the CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. Metropolitan Planning Organizations are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the Metropolitan Planning Organization's Regional Transportation Plan (RTP). On March 22, 2018, CARB adopted updated regional

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targets for reducing GHG emissions from 2005 levels by 2020 and 2035. Regional targets assigned to AMBAG are a 3 percent per capita GHG emissions reduction from 2005 levels by 2020, and a 6 percent per capita GHG emissions reduction from 2005 levels by 2035.

Senate Bill 391

The California Transportation Plan Act requires California Department of Transportation (Caltrans) to prepare a statewide plan that addresses how the state will achieve maximum feasible emissions reductions to attain a statewide reduction of GHG emissions to 1990 levels by 2020 and 80 percent below 1990 levels by 2050. Caltrans prepared the original California Transportation Plan in June 2016 and released an update of the plan in February 2021 (Caltrans 2021).

As EO B-55-18 establishes a goal of achieving economy-wide carbon neutrality in California by 2045, the plan establishes policies and strategies to move toward a carbon-neutral transportation system. However, current trends do not indicate the state will achieve carbon-neutrality. The statewide strategy has not been developed to achieve carbon neutrality and regional targets do not require any Metropolitan Planning Organization's RTP to achieve carbon-neutrality over the current planning horizon.

AB 197

AB 197 of 2016 (Chapter 250, Statutes of 2016) expands CARB membership to include two nonvoting members from the Legislature; creates a Joint Legislative Committee on Climate Change Policies to make recommendations to the Legislature concerning climate change policies; provides for annual reporting of GHG emissions from sectors covered by the AB 32 Scoping Plan as well as evaluations of regulatory requirements and other programs that may affect GHG emissions trends; and specifies that the adoption of GHG emissions reduction rules and regulations shall consider the social costs. In addition, Scoping Plan updates are required to identify the range of potential GHG emissions reductions and the cost-effectiveness for each emissions reduction measure, compliance mechanism and incentive.

Executive Order N-79-20

Executive Order N-79-20 established a Statewide goal that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035 and a further goal of the State that 100 percent of medium- and heavy-duty vehicles in the State be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks.

Executive Order N-82-20

Executive Order N-82-20 established a goal of conserving at least 30 percent of California's lands and coastal waters by 2030 and directed state agencies to create a Natural and Working Lands Climate Smart Strategy to advance the State's carbon neutrality goal and build climate resilience.

SB 1383

SB 1383 of 2016 (Chapter 395, Statutes of 2016) sets forth specific legislative direction for control of short-lived climate pollutants (SLCPs). It requires CARB to approve and begin implementing its SLCP strategy to achieve the following reductions in emissions by 2030 compared to 2013 levels: methane by 40 percent, hydrofluorocarbons by 40 percent, and black carbon (non-forest) by 50 percent (CARB 2017b). The bill also specifies targets for reducing organic waste in landfills. SB 1383 also requires CARB to adopt regulations to be implemented on or after January 1, 2024 specific to the dairy and livestock industry, requiring a 40 percent reduction in methane emissions below 2013 levels by 2030, if certain conditions are met. Lastly, the bill requires CalRecycle to adopt regulations to take effect on or after January or after January 1, 2022 to achieve specified targets for reducing organic waste in landfills.

California Building Energy Efficiency Standards

California Code of Regulations Title 24, Part 6 contains California's Energy Efficiency Standards for Residential and Non-residential Buildings. California Building Energy Efficiency Standards were established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and nonresidential buildings. The standards are updated on an approximately three-year cycle to allow consideration and possible incorporation of new efficient technologies and methods. In 2019, CEC updated the Building Energy Efficiency Standards with more stringent requirements effective January 1, 2020. All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The CEC Impact Analysis estimates that nonresidential buildings will be 30 percent more energy efficient compared to buildings built consistent with 2016 Building Energy Efficiency Standards, and single-family homes will be 7 percent more energy efficient (CEC 2018). Due to the solar requirement for all new homes, the CEC also estimates that the 2019 standards will cut energy demand from grid electricity in new homes by more than 50 percent (CEC 2018). The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary due to local climatologic, geologic, or topographic conditions, provided that these standards exceed those provided in Title 24. At the time of this EIR, the 2022 California Code of Regulations Title 24 is currently out for review and is proposed to be adopted before the end of 2021.

California Green Building Standards Code (CALGreen)

California Code of Regulations Title 24, Part 11 contains California's green building code (CALGreen), which was developed to provide a consistent approach to green building within the State. The original 2009 CALGreen was included voluntary measures and the 2016 CALGreen version first instituted mandatory minimum environmental performance standards for all ground-up new construction of non-residential and residential structures.

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The most recent update in January 2020 outlines minimum requirements for newly constructed residential and nonresidential buildings to reduce GHG emissions through improved efficiency and process improvements. It also includes voluntary tiers to further encourage building practices that improve public health, safety, and general welfare by promoting a more sustainable design.

California State Transportation Agency (CalSTA) Climate Action Plan for Transportation Infrastructure (CAPTI)

The Climate Action Plan for Transportation Infrastructure (CAPTI) details how the state recommends investing billions of discretionary transportation dollars annually to aggressively combat and adapt to climate change while supporting public health, safety and equity (CalSTA 2021). CAPTI builds on executive orders signed by Governor Gavin Newsom in 2019 and 2020 targeted at reducing greenhouse gas (GHG) emissions in transportation, which account for more than 40 percent of all emissions, to reach the state's ambitious climate goals. The CAPTI provides investment strategies that focuses on expanding travel options in California and ensuring said investments also prioritize advancing equity and climate priorities in the State. The CAPTI was adopted in July 2021.

c. Regional and Local Laws, Regulations, and Policies

AMBAG

The AMBAG Sustainability Program has completed Local Government Operations inventories for AMBAG jurisdictions in 2005 and Community-wide GHG inventories in 2005, 2010, 2015, 2018 and 2019 for all AMBAG jurisdictions. AMBAG also supports local climate change efforts by providing data and technical support to jurisdictions working on climate action plans. The AMBAG Sustainability program also provides technical support to public sector agencies seeking to implement energy efficiency projects and seek to educate the community on sustainability, and energy related topics.

Local Climate Action Plans

Seven of AMBAG's member jurisdictions have adopted climate action plans that set goals and outline policies to achieve GHG reduction targets. These cities are Capitola, Gonzales, Monterey, Santa Cruz and Watsonville, as well as and Santa Cruz County (Capitola 2015; Monterey 2016; Santa Cruz 2012; Watsonville 2015; County of Santa Cruz 2013). In addition, the cities of Carmel-by-the-Sea, Hollister, and Salinas are each currently developing Climate Action Plans (Carmel-by-the-Sea 2021; Hollister 2021; Salinas 2021). All of AMBAG's jurisdictions have conducted baseline emissions inventories, which establish a reference point for GHG emissions reduction.

The completed climate action planning documents in the AMBAG region address similar issues related to emissions produced by transportation, energy usage and other operational emissions such as water supply and conveyance, wastewater treatment and solid waste

disposal. The types and quantity of emissions produced in the AMBAG region vary among jurisdictions.

However, for most jurisdictions, transportation and energy usage produce a majority of GHG emissions. Climate action planning policies in the region establish a framework for improved circulation networks and energy conservation. Transportation policies aim to reduce vehicle miles traveled (VMT) by offering more opportunities for alternative transportation modes, including bicycling, walking and transit use. In addition, many of the documents include policies to promote transit oriented development (TOD) and land use policies that encourage a greater diversity of land use in closer proximity to one another. In order to reduce emissions caused by energy usage, jurisdictions have established policies that will facilitate and encourage energy efficiency for both residential and commercial land uses. Cities and counties include programs to improve energy efficiencies in old and new buildings and decrease the use of fossil fuels by providing incentives for use of renewable energy.

4.8.3 Impact Analysis

a. Methodology and Significance Thresholds

Significance Thresholds

Appendix G of the *State CEQA Guidelines* identifies the following general criteria for determining whether a project's impacts would have a significant impact related to GHG emissions. Specific criteria have been developed for this EIR.

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. An increase that exceeds the following threshold would be considered a significant impact:
 - a. A net increase in GHG emissions by 2045 compared to existing baseline conditions.
2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Any conflict with the following thresholds would be considered a significant impact:
 - a. Conflict with regional SB 375 per capita passenger vehicle CO₂ emission reduction targets of 6 percent by 2035 from 2005 levels;
 - b. Conflict with state's ability to achieve SB 32 GHG reduction target, which aims to reduce statewide emissions to 40 percent below 1990 levels by 2030;
 - c. Conflict with state's ability to achieve EO S-3-05 GHG reduction 2050 goal, which aims to reduce statewide emissions to 80 percent below 1990 levels by 2050, and EO B-55-18; or
 - d. Conflict with applicable local GHG reduction plans.

The Monterey Bay Air Resources District (MBARD) has not adopted GHG significance thresholds. In the absence of MBARD-adopted thresholds, this section uses the project specific thresholds of significance listed above for each GHG impact criterion in Appendix G.

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Executive Order B-55-18 requires total, economy-wide carbon neutrality in California by 2045. Thresholds of significance were not developed for this executive order because a statewide strategy has not been developed to implement it. However, consistency with this executive order will be discussed.

Methodology

Construction Emissions

Although construction activity is addressed in this analysis, construction-related emissions are speculative at the 2045 MTP/SCS level because such emissions are dependent on the characteristics of individual projects as well as the types of construction equipment that will be operating. A qualitative, program-level analysis is provided along with best management practices.

Operational Emissions

To assess whether the operational emissions generated by the 2045 MTP/SCS would result in a significant increase in mobile source and land use GHG emissions, total CO₂ and CO₂e emissions for the 2045 MTP/SCS were calculated and compared to 2020 baseline conditions. CARB's EMFAC2017 model was used to calculate mobile emissions from the full fleet. EMFAC emission factors are established by CARB and accommodate mobility assumptions (e.g., vehicle miles traveled, fleet, speed, time of day) provided by AMBAG's RTDM. EMFAC also reflects the emissions benefits of recent CARB rules, including on-road diesel fleet rules, Advanced Clean Car Standards and the GHG Standards for Medium- and Heavy-Duty Vehicles (CARB 2017a). For CH₄ and N₂O emissions, Rincon created emission factors with EMFAC2017 and derived CO₂e emissions using the GWPs from the IPCC Fifth Assessment (IPCC 2014). CARB's SAFE Rule adjustment factors were not applied for this analysis. The tons per day of CO₂, CH₄, and N₂O emissions were converted into metric tons of CO₂e per year assuming 365 days of activity. GHG emissions from land uses were forecasted in the 2045 Metropolitan Transportation Plan/Sustainable Communities Strategy for Monterey, San Benito, and Santa Cruz Counties Greenhouse Gas Emissions Forecast (Appendix E). The forecast included GHG emission sources for the AMBAG region in the years 2020, 2025, 2030, 2035, 2040, and 2045 with the relevant years (2020, 2030, and 2045) shown in Table 4.8-2. The land use GHG emissions for the years 2020, 2030, and 2045 were used in the analysis. Table 4.8-2 includes the adjusted forecasted land use GHG emissions. The total GHG emissions and per capita CO₂e emissions were then calculated in Table 4.8-3 (shown in Impact GHG-2). Per capita CO₂e emissions were calculated by dividing the total GHG emissions, which includes on-road transportation and land use emissions, by the region's forecasted population. If total regionwide GHG emissions associated with the 2045 MTP/SCS do not exceed the 2020 baseline emissions, impacts related to GHG emissions would not be considered significant.

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Table 4.8-2 AMBAG Regional Adjusted Forecast Detailed Summary (MT CO₂e)

GHG Emissions Source	2020	2030 ¹	2045
Transportation	2,875,843	2,484,119	2,263,073
On-Road Transportation ²	2,533,207	2,116,128*	1,868,236
Aviation Gasoline Fuel Sales	2,679	2,832	2,999
JET-A Fuel Sales	8,185	8,809	9,453
Monterey Regional Airport	41,282	43,244	45,549
Off-road Natural Gas	9,597	9,893	10,286
Off-road Diesel	185,994	200,923	210,524
Off-road Gasoline	94,899	102,290	116,026
Residential	497,234	525,414	548,435
Electricity - 3CE	10,043	4,114	–
Electricity - PG&E	109	65	–
Electricity - KCCP	2,744	1,583	–
Natural Gas	484,338	519,652	548,435
Commercial/Industrial	516,010	517,746	537,089
Electricity - 3CE	16,217	6,599	–
Electricity - PG&E	1,084	628	–
Electricity - KCCP	6,008	3,423	–
Natural Gas	492,701	507,095	537,089
Wastewater	24,504	25,818	27,279
Fugitive Emissions from Septic Systems	9,420	9,921	10,480
Process N ₂ O from Wastewater Treatment	740	779	823
Process N ₂ O from Effluent Discharge	14,345	15,117	15,976
Solid Waste	374,138	399,452	353,461
Monterey Peninsula Landfill	98,232	102,902	108,386
Johnson Canyon Sanitary Landfill	242	253	266
John Smith Landfill	56,908	65,127	–
Buena Vista Landfill	19	20	–
Community Generated Solid Waste	218,737	231,151	244,809
Agricultural	455,098	440,489	422,481
Enteric Fermentation	258,071	258,071	258,071
Manure Management	51,973	51,973	51,973
Nitrogen Fertilizer Application	145,054	130,445	112,437
Total	4,742,827	4,393,038	4,151,818

Notes: Values in this table may not add up to totals due to rounding.

All values are of the unit metric tons of carbon dioxide equivalent (MT CO₂e)

PG&E = Pacific Gas and Electric; 3CE = Central Coast Community Energy; KCCP = King City Community Power; N₂O = nitrous oxide

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¹ The 2030 emissions were calculated using VMT that was linearly interpolated using the 2020 and 2035 VMTs.

² The on-road transportation emissions account for all gasoline and diesel vehicle types (e.g., passenger vehicles, medium-duty trucks, heavy-duty trucks, buses, motorhomes, and motorcycles) traveling within the AMBAG region.

See Appendix E for the on-road transportation CO₂ GHG emissions and for the 2045 MTP/SCS GHG Emissions Forecast letter. Please refer to Appendix F of the 2045 MTP/SCS for the modeling methodology for VMT.

SB 375 Analysis (Per Capita Passenger Vehicle Emissions)

The SB 375-based threshold is also included as it demonstrates AMBAG's achievement of CARB-specified targets and consistency toward achieving the goals of SB 32. As discussed in Section 4.8.1, *Setting*, the targets from CARB are identified as a three percent per capita reduction from 2005 levels by 2020¹ and a six percent per capita reduction from 2005 levels by 2035. In 2005, GHG emissions from passenger vehicles and light-duty trucks in the AMBAG region were approximately 18.68 pounds of CO₂ per capita.² Therefore, AMBAG must reduce these levels to meet the 2035 target. AMBAG calculated the 2035 per capita GHG emissions using EMFAC2014 and post-model adjustment. The SB 375 VMT differs from the full-fleet VMT that is described above since it only includes the following vehicle categories: passenger cars (LDA), light-duty trucks (LDT1 and LDT2), and medium-duty trucks (MDV). In addition, the 2005 per capita GHG emissions were calculated using EMFAC2011; thus, AMBAG created an adjustment factor to account for the two versions of EMFAC used. If regionwide GHG emissions associated with the 2045 MTP/SCS from passenger vehicles do not exceed 18.68 pounds of CO₂ per capita in 2035, the MTP/SCS would meet the SB 375 regional GHG reduction target. Note that there are no post-2035 targets.

Consistency with SB 32, the 2017 Scoping Plan, EO S-3-05, and EO B-55-18

Meeting the goals of SB 375 does not guarantee consistency with SB 32 and the 2017 Scoping Plan. As described above, the SB 375 is only concerned with VMT from specific vehicle categories (i.e., LDA, LDT1, LDT2, and MDV). For an analysis regarding SB 32, the full fleet needs to be accounted for because SB 32 pertains to all mobile emissions as well as land use emissions. To determine that a project would not conflict with the State's ability to achieve the SB 32 target and its associated 2017 Scoping Plan, the 2045 MTP/SCS would need to achieve substantial progress toward achieving the target reduction. Mobile source emissions were calculated to determine regionwide GHG emissions with implementation of the 2045 MTP/SCS. If implementation of the 2045 MTP/SCS would achieve substantial progress toward the emissions reduction targets established by SB 32, then impacts related to SB 32 would not be considered significant.

At this time, the State Legislature has codified a target of reducing emissions to 40 percent below 1990 emissions levels by 2030 (SB 32) and has developed the 2017 Scoping Plan to demonstrate how the State will achieve the 2030 target and make substantial progress toward the 2050 goal of an 80 percent reduction in 1990 GHG emission levels set by EO S-3-05. In EO B-55-18, which identifies a new goal of carbon neutrality by 2045, the California Air

¹ AMBAG met the 2020 target of three percent per capita reduction from 2005 levels. Attainment of the 2020 target was not analyzed since the target

² Note this 2005 per capita GHG emissions differs from previous iterations of the MTP/SCS because it includes 100 percent of the internal-external (IX) and external-internal (XI) pursuant to CARB's direction.

Resources Board has been tasked with including a pathway toward the EO B-55-18 carbon neutrality goal in the next Scoping Plan update.

While state and regional regulators of energy and transportation systems, along with the State's Cap-and-Trade program, are designed to be set at limits to achieve most of the reductions needed to attain the State's long-term targets, local governments can do their fair share toward meeting the State's targets by siting and approving projects that accommodate planned population growth and projects that are GHG-efficient. At this time, the California Air Resources Board has not adopted a plan that establishes a pathway to achieving the State's long-term targets; therefore, these targets are not used as thresholds of significance in this analysis. Instead, the Association of Environmental Professionals (AEP) Climate Change Committee recommends that CEQA GHG analyses evaluate project emissions in light of the trajectory of state climate change legislation and assess their "substantial progress" toward achieving long-term reduction targets identified in available plans, legislation, or EOs (AEP 2016).

Consistent with AEP Climate Change Committee recommendations, GHG impacts are analyzed using a threshold based on the State's 2030 target, which evaluates whether the project would impede "substantial progress" toward meeting the reduction goals identified in SB 32, EO S-3-05, and EO B-55-18. Because SB 32 is considered an interim target toward meeting the 2045 and 2050 State goals, consistency with SB 32 is considered to be contributing substantial progress toward meeting the State's long-term 2045 and 2050 goals. Avoiding interference with, and making substantial progress toward, these long-term State targets is important because these targets have been set at levels that achieve California's share of international emissions reduction targets that will stabilize global climate change effects and avoid the adverse environmental consequences of climate change (EO B-55-18).

Achieving the State's long-term targets will depend on substantial technological innovation in GHG emission reduction measures and changes in legislation and regulations that will need to occur over the next 25 to 30 years. If the 2045 MTP/SCS is consistent with the SB 32 target, the 2045 MTP/SCS would also achieve substantial progress toward climate-stabilizing targets set forth by EOs S-3-05 and B-55-18 and would be consistent with these long-term goals.

b. Project Impacts and Mitigation Measures

The following section describes GHG emissions and climate change impacts associated with the transportation improvements and future land use scenario included in the 2045 MTP/SCS. Due to the programmatic nature of the 2045 MTP/SCS, a precise, project level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2045 MTP/SCS could result in GHG and climate change impacts as described in the following sections.

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Threshold 1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. An increase that exceeds the following threshold would be considered a significant impact:

- a. A net increase in GHG emissions by 2045 compared to baseline 2020 conditions

Impact GHG-1 CONSTRUCTION OF THE TRANSPORTATION IMPROVEMENT PROJECTS AND DEVELOPMENT WITHIN FUTURE LAND USE PATTERNS ENVISIONED BY THE 2045 MTP/SCS WOULD GENERATE A NET INCREASE GHG EMISSIONS BY 2045 COMPARED TO BASELINE 2020 CONDITIONS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Construction activities associated with transportation improvement projects and future land use patterns envisioned by the 2045 MTP/SCS would generate temporary short-term GHG emissions primarily due to the operation of construction equipment and truck trips. Construction-related emissions are speculative at the 2045 MTP/SCS level because such emissions are dependent on the characteristics of individual development projects. However, GHG emissions would be emitted from travel to and from individual project worksites and the operation of construction equipment such as graders, backhoes, and generators. Site preparation and grading typically generate the highest emissions due to the use of grading equipment and soil hauling. The precise construction timing and construction equipment for individual projects is not specifically known at this time. Nonetheless, construction activities would result in GHG emissions exceeding the 2020 baseline, a significant impact.

Mitigation Measures

For all transportation projects under their jurisdiction, TAMC, SBtCOG, and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the 2045 MTP/SCS program where applicable for transportation projects generating construction GHG emissions, and where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2045 MTP/SCS. Implementation of Mitigation Measures AQ-2(b) and AQ-2(c) in Section 4.3, *Air Quality*, would also reduce GHG emissions from the 2045 MTP/SCS.

GHG-1 Construction GHG Reduction Measures

The project sponsor shall incorporate the most recent GHG reduction measures and/or technologies for reducing GHG emissions measures for off-road construction vehicles during construction. The measures shall be noted on all construction plans and the project sponsor shall perform periodic site inspections. Current GHG-reducing measures include the following:

- Use of on-road heavy-duty trucks that meet the CARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation;

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- All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the five-minute idling limit;
- Substitute gasoline-powered in place of diesel-powered equipment, where feasible; and
- Use of alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel, in place of diesel-powered equipment for 15 percent of the fleet, to the extent electric powered equipment is not feasible;
- Use of materials sourced from local suppliers;
- Recycling of at least 75 percent of construction waste materials; and
- Project proponents shall incentivize that construction workers carpool, and/or use electric vehicles to commute to and from the project site.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for AMBAG transportation projects are RTPAs, and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

Significance After Mitigation

Implementation of Mitigation Measure GHG-1 would reduce short-term construction emissions from individual projects and thus reduce the severity of impacts by requiring best practices for exhaust emissions via readily available, lower-emitting diesel equipment, and/or equipment powered by alternative cleaner fuels (e.g., propane) or electricity, as well as on-road trucks using particulate exhaust filters. Implementation of Mitigation Measures AQ-2(b) and AQ-2(c) would also reduce GHG emissions from the 2045 MTP/SCS. However, these mitigation measure may not be feasible or effective for all projects. Therefore, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. An increase that exceeds the following threshold would be considered a significant impact:

- a. A net increase in GHG emissions by 2045 compared to baseline 2020 conditions

Impact GHG-2 OPERATION OF THE 2045 MTP/SCS WOULD NOT GENERATE A NET INCREASE IN GHG EMISSIONS BY 2045 COMPARED TO BASELINE 2020 CONDITIONS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Total GHG emissions associated with all classes of on-road motor vehicles (e.g., full fleet) were calculated by AMBAG using the CARB's EMFAC2017 model based on the VMT that would be generated due to the 2045 MTP/SCS. The land use emissions for the AMBAG region

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were calculated by Rincon Consultants in a GHG emissions forecast (see Table 4.8-2). Table 4.8-3 compares the total GHG emissions for baseline conditions in 2020 versus future 2045 conditions with implementation of 2045 MTP/SCS. Future conditions in 2045 without implementation of the MTP/SCS are also shown for informational purposes.

As presented in Table 4.8-3, implementation of the 2045 MTP/SCS would result in a net reduction in total emissions of 591,009 MT of CO₂e per year, compared to baseline 2020 conditions, a 13 percent reduction. The estimated reduction in total mobile source emissions would be due to a combination of transportation improvements proposed in the 2045 MTP/SCS and State initiatives. The 2045 MTP/SCS focuses on transportation improvements, such as increased alternative modes of transportation and decreasing congestion on roadways, with supportive infill and high-density mixed-use developments. The Plan would also invest in electric vehicle charging spaces and electric bikes to promote sustainable modes of travel. At the State level, stricter fuel efficiency and vehicle emissions standards such as CAFE standards that will phase in over the planning period would decrease emissions from mobile sources, as reflected in EMFAC2017 emission factors. The land use emissions also account for the continuing effects of Title 24 and SB 100, with the former requiring more efficient buildings and the latter requiring an increased procurement of electricity from renewable sources. Note that the modelled GHG emissions for the 2045 MTP/SCS do not account for the reductions from some strategies, such as transportation demand management (TDM), transportation system management (TSM), telecommuting, and transit service enhancements, which cannot be modeled. As such, the emissions shown in Table 4.8-3 for the 2045 MTP/SCS are conservative. Refer to Appendix F for model sensitivity and recommended off-model adjustments. Since the 2045 MTP/SCS would result in a net decrease in overall total GHG emissions in the AMBAG region, impacts from operational-related GHG emissions would be less than significant.

Table 4.8-3 2045 MTP/SCS Net Change in Total GHG Emissions (2020-2045)

Scenario	2020 Baseline	2045 No Project	2045 MTP/SCS
On-Road Mobile Emissions from VMT (MT CO ₂ e/year) ¹	2,533,207	1,865,475	1,868,236
Land Use Emissions from Table 4.8-2 (MT CO ₂ e/year) ²	2,209,620	2,283,582	2,283,582
Total	4,742,827	4,149,057	4,151,818
Population (persons)	774,729	869,776	869,776
Per Capita (MT CO ₂ e per service population per year)	6.12	4.77	4.77
Total Net Change from Baseline (2020)	N/A	-593,770	-591,009
Per Capita Net Change from Baseline (2020)	N/A	-1.35	-1.35
Change % Per Capita (Baseline vs. 2045 MTP/SCS)	N/A	-22%	-22%
Threshold of Significance	—		>0
Threshold Exceeded?	—		No

MT = metric tons; CO₂ = carbon dioxide; CO₂e = carbon dioxide equivalent; N/A = not applicable

Source: ¹Total GHG emissions were calculated by AMBAG. Refer to 2045 MTP/SCS Chapter 5 and Appendix G for complete methodology. ²2045 Metropolitan Transportation Plan/Sustainable Communities Strategy for Monterey, San Benito, and Santa Cruz Counties Greenhouse Gas Emissions Forecast by Rincon Consultants (October 2021, Appendix E)

Mitigation Measures

None required.

Threshold 2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Any conflict with the following thresholds would be considered a significant impact:

- a. Conflict with regional SB 375 per capita passenger vehicle CO₂ emission reduction targets of 6 percent by 2035 from 2005 levels

Impact GHG-3 IMPLEMENTATION OF THE 2045 MTP/SCS WOULD NOT CONFLICT WITH REGIONAL SB 375 PER CAPITA PASSENGER VEHICLE CO₂ EMISSION REDUCTION TARGETS OF 6 PERCENT BY 2035 FROM 2005 LEVELS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

One of the goals of SB 375 is to reach the GHG emissions reduction targets for passenger vehicles set by CARB through an integrated land use, transportation, and housing plan. Achievement of this goal is an objective of the proposed 2045 MTP/SCS. The target from CARB, analyzed in this EIR, is a six percent per capita reduction from 2005 levels by 2035. To assess whether the 2045 MTP/SCS would reach SB 375's targets, EMFAC 2014 was used to model CO₂ emissions for passenger vehicles in a different model from the emissions reported

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in Table 4.8-3. As described in Section 4.8.3, *Methodology*, the modeling differs pursuant to SB 375 requirements from CARB and only includes light-duty vehicles.

Emissions for 2035 were compared to a 2005 baseline for assessing the compliance with SB 375. The 2020 emissions are included for informational purposes only. Table 4.8-3 summarizes the per capita transportation-related emissions from passenger vehicles along with the off-model adjustments that were included to represent a reasonable effect of the transportation programs included in the 2045 MTP/SCS.³

As shown in Table 4.8-4, implementation of the MTP/SCS in the year 2035 would result in a decrease of per capita CO₂ emissions of 6.6 percent compared to 2005 conditions. Therefore, the 2045 MTP/SCS would achieve the SB 375 targets. Implementation of the 2045 MTP/SCS would help the region achieve its SB 375 target, and this impact would be less than significant.

Table 4.8-4 Per Capita Carbon Dioxide Emission Comparison: Passenger Vehicles

	2005 Baseline (per SB 375)	2020 MTP/SCS	2035 MTP/SCS
Modeled Per Capita CO ₂ Emissions	18.68	18.28	17.63
Adjusted Per Capita GHG Reduction from 2005 ¹		-2.14	-5.65
Off-Model Adjustment Reduction		-0.88	-0.98
Increased Work from Home		-0.77	-0.49
Transportation Demand Management		-0.08	-0.11
MBARD and 3CE Power Incentives to Promote ZEV		-0.03	-0.38
Total % Reduction from 2005		-3.02	-6.63
Reduced 2035 Per Capita MTP/SCS GHG Emissions (Lbs CO₂ per service population per day)		18.11	17.44

CO₂ = carbon dioxide emissions; GHG = greenhouse gas; MBARD = Monterey Bay Air Resources District, ZEV = zero-emissions vehicle

¹Adjustments include the following: increased work-from-home, travel demand management, and promotion of zero-emission vehicles.

Source: Total SB 375 per capita emissions were calculated by AMBAG. Refer to 2045 MTP/SCS Chapter 5 and Appendix G for complete methodology.

Mitigation Measures

None required.

³ The off-model adjustments do not account for some strategies that cannot be modeled, such as TDM, TSM, telecommuting, and transit service enhancements.

Threshold 3: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Any conflict with the following thresholds would be considered a significant impact:

- b. Conflict with state's ability to achieve SB 32 GHG reduction target, which aims to reduce statewide emissions to 40 percent below 1990 levels by 2030
- c. Conflict with state's ability to achieve EO S-3-05 GHG reduction 2050 goal, which aims to reduce statewide emissions to 80 percent below 1990 levels by 2050 and EO B-55-18; or
- d. Conflict with applicable local GHG reduction plans

Impact GHG-4 IMPLEMENTATION OF THE 2045 MTP/SCS WOULD CONFLICT WITH THE STATE'S ABILITY TO ACHIEVE SB 32, EOs S-3-05 AND B-55-18, AND APPLICABLE LOCAL GHG REDUCTION PLAN TARGETS AND GOALS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

SB 32

The SB 375 targets are a key element of CARB's 2017 Scoping Plan. However, the 2017 Scoping Plan states, "Stronger SB 375 GHG reduction targets [adopted in 2018] will enable the State to make significant progress toward this goal, but alone will not provide all of the VMT growth reductions that will be needed. There is a gap between what SB 375 can provide and what is needed to meet the State's 2030 and 2050 goals" (CARB 2017a). Therefore, consistency with the SB 375 target does not necessarily equate to consistency with SB 32 and the 2017 Scoping Plan.

This analysis assumes that the 2045 MTP/SCS would be required to achieve the same proportional GHG reductions as the state by the year 2030 (i.e., a 40 percent reduction in GHG emissions below 1990 levels). As shown in Table 4.8-5, GHG emissions in 2030 would decrease by approximately one percent as compared to 1990 levels, which is not sufficient to achieve the 2030 target of a 40 percent reduction below 1990 levels. It should be noted that the regional 2030 and 2045 GHG emissions shown in Table 4.8-5 do not account for the TDM, TSM, nor the telecommuting strategies, which would reduce the on-road transportation GHG emissions further. However, implementation of these strategies would not be enough to achieve a 40 percent reduction below 1990 GHG emissions. Therefore, although the projects, policies, and land use scenarios identified in the 2045 MTP/SCS are designed to align transportation and land use planning to reduce transportation related GHG emissions, the 2045 MTP/SCS would conflict with the State's ability to achieve the SB 32 GHG emissions reduction goal. As a result, impacts related to conflicts with SB 32 would be significant.

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Table 4.8-5 2030 and 2045 GHG Emissions Compared to 1990 Levels

Scenario	CO ₂ e Emissions (MT/year)	% Reduction in Emissions Compared to 1990 Baseline
1990 Baseline ¹	4,442,218	–
2030 MTP/SCS ²	4,393,038	-1.1%
2045 MTP/SCS	4,151,818	-6.5%

¹ 1990 Baseline from the 2040 MTP/SCS Final Environmental Impact Report (AMBAG 2018).

² In the absence of specific VMT data for year 2030, per capita emissions for year 2030 were calculated via linear interpolation of VMT for years 2020 and 2045

CO₂ = carbon dioxide; MT = metric ton

Source: Total GHG emissions were calculated by AMBAG. Refer to 2045 MTP/SCS Chapter 5 and Appendix G for complete methodology. Refer to 2045 MTP/SCS Appendix A for the population in the Regional Growth Forecast.

2017 Scoping Plan

The 2045 MTP/SCS would implement a suite of transportation improvement projects and facilitate a land use scenario that is consistent with the transportation sustainability goals of the 2017 Scoping Plan. The land use scenario envisioned by 2045 MTP/SCS concentrates the forecasted growth in population and employment in already urbanized areas in an effort to reduce VMT. Active transportation projects would implement complete street design policies that prioritize transit, biking, and walking throughout the AMBAG region, including but not limited to installing bikeways in the City of Monterey (AMBAG ID MON-MRY016-MY), constructing bike and pedestrian access through the former Fort Ord (AMBAG ID MON-TAMC010-TAMC), installing multi-use path in San Benito County (AMBAG ID SB-SBC-A68), constructing connecting sidewalks in Capitola (AMBAG ID SC-CAP-P51-CAP), and developing sidewalks and bicycles through downtown Felton (AMBAG ID SC-CO P46a-USC). Active transportation projects would increase the number, safety, connectivity, and attractiveness of biking and walking facilities by adding sidewalks, trails, bike lanes, crosswalks, intersection improvements, pedestrian bridges, and signage throughout the AMBAG region. Furthermore, 2045 MTP/SCS includes transit projects designed to improve, maintain, enhance, and expand transit services offered by agencies in the AMBAG region, including, but not limited to, the Salinas-Marina Multimodal Corridor project (AMBAG ID MON-MST008-MST) in Monterey County, the Passenger Rail from Hollister to Gilroy project (AMBAG ID SB-LTA-A53) in San Benito County, and the University of California, Santa Cruz Transit Service Operations project (AMBAG ID SC-UC-P74-UC) in Santa Cruz County. In conjunction with these active transportation projects, the Transit projects would increase the availability of low carbon mobility options in the region. The 2045 MTP/SCS also includes a transportation system electrification project in Santa Cruz County (AMBAG ID SC-VAR-P07-VAR) to establish electric vehicle charging stations for electric vehicles, hybrids, ebikes, and scooters, thereby contributing to the 2017 Scoping Plan's goals of increasing the penetration of zero emission vehicles in non-light-duty sectors and electrifying the transportation sector. Therefore, the 2045 MTP/SCS is consistent with the transportation strategies of the 2017 Scoping Plan.

However, since the plan would not achieve a 40 percent reduction in 2030, the 2045 MTP/SCS would conflict with the State's ability to achieve the 2017 Scoping Plan's goal, a significant impact.

EOs S-3-05 and B-55-18

Because the plan would conflict with the State's ability to achieve the SB 32 GHG reduction target, it would also impede "substantial progress" toward meeting the reduction goals identified in EO S-3-05 and EO B-55-18. As a result, impacts related to conflicts with EO S-3-05 and B-55-18 would be significant.

Local GHG Reduction Plans

Climate Action Plans

The cities of Capitola, Gonzales, Monterey, and Santa Cruz, as well as the County of Santa Cruz, have adopted climate action plans. The City of Watsonville has adopted a climate action plan, but it is not certified. These plans set goals and targets for the reduction of GHG emissions and outline policies to help achieve those goals. These local GHG reduction plans have been adopted in an effort to comply with the GHG emissions reduction goals recommended for local governments in the AB 32 Scoping Plan.⁴ The local climate action plans and GHG reduction plans were adopted in an effort to comply with the GHG emissions reduction goals recommended for local governments in the AB 32 Scoping Plan, which was aimed at reducing GHG emissions to 1990 levels by 2020 in accordance with AB 32. These climate action plans are also intended to make progress toward the State's 2030 target of reducing GHG emissions by 40 percent below 1990 levels, as later codified by SB 32 in 2017. Transportation projects and the land use scenario envisioned in the 2045 MTP/SCS would not conflict with local CAPs. Therefore, it would not conflict with the goals of local climate action plans designed to meet the same State goals, and impacts would be less than significant.

Conclusion

The 2045 MTP/SCS would facilitate infill and TOD land use development as well as transit and alternative transportation projects, which would improve the transportation network in the AMBAG planning region and encourage the use of transportation modes other than passenger vehicles. Furthermore, by achieving its SB 375 target, the 2045 MTP/SCS contributes transportation-related GHG emission reductions towards meeting the State's GHG reduction target for 2030 under SB 32.

However, the expected GHG emissions in the AMBAG region in year 2030 would not be consistent with the State's SB 32 GHG reduction target for 2030, which would conflict with the state's ability to achieve SB 32, EO S-3-05, and EO B-55-18 GHG reduction goals. As such, this impact is significant.

⁴ The City of Santa Cruz and Monterey County are currently updating their climate action plans. Several other cities are developing climate action plans, including (but not limited to) the cities of Carmel-by-the-Sea, Hollister, Salinas, and Scotts Valley.

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Mitigation Measures

For all transportation projects under their jurisdiction, SBtCOG, SCCRTC, and TAMC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the 2045 MTP/SCS program where applicable for transportation projects generating construction GHG emissions, and where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions. Implementation of Mitigation Measures T-2(a) and T-2(b) in Section 4.15, *Transportation*, would also reduce GHG emissions from the 2045 MTP/SCS.

GHG-4(a) Transportation-Related GHG Reduction Measures

The implementing agency shall incorporate the most recent GHG reduction measures and/or technologies for reducing VMT and associated transportation related GHG emissions. GHG-reducing mitigation measures include the following:

- Installation of electric vehicle charging stations beyond those required by State and local codes
- Utilization of electric vehicles and/or alternatively-fueled vehicles in company fleet
- Provision of dedicated parking for carpools, vanpool, and clean air vehicles
- Provision of new or improved transit amenities (e.g., covered turnouts, bicycle racks, covered benches, signage, lighting) if project site is located along an existing transit route
- Expansion of existing transit routes
- Provision of employee lockers and showers
- Provision of on-site services that reduce the need for off-site travel (e.g., childcare facilities, automatic teller machines, postal machines, food services)
- Provision of alternative work schedule options, such as telework or reduced schedule (e.g., 9/80 or 10/40 schedules), for employees
- Implementation of transportation demand management programs to educate and incentivize residents and/or employees to use transit, smart commute, and alternative transportation options

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for AMBAG transportation projects are RTPAs, and transportation project sponsor agencies. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during operation where appropriate.

GHG-4(b) Land Use Project Energy Consumption and Water Use Reduction Measures

For land use projects under their jurisdiction, the cities and counties in the AMBAG region can and should implement measures to reduce energy consumption, water use, solid waste

generation, and VMT, all of which contribute to GHG emissions. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

- Require new residential and commercial construction to install solar energy systems or be solar-ready
- Require new residential and commercial development to install low flow water fixtures
- Require new residential and commercial development to install water-efficient drought-tolerant landscaping, including the use of compost and mulch
- Require new development to exceed the applicable Title 24 energy-efficiency requirements
- Require new development to be fully electric

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during operation where appropriate.

Significance After Mitigation

Implementation of project level GHG-reducing measures would reduce GHG emissions, but may not be feasible and cannot be guaranteed on a project by project basis. Additionally, it is speculative at this time to forecast whether project level GHG emission reductions would be sufficient to achieve regionwide reduction in GHG emissions of 40 percent below 1990 levels by 2030. No additional feasible mitigation measures are available that would reduce emissions to trajectories consistent with SB 32, EO S-3-05, and EO B-55-18 GHG reduction goals. Therefore, this impact would remain significant and unavoidable.

a. Specific 2045 MTP/SCS Project That May Result in Impacts

The analysis within this section discusses the potential GHG related impacts associated with the 2045 MTP/SCS. The transportation projects within the 2045 MTP/SCS are evaluated herein in their entirety and are intended to improve circulation rather than cause adverse impacts. However, as described above, the 2045 MTP/SCS would increase GHG emissions as a result of project construction and operation. These effects have been found to be significant, as described above. Any number of the 2045 MTP/SCS projects that require construction equipment or include transportation improvement would presumably increase GHG emissions. Thus, no specific projects are listed in this section related to the adverse impacts on energy in the AMBAG region.

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4.9 Hazards and Hazardous Materials

This section analyzes impacts related to hazardous materials, airports, emergency planning and wildland fires in the AMBAG region. Wildfire is also discussed in Section 4.17, *Wildfire*.

4.9.1 Setting

a. Physical Setting

Hazardous Materials and Waste

The term “hazardous material” is defined in the State of California’s Health and Safety Code (HSC), Chapter 6.95, Section 25501(o) 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 that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Hazardous waste is hazardous material generated, intentionally or unintentionally, as a byproduct of some process or condition. Hazardous wastes are defined in California HSC Section 25141(b) as wastes that:

...because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause, or significantly contribute to an increase in mortality or an increase in serious illness [or] pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

According to the U.S. Environmental Protection Agency (U.S. EPA) (2017a), waste may be considered hazardous if it is specifically listed as known hazardous waste or if it meets the one or more of the following characteristics of a hazardous waste:

- **Toxicity.** Poisonous, harmful when ingested or absorbed.
- **Ignitability.** Capable of being ignited by open flame, liquids with flash points¹ below 60 degrees Celsius.
- **Corrosivity.** Capable of corroding other materials, aqueous wastes with a pH of 2 or less or greater than or equal to 12.5.

¹ Flash point is the lowest temperature at which the vapors of a volatile combustible substance ignite in the air when exposed to flame.

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- **Reactivity.** May be unstable under normal conditions, may react with water, may give off toxic gases or may be capable of detonation or explosion under normal conditions or when heated.

Generation and Disposal of Hazardous Materials and Waste

Many chemicals used in household cleaning, construction, light and heavy industry, dry cleaning, film processing, landscaping and automotive maintenance and repair are considered to generate hazardous materials and waste. Additionally, in some cases, past industrial or commercial uses on a site may have resulted in spills or leaks of hazardous materials and petroleum that have caused contamination of the underlying soil and groundwater. Federal and state laws require that soils and groundwater having concentrations of contaminants that are higher than certain acceptable levels are handled and disposed as hazardous waste during excavation, transportation, and disposal. The California Code of Regulations (CCR), Title 22, Sections 66261.20-24 contains technical descriptions of characteristics that would cause a soil to be classified as a hazardous waste. Hazardous materials require special methods of disposal, storage and treatment, and the release of hazardous materials requires an immediate response to protect human health and safety and the environment. Improper disposal can harm the environment and people who work in the waste management industry.

Businesses that handle or generate hazardous materials within the AMBAG region are monitored by U.S. EPA; the Central Coast Regional Water Quality Control Board (RWQCB); the Monterey County Hazardous Materials Management Services (HMMS); the Santa Cruz County Environmental Health Department; the San Benito County Environmental Health Department; Local Enforcement Agency (LEA) programs; and the Monterey Bay Air Resources District (MBARD). Generators of hazardous waste fall into two categories: large-quantity generators (LQG) and small-quantity generators (SQG). An LQG is defined as a person or facility generating more than 2,200 pounds of hazardous waste per month. An SQG is defined as generating greater than 100 kilograms (kg) and less than 1,000 kg (2,200 pounds) of hazardous waste per month. LQGs include industrial and commercial facilities, such as manufacturing companies, petroleum refining facilities and other heavy industrial businesses.

LQGs must comply with federal and state requirements for managing hazardous waste. LQGs need an U.S. EPA identification number that is used to monitor and track hazardous waste activities. SQGs include facilities such as service stations, automotive repair, dry cleaners, and medical offices. The regulatory requirements for SQGs are less stringent than the requirements for LQGs; however, SQGs must also obtain an U.S. EPA identification number, which must be used for traceability on all hazardous waste documentation. Pursuant to federal law (40 CFR 262.41-43), all such generators must register with U.S. EPA for record-keeping and reporting.

Transportation of Hazardous Materials and Waste

Hazardous materials, hazardous wastes, medical waste, and petroleum products are a subset of the goods routinely shipped along the transportation corridors in the AMBAG region. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by the Department of Toxic Substances Control (DTSC). The DTSC maintains a list of active registered hazardous waste transporters throughout California and the California Department of Public Health regulates the haulers of hazardous waste. There are four registered hazardous waste transporters in Monterey County, one in San Benito County and three in Santa Cruz County (DTSC 2021a).

Transportation of hazardous materials and wastes in the AMBAG region occurs through a variety of modes: truck, rail, and pipeline. Transportation of hazardous materials by truck is regulated by the DOT. The DOT, Federal Motor Carrier Safety Administration, identifies several highways and county roads in the AMBAG region as a Hazardous Materials Route in its National Hazardous Materials Route Registry (2019). These highways and roads include sections of:

- Highway 1
- Highway 17
- Highway 25
- Highway 68
- U.S. 101
- Highway 152
- Highway 156
- Highway 183
- Highway 198 and
- Monterey County Road G14
- Monterey Traffic Underpass from Washington Street to Lighthouse Avenue

According to the U.S. DOT Pipeline and Hazardous Materials Safety Administration and Office of Hazardous Materials Safety, hazardous materials traffic in the U.S. now exceeds 8000,000 shipments per day and results in more than 3.1 billion tons of hazardous materials annually (FHWA 2021). Considering the abundance of roads compared to rail and pipelines in the AMBAG region, trucks are likely responsible for transporting most hazardous materials within the AMBAG region. According to the DOT (2021), truck transport consistently accounts for the largest share of reportable incidents each year. For example, in 2020, truck transport accounted for approximately 1,270 reportable incidents in the State, while rail and air transport accounted for 51 and 103 incidents, respectively. While hazardous waste incidents account for a small percentage of overall highway incidents, the impact of these incidents can be more severe due to the nature of the material(s) involved.

The transport of hazardous materials by rail is also regulated by DOT. Freight railroads have employee safety training requirements and operating procedures that govern the handling

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and movement of hazardous goods, including crude oil. Federal regulations and self-imposed safety practices dictate train speeds, equipment and infrastructure inspections and procedures for how to handle and secure trains carrying hazardous materials. The freight rail industry provides instruction to local public safety officials at the Transportation Technology Center's Security and Emergency Response Training Center and individual railroads conduct additional local training for first responders (Association of American Railroads 2021). Freight railroads also work with State emergency planning committees and local first responders to develop emergency response plans. In accordance with a February 2014 agreement between the DOT and Association of American Railroads, railroads have developed an inventory of emergency response resources and provided the DOT with information on the deployment of those resources. This information is available upon request to appropriate emergency responders (Association of American Railroads 2021). A list of the rail facilities in the AMBAG region is provided in Section 4.15, *Transportation*.

Pipelines, primarily underground, are used to transport a variety of potentially hazardous substances throughout the AMBAG region. For example, Pacific Gas & Electric maintains and operates a natural gas pipeline that is roughly parallel to Highway 1 in parts of Monterey and Santa Cruz counties, and a pipeline through Hollister in San Benito County (Pacific Gas & Electric 2021). The American Petroleum Institute recommends setbacks of 50 feet from petroleum and hazardous liquids lines for new homes, businesses, and places of public assembly. It also recommends 25 feet for garden sheds, septic tanks, and water wells; and 10 feet for mailboxes and yard lights (Transportation Research Board 2004). The Transportation Research Board (2004) encourages the use of zoning regulations to minimize casualties in the event of a catastrophic pipeline rupture. Possible land use techniques include, for example, establishing setbacks; regulating or prohibiting certain types of structures and uses near transmission pipelines; and encouraging, through site and community planning, other types of activities and facilities, such as mini-storage businesses, linear parks and recreational paths, within or in the vicinity of pipeline rights-of-way.

There are no major shipping ports or marine oil terminals in the AMBAG region, and transport by ship on the open sea or rivers is generally not a mode of hazardous materials or waste transport in the region. However, the AMBAG region does contain coastal marinas, boat storage facilities and other similar boat-based service businesses where petroleum products, paints, cleaning solvents and other substances used in the daily operation and maintenance of boats may be stored and handled.

Potential for Hazardous Materials and Hazardous Materials Sites

Many activities in the AMBAG region involve the use of hazardous materials. The use of hazardous materials is commonplace in commercial, industrial, and manufacturing activities, and many businesses within the AMBAG region are permitted to handle and transport hazardous materials. There are historic and existing land uses that have generated hazardous waste as part of daily business operations. LQGs and SQGs include such commercial uses as painters, dry cleaners and photographers, and industrial uses such as automotive service stations, sheet metal works, metal scrap yards, truck yards, cement and lime warehouses,

coal yards, battery manufacture and Pacific Gas & Electric substations. In addition, older structures may contain building materials that are considered hazardous, such as asbestos and lead-based paint. In general, these historic and current uses and building materials are located throughout the AMBAG region (Monterey Bay Air Resources District [MBARD] 2021).

California Government Code Section 65962.5 requires the California Environmental Protection Agency (CalEPA) to prepare an annual Hazardous Waste and Substances List, commonly referred to as the Cortese List. The addition or inclusion of a site on the Cortese List has bearing on the local permitting process and compliance with CEQA. For example, projects proposed at a site on the Cortese List are not eligible for categorical exemptions to CEQA per Section 15300.2(e) of the *State CEQA Guidelines*. The Cortese List is not maintained as a centralized list, however, and a variety of governmental data sources identify sites where hazardous substances may have been released or may have created a hazardous condition on-site. These include:

- DTSC Active Transporter County Search Report (2021a);
- DTSC EnviroStor database (DTSC, 2021b) (Cortese List) for tracking hazardous waste facilities and site with known contamination or sites where there may be reasons to investigate further;
- State Water Resources Control Board's (SWRCB) GeoTracker database (SWRCB 2021) of records for sites that require cleanup, such as leaking underground storage tank (UST) sites, Department of Defense sites, landfill sites and Cleanup Program sites;
- California Office of Emergency Services (OES) Hazardous Materials Spill Notification database (2021) that includes information on reported hazardous material accidental releases or spills;
- The DOT's Hazardous Materials Incident Report System database (DOT 2021), which is maintained by the U.S. EPA and contains data on hazardous material spill incidents;
- California Department of Resources Recycling and Recovery's (CalRecycle) Solid Waste Inventory System database (CalRecycle 2021) of active and closed solid waste sites;
- The U.S. EPA Envirofacts database (2021b) of Resource Conservation and Recovery Act (RCRA) sites, as well as other hazardous sites, such as superfund and brownfield sites; and
- The USACE list of Formerly Used Defense Sites for California (2015).

All databases listed above have identified sites within the AMBAG region. The DTSC Active Transporter County Search Report identifies four registered hazardous waste transporters in Monterey County, one in San Benito County, and three in Santa Cruz County (DTSC 2021a). The DOT's Hazardous Materials Incident Report System database identified 15 hazardous materials spill incidents in the AMBAG region between January 1, 2020 and December 31, 2020. One of these incidents was in Salinas, eight were in Watsonville, three were in Monterey, and three were in the City of Santa Cruz. Seven sites in the AMBAG region are identified on the USACE list of Formerly Used Defense Sites for California. According to CalRecycle's Solid Waste Inventory System database, there are 25 active landfill sites in the AMBAG region and an additional 42 landfill sites that have been closed.

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For some databases, such as the DTSC's EnviroStor database and the U.S. EPA Envirofacts database, the list of identified sites is too exhaustive to provide in its entirety for purposes of this EIR because it is not necessary for programmatic impact analysis. For example, the EnviroStor identifies hundreds of sites in the AMBAG region, including closed sites that have been fully remediated; sites where contamination is contained but land use restrictions are in place; and sites under evaluation, active remediation, and monitoring. Among these sites are superfund sites, state response hazardous sites, contaminated soil sites, and school cleanup sites and leaking UST sites. The U.S. EPA Envirofacts database also identifies hundreds of RCRA sites in the region, including some that are also listed in the EnviroStor database. Examples of some of the RCRA sites identified in the region include gas stations, dry cleaners, automotive repair shops, pharmacies, automobile dealerships, paint stores, trucking companies, University of California Santa Cruz, and the Monterey Bay Aquarium. The SWRCB GeoTracker database also identifies many leaking UST sites, some have been which remediated and cleaned, and some of which have yet to be cleaned. For purposes of this EIR, it is more important to note that many sites on the Cortese list exist throughout the AMBAG region, typically within proximity to the transportation network and more densely populated areas in the region.

To address the potential for documented and undocumented hazards on a site, the American Society for Testing and Materials has developed widely accepted practice standards for the preliminary evaluation of site hazards (E-1527-13) (ASTM 2013). Phase I Environmental Site Assessments (ESAs) include an on-site visit to determine current conditions; an evaluation of possible risks posed by neighboring properties; interviews with persons knowledgeable about the site's history; an examination of local planning files to check prior land uses and permits granted; file searches with appropriate agencies having oversight authority relative to water quality and/or soil contamination; examination of historic aerial photography of the site and adjacent properties; a review of current topographic maps to determine drainage patterns; and an examination of chain-of-title for environmental lines and/or activity and land use limitations. If a Phase I ESA indicates the presence, or potential presence of contamination, a site specific Phase II ESA is generally conducted to test soil and/or groundwater. Based on the outcome of a Phase II ESA, remediation of contaminated sites under federal and state regulations may be required prior to development. Phase I ESAs can also be used to identify the potential for presence of hazardous building materials in situations where older structures intended for demolition could contain lead-based paint, asbestos containing materials, mercury, or polychlorinated biphenyls.

Naturally Occurring Asbestos

Asbestos is not a formal mineralogical term, but rather a commercial and industrial term historically applied to a group of silica-containing minerals that form long, very thin mineral fibers (termed amphiboles), which generally form in bundles, that were once widely used in commercial products. Naturally occurring asbestos includes minerals in their natural state, such as in bedrock or soils. Naturally occurring asbestos, which was identified as a toxic air contaminant by CARB in 1986, is of concern due to potential exposures to the tiny fibers that

can become airborne if asbestos-bearing rocks are disturbed by natural erosion or human activities, such as road building, excavations, and other ground-disturbing activities. Once disturbed, microscopic fibers can become lodged in the lungs, which can potentially lead to serious health problems. All three AMBAG counties contain reported naturally occurring asbestos and/or ultramafic rocks, such as serpentinite, which can contain asbestos fibers. However, within the three counties, naturally occurring asbestos are most concentrated in the southern area of San Benito County (USGS 2011). In general, naturally occurring asbestos fibers do not pose a threat unless disturbed and introduced into the air as fugitive dust.

Schools

Children are particularly susceptible to long-term effects from emissions of hazardous materials. Therefore, locations where children spend extended periods of time, such as schools, are particularly sensitive to hazardous air emissions and accidental release associated with the handling of extremely hazardous materials, substances, or wastes. According to the California Department of Education (DOE) (2021), there are 150 public schools in the AMBAG region. Student enrollment in the region is currently approximately 130,000 students (Ed-Data 2021)

Airports

The AMBAG region has six publicly owned civil aviation airports, which include the following:

- Monterey Regional
- Salinas Municipal
- King City Municipal (Mesa Del Rey)
- Marina Municipal
- Watsonville Municipal
- Hollister Municipal

Of these airports, only the Monterey Regional Airport provides scheduled air carrier service. There are also several private airports in the region that are used primarily for agricultural or business purposes, but one of these, the Frazier Lake Airport, also allows public use. Currently, there are two operational military airfields in the region: Camp Roberts Army Airfield and Heliport and the Hunter-Liggett Army Airfield.

Potential hazards in relationship to airport operations are generally regulated by the Federal Aviation Administration (FAA), with local planning and evaluation of proposed projects (in terms of a proposed project's compatibility in relationship to air and ground operations and the safety of the public) under the authority of the applicable airport land use commission (ALUC) through an airport land use compatibility plan (ALUCP). The ALUCs with authority in the AMBAG region include the Monterey County Airport Land Use Commission, San Benito County Airport Land Use Commission, and the Santa Cruz County Community Development Department. Applicable ALUCPs to the AMBAG region are discussed in Section 4.9.2, *Regulatory Setting*, below.

4.9.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

The U.S. EPA is the lead agency responsible for enforcing federal regulations that affect public health or the environment. The primary federal laws and regulations include the RCRA of 1976 and the Hazardous and Solid Waste Amendments enacted in 1984; the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA); and the Superfund Act and Reauthorization Act of 1986 (SARA). Federal statutes pertaining to hazardous materials and wastes are contained in the CFR Title 40 - Protection of the Environment.

Toxic Substances Control Act

The Toxic Substances Control Act of 1976 (15 U.S. Code Section 2601 et seq.) grants EPA the authority to develop reporting, record-keeping, and testing requirements for, as well as restrictions on, the manufacture, use, and sale of chemical substances. Pursuant to Title II of the Toxic Substances Control Act, the EPA adopted the Asbestos Model Accreditation Plan in 1994. The Model Accreditation Plan requires that all persons who inspect for asbestos-containing materials or design or conduct response actions with respect to friable asbestos obtain accreditation by completing a prescribed training course and passing an exam. Section 403 of the Toxic Substances Act establishes standards for lead-based paint hazards in paint, dust, and soil.

Resource Conservation and Recovery Act

RCRA Subtitle C regulates the generation, transportation, treatment, storage and disposal of hazardous waste by LQGs (1,000 kilograms per month or more) through comprehensive life cycle or “cradle to grave” tracking requirements. The requirements include maintaining inspection logs of hazardous waste storage locations, records of quantities being generated and stored, and manifests of pick-ups and deliveries to licensed treatment/storage/disposal facilities. RCRA also identifies standards for treatment, storage, and disposal, which is codified in 40 CFR 260.

Comprehensive Environmental Response Compensation and Liability Act

Congress enacted CERCLA, setting up what has become known as the Superfund program, in 1980 to establish prohibitions and requirements concerning closed and abandoned hazardous waste sites; provide for liability of persons responsible for releases of hazardous waste at these sites; and establish a trust fund to provide for cleanup when no responsible party can be identified. Generally, CERCLA authorizes two kinds of response actions:

- Short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response.

- Long-term remedial response actions that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening.

Superfund Amendments and Reauthorization Act

SARA amended the CERCLA in 1986, emphasizing the importance of permanent remedies and innovative treatment technologies to clean up hazardous waste sites; requiring Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations; providing new enforcement authorities and settlement tools; increasing involvement of the states in every phase of the Superfund program; increasing the focus on human health problems posed by hazardous waste sites; encouraging greater citizen participation in making decisions on how sites should be cleaned up; and increasing the size of the trust fund to \$8.5 billion.

Hazardous Materials Transportation Act

The transportation of hazardous materials is regulated by the Hazardous Materials Transportation Act (49 CFR § 101 et seq.), which is administered by the Research and Special Programs Administration of U.S. DOT. The Hazardous Materials Transportation Act governs the safe transportation of hazardous materials by all modes. The DOT regulations that govern the transportation of hazardous materials are applicable to any person who transports, ships, causes to be transported or shipped, or who is involved in any way with the manufacture or testing of hazardous materials packaging or containers. The DOT regulations govern every aspect of the movement, including packaging, handling, labeling, marking, placarding, operational standards, and highway routing.

Emergency Planning Community Right-to-Know Act

The Emergency Planning Community Right-to-Know Act (EPCRA), or SARA Title III, was enacted in October 1986. SARA Title III requires any infrastructure at the State and local levels to plan for chemical emergencies, including identifying potential chemical threats. Reported information is then made publicly available so that interested parties may become informed about potentially dangerous chemicals in their community. EPCRA Sections 301–312 are administered by EPA’s Office of Emergency Management. EPA’s Office of Information Analysis and Access implements EPCRA’s Section 313 program. In California, SARA Title III is implemented through the California Accidental Release Prevention Program (CalARP).

Federal Disaster Mitigation Act

The Disaster Mitigation Act of 2000 provided a new set of mitigation plan requirements that encourage state and local jurisdictions to coordinate disaster mitigation planning and implementation. States are encouraged to complete a “Standard” or an “Enhanced” Natural Mitigation Plan. “Enhanced” plans demonstrate increased coordination of mitigation activities at the state level and, if completed and approved, increase the amount of funding through the Hazard Mitigation Grant Program.

Code of Federal Regulations, Title 14, Part 77

The primary role of the FAA is to promote aviation safety and control the use of airspace. Public use airports that are subject to the FAA's grant assurances must comply with specific FAA design criteria, standards, and regulations. Land use safety compatibility guidance from the FAA is limited to the immediate vicinity of the runway, the runway protection zones at each end of the runway, and the protection of navigable airspace.

14 CFR 77, *Safe Efficient Use and Preservation of the Navigable Airspace*, establishes the federal review process for determining whether proposed development activities in the vicinity of an airport have the potential to result in a hazard to air navigation. 14 CFR Part 77 identifies standards for determining whether a proposed project would represent an obstruction "that may affect safe and efficient use of navigable airspace and the operation of planned or existing air navigation and communication facilities." Objects that are identified as obstructions based on these standards are presumed to be hazards until an aeronautical study conducted by the FAA determines otherwise.

b. State Laws, Regulations, and Policies

California Asbestos Regulations

In 1990, CARB issued an Airborne Toxic Control Measure (ATCM), which prohibited the use of serpentine aggregate for surfacing if the asbestos content was 5 percent or more. In July 2000, CARB adopted amendments to the existing ATCM prohibiting the use or application of serpentine, serpentine-bearing materials, and asbestos-containing ultramafic rock for covering unpaved surfaces unless it has been tested using an approved asbestos bulk test method and determined to have an asbestos content that is less than 0.25 percent. In July 2001, CARB adopted a new ATCM for construction, grading, quarrying, and surface mining operations in areas with serpentine or ultramafic rocks. These regulations are codified in Title 17, Section 93105 of the CCR. The regulations require preparation and implementation of an Asbestos Dust Mitigation Plan for construction or grading activities on sites greater than 1 acre in size with known NOA soils. The air districts enforce this regulation. In October 2000, the Governor's Office of Planning and Research issued a memorandum providing guidance to lead agencies in analyzing the impacts of NOA on the environment through the CEQA review process. In November 2000, the California Department of Real Estate added a section to subdivision forms that includes questions related to NOA on property proposed for development. In 2004, as part of its school-site review program, DTSC's School Property Evaluation and Cleanup Division released interim guidance on evaluating NOA at school sites. In addition, California Health and Safety Code Section 19827.5 prohibits issuance of demolition permits by local and State agencies without assessment of the potential for the structure to contain asbestos.

Title 8, California Code of Regulations

The California Division of Occupational Safety and Health Administration (Cal/OSHA) lead standard for construction activities is implemented under Title 8 of the CCR. The standard

applies to any construction activity that may release lead dust or fumes, including, but not limited to, manual scraping, manual sanding, heat gun applications, power tool cleaning, rivet busting, abrasive blasting, welding, cutting, or torch burning of lead-based coatings. Unless otherwise determined by approved testing methods, all paints and other surface coatings are assumed to contain lead at prescribed concentrations, depending on the application date of the paint or coating.

California Fire Code

The California Fire Code is Chapter 9 of CCR Title 24. It is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The California Fire Code regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The California Fire Code and the California Building Code use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separations from property lines and specialized equipment. To ensure that these safety measures are met, the California Fire Code employs a permit system based on hazard classification.

California Accidental Release Prevention Program

The CalARP Program addresses facilities that contain specified hazardous materials, known as “regulated substances,” that, if involved in an accidental release, could result in adverse off-site consequences. The CalARP Program defines regulated substances as chemicals that pose a threat to public health and safety or the environment because they are highly toxic, flammable, or explosive.

California Unified Program Administration

The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections and enforcement activities of six environmental and emergency response programs, as listed below:

- Hazardous Materials Release Response Plans and Inventories (Business Plans);
- CalARP Program;
- Underground Storage Tank Program;
- Aboveground Petroleum Storage Act Program;
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs; and
- California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements.

The state agency partners involved in the Unified Program have the responsibility of setting program element standards, working with CalEPA on ensuring program consistency and providing technical assistance to the Certified Unified Program Agencies (CUPA). The following state agencies are involved with the Unified Program:

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- CalEPA is directly responsible for coordinating the administration of the Unified Program. The Secretary of the CalEPA certifies CUPAs
- DTSC provides technical assistance and evaluation for the hazardous waste generator program including onsite treatment (tiered permitting)
- OES is responsible for providing technical assistance and evaluation of the Hazardous Material Release Response Plan (Business Plan) Program and the CalARP Programs
- The Office of the State Fire Marshal is responsible for ensuring the implementation of the Hazardous Material Management Plans and the Hazardous Material Inventory Statement Programs. These programs tie in closely with the Business Plan Program
- SWRCB provides technical assistance and evaluation for the UST program in addition to handling the oversight and enforcement for the aboveground storage tank program

The AMBAG region includes three CUPAs: the Monterey County HMMS, the San Benito County Environmental Health Department, and the Santa Cruz County Environmental Health Department. These three agencies are responsible for implementing the federal and state laws and regulations for all jurisdictions within Monterey, San Benito, and Santa Cruz counties, respectively.

California Land Environmental Restoration and Reuse Act of 2001

The California Land Environmental Restoration and Reuse Act of 2001 established California Human Health Screening Levels (CHHSLs) as a tool to assist in the evaluation of contaminated sites for potential adverse threats to human health. The CHHSLs were developed by the Office of Environmental Health Hazard Assessment, an agency under the umbrella of CalEPA. The thresholds of concern used to develop the CHHSLs are an excess lifetime cancer risk of one in 1 million and a hazard quotient of 1.0 for non-cancer health effects. The CHHSLs were developed using standard exposure assumptions and chemical toxicity values published by EPA and CalEPA. The CHHSLs can be used to screen sites for potential human health concerns where releases of hazardous chemicals to soils have occurred. Under most circumstances, the presence of a chemical in soil, soil gas, or indoor air at concentrations below the corresponding CHHSLs can be assumed to not pose a significant health risk to people who may live (residential CHHSLs) or work (commercial/ industrial CHHSLs) at the site.

California Multi-Hazard Mitigation Plan

The State Hazard Mitigation Plan (SHMP) represents the state's primary hazard mitigation guidance document - providing an updated analysis of the state's historical and current hazards, hazard mitigation goals and objectives, and hazard mitigation strategies and actions. The plan represents the state's overall commitment to supporting a comprehensive mitigation strategy to reduce or eliminate potential risks and impacts of disasters in order to promote faster recovery after disasters and, overall, a more resilient state. State Hazard Mitigation Plans are required to meet the Elements outlined in FEMA's State Mitigation Plan Review Guide (revised March 2015, effective March 2016).

OES is responsible for the development and maintenance of the State's plan for hazard mitigation. The State's multi-hazard mitigation plan was last approved by the Federal Emergency Management Agency (FEMA) as an Enhanced State Mitigation Plan in 2018. The plan is designed to reduce the effects of disasters caused by natural, technological, accidental, and adversarial/human-caused hazards. The SHMP sets the mitigation priorities, strategies, and actions for the state. The plan also describes how risk assessment and mitigation strategy information is coordinated and linked from local mitigation plans into the SHMP and provides a resource for local planners of risk information that may affect their planning area. The State of California is required to review and revise its mitigation plan and resubmit for FEMA approval at least every five years to ensure continued funding eligibility for certain federal grant programs.

California Public Resources Code 21151.4

Pursuant to Public Resources Code Section 21151.4, projects that can be reasonably anticipated to produce hazardous air emissions or handle extremely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school must consult with the potentially affected school district and provide written notification not less than 30 days prior to the proposed certification or adoption of an environmental document. Where a school district proposes property acquisition or the construction of a school, the environmental document must address existing environmental hazards, and written findings must be prepared regarding existing pollutant sources.

California Education Code

Sections 17071.13, 17072.13, 17210, 17210.1, 17213.1-3 and 17268 of the California Education Code became effective January 1, 2000. Together, they establish requirements for assessments and approvals regarding toxic and hazardous materials that school districts must follow before receiving final site approval from the DOE and funds under the School Facilities Program. These requirements are consistent with those described above for certification or adoption of an environmental document under Public Resources Code Section 21151.4.

California Education Code Section 17213(b) establishes requirements for assessments and approvals that address the potential for existing contamination on the site, and whether nearby land uses might reasonably be anticipated to emit hazardous air emissions or handle hazardous materials. Assessment of existing contamination is conducted in coordination with DTSC's School Property Evaluation and Cleanup Division, which is responsible for assessing, investigating, and cleaning up proposed school sites. This Division ensures that selected properties are free of contamination or, if the properties were previously contaminated, that they have been cleaned up to a level that protects the students and staff who will occupy a new school.

Carpenter-Presley-Tanner Hazardous Substances Account Act

The Carpenter-Presley-Tanner Hazardous Substance Account Act imposes liability for hazardous substances removal or remedial actions and requires the State Attorney General

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to recover from the liable person, as defined, certain costs incurred by the DTSC or any of the state's nine RWCQB, upon the request of the DTSC or RWQCB. The act authorizes, except as specified, a party found liable for any costs or expenditures recoverable under the act for those actions to establish, as specified, that only a portion of those costs or expenditures are attributable to the party, and requires the party to pay only for that portion. If each party does not establish its liability, the act requires a court to apportion those costs or expenditures, as specified, among the defendants and the remaining portion of the judgment is required to be paid from the Toxic Substances Control Account. Existing law authorizes the money deposited in the Toxic Substances Control Account in the General Fund to be appropriated to the DTSC for specified purposes, including the payment of the costs incurred by the state for those actions.

Lempert-Keene-Seastrand Oil Spill Prevention and Response Act

The Lempert-Keene-Seastrand Oil Spill Prevention and Response Act of 1990 granted the Office of Spill Prevention and Response the authority to direct prevention, removal, abatement, response, containment, and cleanup efforts regarding all aspects of any oil spill in marine waters of California. The Office of Spill Prevention and Response implements the California Oil Spill Contingency Plan, consistent with the National Contingency Plan, which pays special attention to marine oil spills and impacts to environmentally- and ecologically sensitive areas. In 2014, the Office of Spill Prevention and Response program was expanded to cover all statewide surface waters at risk of oil spills from any source, including pipelines and the increasing shipments of oil transported by railroads.

Local Community Rail Security Act

The Local Community Rail Security Act of 2006 (Public Utilities Code Sections 7665-7667) requires all rail operators to provide security risk assessments to California Public Utilities Commission, the Director of Homeland Security and the Catastrophic Event Memorandum Account that describe the following:

- Location and function of each rail facility;
- Types of cargo stored at or typically moved through the facility;
- Hazardous cargo stored at or moved through the facility;
- Frequency of hazardous movements or storage;
- Description of sabotage-terrorism countermeasures;
- Employee training programs;
- Emergency response procedures; and
- Emergency response communication protocols.

b. Regional and Local Laws, Regulations, and Policies

Monterey Bay Air Resources District

The Monterey Bay Air Resources District (MBARD) attains and maintains air quality conditions in the North Central Coast Air Basin (NCCAB), which comprises Monterey, San Benito, and Santa Cruz counties. MBARD is responsible for air monitoring, permitting, enforcement, long-range air quality planning, regulatory development, education, and public information activities related to air pollution, as required by the Clean Air Act and California Clean Air Act. Projects in the NCCAB are subject to MBARD's rules and regulations, including rules pertaining to asbestos. MBARD Rule 424, National Emission Standards for Hazardous Air Pollutants, sets emissions standards for stationary source emissions, including asbestos emission from building demolition.

City and County General Plans

Local planning policies related to hazards and hazardous materials are established in each jurisdiction's general plan, generally in the Safety Element or equivalent chapter. Safety Elements are required to address geologic hazards, fire hazards, dam failure, evacuation routes, flooding, and emergency response among other issues. For emergency services, some of the relevant policies may include coordinating with other agencies that are responsible for planning medical facilities to meet the health care needs of residents in the region, retaining hospitals, evaluating medical facility proposals, providing emergency response services, and participating in mutual-aid agreements.

Applicable county general plans and examples of city general plans in the AMBAG region are discussed below.

Monterey County

The Monterey County General Plan (Monterey County 2010) contains Policy PS-8.3 in the Public Services Element that pertains to hazardous substances. Policy PS-8.3 states that the County shall establish or maintain programs for the routine inspection of locations of hazardous substances.

Cities in Monterey County also have general plans with goals and policies pertaining to hazardous materials. For example, the City of Marina's General Plan contains goal 4.103, which is to protect the public from health threats posed by hazardous materials. Through its General Plan, the City of Marina ensures that proposed industrial or commercial projects that will use or generate hazardous materials are compatible with surrounding uses as designated by the General Plan. Residential uses and other sensitive uses such as schools must be adequately buffered from adjoining uses which involve the use or generation of hazardous materials (City of Marina 2000).

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San Benito County

The San Benito County 2035 General Plan (County of San Benito 2015) contains policies in the Health and Safety Element that pertain to hazardous materials and waste as shown below.

- **Policy HS-6.1 – Hazardous Materials Storage and Disposal.** The County shall require proper storage and disposal of hazardous materials to prevent leakage, potential explosions, fires, or the escape of harmful gases, and to prevent individually innocuous materials from combining to form hazardous substances, especially at the time of disposal.
- **Policy HS-6.2 – Hazardous Waste Management Plan.** The County shall maintain and implement the Hazardous Waste Management Plan.
- **Policy HS-6.3 – Consistency with Hazardous Waste Management Plan.** The County shall ensure that all applicable land use decisions concerning zoning, subdivision, conditional use permits or variances granted for the operation or expansion of an off-site hazardous waste facility are consistent with the County Hazardous Waste Management Plan before approving a development application.
- **Policy HS-6.4 – Hazardous Materials Incident Response Area Plan.** The County shall maintain and implement when necessary the Hazardous Materials Incident Response Area Plan.
- **Policy HS-6.5 – Transportation Routes.** The County shall restrict transport of hazardous materials within San Benito County to designated routes.
- **Policy HS-6.6 – Household Hazardous Waste Program.** The County shall continue to sponsor household hazardous waste collection days to help residents lawfully dispose of household hazardous waste that is not accepted by the landfill.
- **Policy HS-6.7 – Small Business Hazardous Waste Program.** The County shall continue to work with small businesses that generate, store, or accumulate hazardous waste to help them comply with regulations for the proper treatment, storage, and disposal of these wastes.
- **Policy HS-6.8 – Information on Hazardous Waste Management.** The County shall provide the public, industry, agriculture, and local government with the available information needed to enable them to take rational and cost effective actions to minimize, recycle, treat, dispose of or otherwise manage hazardous wastes within the county.

Cities in San Benito County also have general plans with goals and policies pertaining to hazardous materials and wastes. For example, the City of Hollister's General Plan contains the following applicable policies (City of Hollister 2005).

- **Policy HS1.3 – Coordination with San Benito County and Other Agencies on Safety Matters.** Cooperate with the County of San Benito and with other government agencies in all matters related to safety, hazardous waste management and emergency planning.

- **Policy HS1.12 – Potential Hazardous Soils Conditions.** Evaluate new development prior to development approvals on sites that may contain hazardous materials.
- **Policy HS1.13 – Hazardous Waste Management.** Support measures to responsibly manage hazardous waste to protect public health, safety and the environment, and support state and federal safety legislation to strengthen requirements for hazardous materials transport.
- **Policy HS1.14 – Hazardous Materials Storage and Disposal.** Require proper storage and disposal of hazardous materials to prevent leakage, potential explosions, fires, or the escape of harmful gases, and to prevent individually innocuous materials from combining to form hazardous substances, especially at the time of disposal. Provide the public, industry, agriculture and local government with the available information needed to enable them to take rational and cost-effective actions to minimize, recycle, treat, dispose of or otherwise manage hazardous wastes within the Hollister Planning Area.

Santa Cruz County

The Santa Cruz County General Plan and Local Coastal Program (County of Santa Cruz 1994) contains policies in the Conservation and Open Space Element that pertain to hazardous materials and waste, as shown below.

- **Policy 6.6.1 – Hazardous Materials Ordinance.** Maintain the County's Hazardous Materials ordinance, placing on users of hazardous and toxic materials the obligation to eliminate or minimize the use of such materials wherever possible, and in all cases to minimize the release, emission, or discharge of hazardous materials to the environment, and properly to handle all hazardous materials and to disclose their whereabouts. Further, maintain the County's ordinance relating to ozone-depleting compounds. Ensure that any amendment of existing ordinance provisions is based on a finding that the amendments will provide protection to the environment and the community against toxic hazards that is equal to or stronger than the existing provisions.
- **Policy 6.6.2 – County Use of Toxic/Hazardous Materials.** Eliminate wherever possible, and minimize where elimination is not feasible, the use of hazardous and toxic materials in the operations and programs of County government.
- **Policy 6.6.3 Maintenance of Standards for Use and Control.** Ensure that Santa Cruz County maintains standards for the use and control of hazardous materials which are at least equal in their protection for the environment and the community to measures imposed by other local governments within Santa Cruz County, and in adjoining counties.
- **Policy 6.7.1 – Managing the County's Fair Share of Hazardous Waste.** Any proposed facility shall be consistent with the fair share principle, and with any inter-jurisdictional agreements on hazardous waste management entered into by Santa Cruz County.
- **Policy 6.7.3 – Location of Facilities.** Require any proposed hazardous waste management facility to be located only in those general areas identified in the Hazardous Waste Management Plan.

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Cities in Santa Cruz County also have general plans with goals and policies pertaining to hazardous materials and wastes. For example, the City of Capitola's General Plan contains the following applicable policies (City of Capitola 2014).

- **Policy SN-4.1 – Mitigation Processes.** Mitigate hazard exposure from new development projects through the environmental review process, design criteria, and standards enforcement.
- **Policy SN-4.2 – Site Assessments.** Where deemed necessary, based on the history of land use, require site assessments for hazardous and toxic soil contamination prior to approving development project applications.
- **Policy SN-4.3 – Sensitive Receptors.** Prohibit land uses and development that emit obnoxious odors, particulates, light, glare, or other environmentally sensitive contaminants from being located near schools, community centers, senior homes, and other sensitive receptors.
- **Policy SN-4.4 – Green Building.** Encourage green building practices that reduce potentially hazardous construction materials.
- **Policy SN-4.5 – County Coordination.** Continue to coordinate with the Santa Cruz County Department of Environmental Health Services on enforcement of State and local statutes and regulations pertaining to hazardous materials and waste storage, use, and disposal.

Local Hazard Mitigation Plans

Local jurisdictions develop, adopt, and update hazard mitigation plans to establish guiding principles for reducing hazard risk, as well as specific mitigation actions to eliminate or reduce identified vulnerabilities. Applicable hazard mitigation plans for the AMBAG region include *Monterey County Multi-Jurisdictional Hazard Mitigation Plan* (Monterey County 2014), *County of Santa Cruz Local Hazard Mitigation Plan* (Santa Cruz County 2021) and *County of San Benito Operational Area Multi-Jurisdiction Local Hazard Mitigation Plan* (2015a). These plans serve to reduce or eliminate long-term risk to people and property from natural hazards and their effects in the AMBAG region.

Emergency Response and Evacuation Plans

Emergency response plans include elements to maintain continuity of government, emergency functions of governmental agencies, mobilization and application of resources, mutual aid, and public information. Emergency response plans are maintained at the federal, state, and local levels for all types of disasters, human-made and natural. Local governments have the primary responsibility for preparedness and response activities.

The Monterey County OES alerts and notifies appropriate agencies when disaster strikes, coordinates all responding agencies, ensures resources are available and mobilized, develops plans and procedures for response and recovery, and develops and provides preparedness materials for the public.

The County of San Benito adopted its emergency operations plan in October 2015 (San Benito County 2015b). The emergency operations plan addresses the County's response to

extraordinary emergency situations associated with natural disasters or human-caused emergencies. The emergency operations plan describes the methods for carrying out emergency operations, the process for rendering mutual aid, the emergency services of governmental agencies, how resources are mobilized, how the public will be informed, and the process to ensure continuity of government during an emergency or disaster.

The County of Santa Cruz currently has a draft version of an emergency management plan (Santa Cruz County 2015). The plan establishes a comprehensive, all-hazards approach to incident management across a spectrum of activities including prevention, preparedness, response, and recovery. It addresses the planned response to extraordinary situations associated with large-scale emergency incidents in or affecting Santa Cruz County.

Airport Land Use Compatibility Plans

The four public airports within Monterey County are: Monterey Regional Airport, Marina Municipal Airport, Mesa Del Rey Airport, and Salinas Municipal Airport. The Monterey County ALUC adopted the Monterey Regional Airport ALUCP and the Marina Municipal Airport ALUCP in February 2019 and May 2019, respectively (Monterey County Airport Land Use Commission, 2019a; 2019b). The ALUC published the plan for Salinas Municipal Airport in 1982 (Monterey County Airport Land Use Commission 1982) and the plan for Mesa Del Rey Airport in 1978 (Monterey County Airport Land Use Commission 1978). The goals of the ALUCPs are to protect residents from the negative environmental noise, safety and traffic impacts that can potentially be induced by airports.

The San Benito County ALUC reviews development proposed within the Airport Influence Area of the Hollister Municipal Airport and Frazier Lake Airpark. The ALUC reviews applications in compliance with the policies in the Hollister Municipal Airport Land Use Compatibility Plan and the Comprehensive Land Use Plan - Frazier Lake Airpark (San Benito County 2001; 2012).

As described above, the Santa Cruz County Community Development Department is the ALUC with authority in Santa Cruz County. According to the Caltrans (2014), *1994 General Plan and Local Coastal Program for the County of Santa Cruz* (Santa Cruz County, 1994) and *Watsonville 2005 General Plan* (City of Watsonville, 1994) serve as the ALUCP for the Watsonville Municipal Airport, which is the only public airport in the County of Santa Cruz. Additionally, in July 2017, the City of Watsonville published *Watsonville Municipal Airport Regulations* to augment the existing ordinances of the City of Watsonville Municipal Code that regulate land use activities within and near the Watsonville Municipal Airport.

4.9.3 Impact Analysis

a. Methodology and Significance Thresholds

Appendix G of the *State CEQA Guidelines* identifies the following criteria for determining whether a project's impacts would have a significant impact to hazards and hazardous materials:

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1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
3. Emit hazardous emissions or handles hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school;
4. Be located on a site which is included on a list of hazardous materials compiled by the Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area;
6. Impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan.

The methodology used for the following evaluation is based on a review of documents and publicly available information about hazardous and potentially hazardous conditions in the AMBAG region to determine the potential for implementation of the 2045 MTP/SCS to result in an increased health or safety hazard to people or the environment. This includes city and county planning documents, and hazardous materials database information maintained by various state and federal agencies, such as DTSC and SWRCB. Due to the large area of the AMBAG region and the programmatic nature of impact analyses, known sites of current or former contamination were not evaluated in detail, and physical surveys were not conducted. Rather, this program-level analysis is based on hazards typically associated with certain transportation projects and land uses, and an overall understanding of the key safety concerns that could result from implementation of the 2045 MTP/SCS.

The evaluation of hazards and hazardous materials impacts reasonably assumes that the construction and development under the 2045 MTP/SCS would adhere to the latest federal, state, and local regulations, and conform to the latest required standards in the industry, as appropriate for individual projects.

b. Project Impacts and Mitigation Measures

The following section describes hazards and hazardous materials impacts associated with the transportation projects and land use scenario included in the 2045 MTP/SCS. Table 4.9-1 summarizes the specific 2045 MTP/SCS transportation projects that could result in the impacts discussed below. Due to the programmatic nature of the 2045 MTP/SCS, a precise, project level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2045 MTP/SCS could result in the hazards and hazardous materials impacts as described in the following sections.

Threshold 1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
Threshold 2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment

Impact HAZ-1 PROPOSED TRANSPORTATION IMPROVEMENT PROJECTS AND LAND USE PROJECTS INCLUDED IN THE 2045 MTP/SCS MAY FACILITATE THE ROUTINE TRANSPORT, USE, OR DISPOSAL OF HAZARDOUS MATERIAL, AND MAY RESULT IN REASONABLY FORESEEABLE UPSET AND ACCIDENT CONDITIONS INVOLVING THE RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Land use and transportation projects associated with implementation of the 2045 MTP/SCS would temporarily increase the regional transport, use, storage and disposal of hazardous materials and petroleum products commonly used at construction sites, such as diesel fuel, lubricants, paints and solvents and asphalt and cement products containing strong basic or acidic chemicals. Hazardous waste generated during construction may consist of welding materials, fuel and lubricant containers, paint and solvent containers and discarded asphalt and cement products.

As described above, the DOT has identified several highways and a county road within the AMBAG region as hazardous material routes (DOT 2020). Additionally, trucks transporting hazardous material would also have to use local collector and arterial streets to access individual project sites in the AMBAG region. Transportation projects would also require the temporary storage and use of hazardous materials at locations along project roads. Thus, trucks transporting hazardous materials for project construction would use many of the same freeways, arterials, and local streets as other traffic. This would create a risk of accidents and associated release of hazardous materials for other drivers and for people along these routes, as well as truck drivers. Although the transportation of hazardous materials could result in accidental spills, leaks, toxic releases, fire, or explosion, the DOT prescribes strict regulations for the safe transportation of hazardous materials, as described in Title 49 of the CFR and the Hazardous Materials Transportation Act. These standard accident and hazardous materials recovery training and procedures are enforced by the state and followed by private state-licensed, certified, and bonded transportation companies and contractors.

Construction associated with implementation of the 2045 MTP/SCS could result in impacts related to use of hazardous materials and disturbance of potentially hazardous materials, including asbestos. However, the most likely incidents involving construction-related hazardous materials are generally associated with minor spills or drips. Small fuel or oil spills are possible, but would have a negligible impact on public health. All hazardous materials would be stored, handled, and disposed of according to the manufacturers' recommendations and spills would be cleaned up in accordance with applicable regulations. Hazardous materials spills or releases, including petroleum products such as gasoline, diesel, and hydraulic fluid, regardless of quantity spilled, must be immediately reported if the spill has entered or threatens to enter a water of the State, including a stream, lake, wetland, or storm drain, or has caused injury to a person or threatens injury to public health. Immediate

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notification must be made to the local emergency response agency, or 911, and the OES Warning Center. For non-petroleum products, additional reporting may be required if the release exceeds federal reportable quantity thresholds over a release period of 24 hours as detailed in HSC Section 25359.4 and in 40 CFR 302.4.

The construction of land use and transportation projects included in the 2045 MTP/SCS that require demolition of existing structures, particularly older structures, would have the potential to expose workers and the public to asbestos containing materials or dust containing asbestos. Construction could also occur in areas of naturally occurring asbestos, which could expose construction workers to asbestos. HSC Section 19827.5 requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. Mandatory compliance with asbestos abatement and disposal regulations and requirements, including MBARD Rule 724, would minimize the risk of exposure.

Land use projects included in the 2045 MTP/SCS would increase population, jobs, and households and a variety of land uses including residential, commercial, and industrial. Specific uses such as dry cleaners, gas stations, and certain industrial uses would involve routine transport, use, and disposal of hazardous materials such as household hazardous wastes (e.g., paints, cleaning supplies, solvents, and petroleum products) and commercial and industrial hazardous waste. The operation of businesses facilitated by land use projects included in the 2045 MTP/SCS that use, create, or dispose of hazardous materials would be regulated and monitored by federal, state, and local regulations that provide a high level of protection to the public and the environment from the hazardous materials manufactured within, transported to, and disposed within the AMBAG region. Use of hazardous materials at these businesses would also require permits and monitoring to avoid hazardous waste release through the local CUPA. During operation, businesses that store hazardous materials could potentially experience accidents or upset conditions that result from their routine use. These businesses would be required to prepare spill prevention, containment and countermeasures plans (pursuant to 40 CFR 112) or, for smaller quantities, a spill prevention and response plan. These plans identify best management practices for spill and release prevention and provide procedures and responsibilities for rapidly, effectively, and safely cleaning up and disposing of any spills or releases. Oversight is provided by the CUPA. Pursuant to the requirements and liabilities of applicable regulations, the routine use or accidental spill of hazardous materials at business and industrial uses facilitated by the land use projects included in the 2045 MTP/SCS would not pose a substantial hazard to the public or the environment. Disposal of hazardous waste generated by these businesses would be subject to compliance with DTSC and CalEPA regulations.

Transportation projects included in the 2045 MTP/SCS include a variety of transportation modifications such as new travel lanes, auxiliary lanes, roadway widening, increased transit service and expansion, and other maintenance and rehabilitation projects. The projects may increase the capacity of roadways to transport hazardous materials. Roadway projects in the 2045 MTP/SCS would also improve road safety, as well as pedestrian and bicycle safety,

thereby potentially reducing transportation-related hazardous materials risks because fewer accidents would occur on safer roads. Based on the requirements of Title 49 CFR 171–180, construction and operation of transportation projects would provide for the safe transport and disposal of hazardous waste.

The 2045 MTP/SCS encourages infill development and increased population and employment density near public transit stops, including rail. There could also be increased urbanization along transportation corridors. Thus, the number of people potentially exposed to hazardous conditions could increase as a result of land use projects included in the 2045 MTP/SCS. Although exposure to hazardous conditions could increase, the routine transport, use, and storage of potentially hazardous materials such as fuels, lubricants, solvents, and oils would be required to be conducted in accordance with all applicable State and federal laws, such as the Hazardous Materials Transportation Act, Resource Conservation and Recovery Act, the California Hazardous Material Management Act, and the CCR, Title 22. As described in Section 4.9.2, *Regulatory Setting*, the DOT regulates the transport of hazardous materials by all modes, including rail and highway under the regulations of the Hazardous Materials Transportation Act. The Local Community Rail Security Act of 2006 requires all rail operators to provide security risk assessments to California Public Utilities Commission, which includes emergency response procedures and communication protocols. Mandatory implementation of additional federal, state and local requirements such as CalARP Program and the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act would minimize potential exposure to the public and the environment from accidental releases. Therefore, although population density would increase in proximity to major transportation corridors that are used to transport hazardous and flammable materials, the increased risk of hazard from routine transport or accidental upsets during transport would be minimal.

In conclusion, both planned land use projects and transportation projects could increase the routine transport, use, storage, and disposal of hazardous wastes in the AMBAG region. The planned land use projects and transportation projects could also increase the potential for unintentional upset and accident conditions. Because of the existing federal, state, and local regulations and oversight in place that would effectively reduce the inherent hazard associated with routine transport, use, storage and disposal activities, and regulations that effectively reduce the potential for individual projects to create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions, impacts would be less than significant.

Mitigation Measures

None required.

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Threshold 3: Emit hazardous emissions or handles hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school

Impact HAZ-2 PROPOSED TRANSPORTATION IMPROVEMENT PROJECTS AND LAND USE PROJECTS INCLUDED IN THE 2045 MTP/SCS WOULD NOT EMIT HAZARDOUS EMISSIONS OR HANDLE HAZARDOUS OR ACUTELY HAZARDOUS MATERIALS, SUBSTANCES OR WASTE WITHIN ONE-QUARTER MILE OF AN EXISTING OR PROPOSED SCHOOL. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As discussed in Impact HAZ-1, the land use projects included in the 2045 MTP/SCS could include uses such as dry cleaners, gas stations, and certain industrial uses that would involve routine handling of hazardous materials and waste. Thus, the 2045 MTP/SCS could increase the amounts of hazardous materials handled within 0.25 mile of schools, depending on the specific location of land uses relative to schools in the region. According to the California Department of Education (DOE) (2021), there are 150 public schools in the AMBAG region. Certain industrial uses, such as chemical plants, may also generate hazardous emissions as byproducts, typically in the form of air emissions.

Any new commercial or industrial operations in proximity to existing schools would be required to comply with regulations related to the routine use, storage, and transport of hazardous materials. Land uses that would generate emissions or involve the handling of extremely hazardous materials, substances, or waste within 0.25 mile of an existing school must notify the affected school district pursuant to Public Resources Code Section 21151.4. As discussed in detail above, compliance with existing regulations would reduce the exposure to potential hazards associated with these land uses.

For new schools that may be developed to address the population distribution changes resulting from land use projects included in the 2045 MTP/SCS, the California Education Code, as discussed in Section 4.9.2, *Regulatory Setting*, would ensure that school sites would be free of contamination or cleaned up to a level that would protect students and staff that would occupy a new school site. Therefore, hazardous emissions and handling impacts on schools related to land use projects included in the 2045 MTP/SCS would be less than significant.

The transportation projects included in the 2045 MTP/SCS could increase the capacity to transport hazardous materials on roads within the AMBAG region, including within 0.25 mile of schools. However, all materials must be used, stored, and disposed of in accordance with applicable federal, state, and local laws, which would effectively reduce the potential impacts associated with hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or potential future school. Transportation projects in the 2045 MTP/SCS may also improve road safety, thereby reducing the potential for accidents in proximity of schools related to hazardous materials. Therefore, the hazardous materials impacts related to existing and proposed schools from implementation of the transportation projects included in the 2045 MTP/SCS would be less than significant.

Mitigation Measures

None required.

Threshold 4: Be located on a site which is included on a list of hazardous materials sites compiled by the Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment

Impact HAZ-3 THE 2045 MTP/SCS INCLUDES LAND USE PROJECTS AND TRANSPORTATION PROJECTS THAT COULD OCCUR ON SITES ON THE LIST OF HAZARDOUS MATERIAL SITES COMPILED BY GOVERNMENT CODE SECTION 65962.5. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Throughout the AMBAG region there are many sites where historical releases of hazardous materials or wastes have occurred; these are listed in environmental databases pursuant to Government Code Section 65962.5. As described above, there are hundreds of documented sites of contamination in some stage of DTSC or SWRCB oversight in the region. These sites range from small releases that have had localized effects on private property and have already been remediated to large scale releases from long-term historical industrial practices that have had wider ranging effects on groundwater. Specific sites of documented contamination are not evaluated in this analysis because this is a programmatic level document. Further, because the precise timing of future land use developments is unknown, an evaluation of the potential for specific sites of known contamination within the AMBAG region to be affected by land use projects included in the 2045 MTP/SCS cannot be conducted. However, land use can be used to generally characterize the potential for release of hazardous materials (i.e., hazardous materials releases are more likely to have occurred in areas that currently or historically supported industrial uses). In addition, construction activities that disturb subsurface materials could encounter previously unidentified contamination from past practices or placement of undocumented fill or even unauthorized disposal of hazardous wastes. Encountering these hazardous materials could expose workers, the public or the environment to adverse effects depending on the volume, materials involved and concentrations.

Development on identified hazard sites within the AMBAG region would be preceded by investigation, remediation and cleanup under the supervision of the RWQCB, DTSC, or the applicable hazardous materials division (e.g., County of Monterey Health Department, Santa Cruz County Environmental Health Division, or San Benito County Health and Human Services) before construction activities could begin. The agency responsible for oversight would determine the types of remediation and cleanup required and could include excavation and off-haul of contaminated soils, installation of vapor barriers beneath habitable structures, continuous monitoring wells onsite with annual reporting requirements, or other mechanisms to ensure the site does not pose a health risk to workers or future occupants. In addition, in many instances implementing and/or permitting agencies require submittal of a Phase I ESA prior to approval or implementation of a project. These studies include research in a variety of government databases to determine whether the site has had prior underground tanks or other industrial uses that could result in hazardous

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materials on or below the ground surface. However, with the exceptions for streamlining projects in transit priority areas and siting public schools, there are no general regulatory requirements to conduct a Phase I ESA, or subsequent investigation of potential contamination. Therefore, because it cannot be assumed these practices would regularly occur, the impacts related to land use projects included in the 2045 MTP/SCS would be significant because there could be significant hazard to the public or the environment.

Development on sites listed in environmental databases pursuant to Government Code Section 65962.5 would be required to undertake remediation procedures prior to grading and development under the supervision of the applicable agency, depending upon the nature of any identified contamination. Nevertheless, the impacts of transportation projects included in the 2045 MTP/SCS would be significant because there could be significant hazard to the public or the environment related to projects located on sites listed pursuant to Government Code Section 65962.5.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the 2045 MTP/SCS program where applicable for transportation projects that result in hazardous materials impacts, and where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

HAZ-3 Site Remediation

If an individual project included in the 2045 MTP/SCS is located on or near a hazardous materials and/or waste site pursuant to Government Code Section 65962.5, the implementing agency shall prepare a Phase I ESA in accordance with the American Society for Testing and Materials' E-1527-05 standard. For work requiring any demolition or renovation, the Phase I ESA shall make recommendations for any hazardous building materials survey work that shall be done. All recommendations included in a Phase I ESA prepared for a site shall be implemented. If a Phase I ESA indicates the presence or likely presence of contamination, the implementing agency shall require a Phase II ESA, and recommendations of the Phase II ESA shall be fully implemented. Examples of typical recommendations provided in Phase I/II ESAs include removal of contaminated soil in accordance with a soil management plan approved by the local environmental health department; covering stockpiles of contaminated soil to prevent fugitive dust emissions; capturing groundwater encountered during construction in a holding tank for additional testing and characterization and disposal based on its characterization; and development of a health and safety plan for construction workers.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during project permitting and environmental review and implemented during project construction, as applicable.

Significance After Mitigation

With implementation of this mitigation, impacts would be reduced to less than significant because project sites with hazardous material contamination that are on the list compiled by the Government Code Section 65962.5 would be identified prior to commencement of project construction. Additionally, prior to commencement of construction, measures to remediate contamination, such as containment and disposal of contaminated soil pursuant to federal and state regulations would be required. However, it cannot be guaranteed that all future project level impacts can be mitigated to a less than significant level. There are no other feasible potential mitigation measures. Therefore, impacts would remain significant and unavoidable.

Threshold 5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area

Impact HAZ-4 TRANSPORTATION IMPROVEMENT PROJECTS AND LAND USE DEVELOPMENT INCLUDED IN THE PROPOSED 2045 MTP/SCS LOCATED WITHIN AN AIRPORT LAND USE PLAN OR WITHIN TWO MILES OF A PUBLIC OR PUBLIC USE AIRPORT WOULD NOT RESULT IN A SAFETY HAZARD OR EXCESSIVE NOISE FOR PEOPLE RESIDING OR WORKING IN THE PROJECT AREA. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Land use projects and transportation projects included in the 2045 may be located near a public use airport or a private airstrip. As discussed in Section 4.9.1, *Setting*, there are six airports or airstrips in the AMBAG region, including in Monterey County near the City of Monterey, in the City of Salinas, in the City of King City, in the City of Marina, in the City of Watsonville, and in the City of Hollister. Impacts associated with development near existing airports are largely dependent upon site and project specific information that is not currently available and would be provided in the future as projects within the 2045 MTP/SCS undergo project level environmental review. However, any development and subsequent planning decisions in proximity to airports would be subject to review under the State Aeronautics Act provided under Public Utilities Code §§ 21167 et seq. Specific projects that may affect navigable airspace are also subject to FAA review, as outlined under 14 CFR Parts 77.5, 77.7 and 77.9. Additionally, land use development would be subject to existing zoning regulations, including height restrictions. Because there are existing federal, state, and local regulations and oversight in place that would effectively reduce the inherent hazard associated with development near airports to an acceptable and safe level, the impacts of the 2045 MTP/SCS would be less than significant.

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Mitigation Measures

None required.

Threshold 6: Impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan

Impact HAZ-5 LAND USE DEVELOPMENT AND TRANSPORTATION PROJECTS INCLUDED IN THE 2045 MTP/SCS WOULD NOT IMPAIR IMPLEMENTATION OR PHYSICALLY INTERFERE WITH ADOPTED EMERGENCY RESPONSE OR EVACUATION PLANS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Construction of the land use development and transportation projects included in the 2045 MTP/SCS would require temporary road closures that could impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. Some of the transportation projects may require multiple years to construct. However, standard construction practices include notification of emergency responders where road closures are required. Because road closures are temporary and would be coordinated with emergency responders so that alternative evaluation routes could be developed and employed, construction activities would have a less than significant impact.

The land use projects included the 2045 MTP/SCS emphasize infill and transit oriented development, which would generally focus growth in existing urbanized areas of the AMBAG region. Thus, population density in urbanized areas would increase, which may improve emergency response by eliminating the need to travel to more rural and dispersed locations in the region. Alternatively, large concentrations of people could also cause adverse effects related to the implementation emergency plans because the increased population may overburden adopted evacuation routes and other emergency response resources. However, the management of emergency response and emergency evacuation plans includes regular updates to these plans that incorporate new or proposed developments. Thus, land use projects in the 2045 MTP/SCS would be reflected in the regular and required updates of emergency and evacuation plans applicable to the AMBAG region. In addition, project level CEQA reviews routinely assure that individual projects do not adversely impact emergency response or evacuation plans.

Additionally, the proposed transportation projects would generally increase mobility and circulation capacity and, thereby, have the potential to improve response times for police, fire, and emergency service providers, especially in heavily congested areas. In addition, as described above, emergency and evacuation plans must be regularly updated to incorporate current conditions. Therefore, potential impacts related to interference with emergency response and evacuation plans would be less than significant.

Mitigation Measures

None required.

c. Specific 2045 MTP/SCS Projects That May Result in Impacts

Table 4.9-1 identifies example transportation projects with the potential to increase the capacity on roads that U.S. DOT has identified as hazardous material routes. Increasing the capacity of these roads would increase the amount of hazardous material and waste transported on the roads. These projects are representative and were selected based on their potential scope and likelihood of increasing the capacity of hazardous material routes. Additional specific analysis would be required as individual projects are implemented to determine the project specific magnitude of impact. Mitigation discussed above would apply to these specific projects. In addition to the projects listed in the table, construction of any number of the transportation projects would require the use of petroleum products and other hazardous materials.

Table 4.9-1 2045 MTP/SCS Projects that May Result in Hazardous Materials Impacts

AMBAG Project No.	Project	Location	Impact
MON-CT022-CT	SR 156 - Expressway Conversion	Monterey County	HAZ-1
MON-CT030-SL	U.S. 101 - Salinas Corridor	Monterey County	HAZ-1
MON-MAR136-MA	SR 1 – Imjin Bridge (Northbound)	Monterey County	HAZ-1
MON-MAR137-MA	SR 1 – Imjin Bridge (Southbound)	Monterey County	HAZ-1
MON-SOL014-SO	SR 146 Bypass	Monterey County	HAZ-1
MON-GRN008-GR	U.S. 101 - Walnut Avenue Interchange	Monterey County	HAZ-1
SB-CT-A01	SR 156 Improvement Project - San Juan Bautista to Union Road	San Benito County	HAZ-1
SB-CT-A17	Airline Highway Widening/SR 25 Widening: Sunset Drive to Fairview Road	San Benito County	HAZ-1
SB-CT-A44	Route 25 Expressway Conversion Project, Phase 1	San Benito County	HAZ-1
SB-CT-A45	Route 25 Expressway Conversion Project, Phase 2	San Benito County	HAZ-1
SB-CT-A55	U.S. 101 - Las Aromitas: Monterey/San Benito County Line to State Route 156	San Benito County	HAZ-1
SC-RTC-24e-RTC	3 - Hwy 1: State Park Drive-Bay/Porter Auxiliary Lanes, Bus on Shoulders, & Mar Vista Bike/Ped Bridge	Santa Cruz County	HAZ-1
SC-RTC 24f-RTC	2 - Hwy 1: Auxiliary Lanes from 41st Avenue to Soquel Avenue and Chanticleer Bike/Ped Bridge	Santa Cruz County	HAZ-1
SC-RTC-24g-RTC	4 - Hwy 1: Auxiliary Lanes and Bus on Shoulders from Freedom Boulevard to State Park Drive	Santa Cruz County	HAZ-1
SC-RTC 24r-RTC	94 - Hwy 1: Northbound Auxiliary Lane from San Andreas Road/Larkin Valley Road to Freedom Boulevard	Santa Cruz County	HAZ-1
SC-CO-P83-USC	San Lorenzo Way Bridge Replacement Project	Santa Cruz County	HAZ-1

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AMBAG Project No.	Project	Location	Impact
SC-SC-P81-SCR	Hwy 1/Mission Street at Chestnut/King/ Union Intersection Modification	Santa Cruz County	HAZ-1

4.10 Hydrology and Water Quality

This section describes water quality, groundwater recharge, water supply, drainage, runoff, flooding and inundation impacts of development facilitated by the 2045 MTP/SCS.

4.10.1 Setting

The AMBAG region contains two primary watersheds: the Salinas River Valley, which is the third-longest river in California and traverses the length of Monterey County and the Pajaro River Valley, the primary tributary of which begins in San Benito County and runs through southeastern Santa Cruz County (Regional Water Management Group [RWMG] 2018). In addition, several smaller watersheds are located between the western face of the Coast Range mountains and the Pacific Ocean in both Monterey and Santa Cruz counties and in the southwest and northeast portions of San Benito County.

The Salinas River originates at the Santa Margarita Reservoir in San Luis Obispo County, just to the south of AMBAG's planning area, and extends approximately 155 miles northward to the Monterey Bay (RWMG 2018). The headwaters of the Salinas River are generally undeveloped, while the remainder of the valley is predominantly agricultural with several urban areas, the largest being the City of Salinas.

The California Integrated Regional Water Management (IRWM) Planning is a process that promotes prioritizing water related efforts in a region identifying and implementing water management solutions throughout that region. Based on information provided in the IRWMs plans in the Monterey Bay area, the following discussion of hydrology and water resources is divided into the following four geographic areas: (1) greater Monterey County, (2) the Monterey Peninsula area, (3) the Pajaro River Watershed and (4) northern Santa Cruz County. Greater Monterey County generally includes the entire Salinas River Watershed north of the San Luis Obispo County line, all of the Gabilan and Bolsa Nueva Watersheds in the northern part of the County, and all of the coastal watersheds of the Big Sur coastal region within Monterey County (Monterey County 2013; Pajaro Valley Water Management Agency [PVWMA] et al. 2019). The Monterey Peninsula area lies between the Salinas River and the Big Sur coast, from Point Lobos on the south to Sand City on the north. The Pajaro River Watershed is bound by the Santa Cruz Mountains to the north and Gabilan Range to the south, while its water drains into Monterey Bay (PVWMA et al. 2014). The northern Santa Cruz County region encompasses all of Santa Cruz County except for the Pajaro River Watershed (County of Santa Cruz 2019).

a. Water Quality

Water quality is a concern because of its potential effect on human health, aquatic organisms, and ecosystem conditions. Quality is determined by factors such as native condition of groundwater and surface water, sources of contamination (natural and human induced) and extent of seawater intrusion.

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Surface Water

In the AMBAG region, polluted stormwater and urban runoff discharges have degraded the water quality of creeks, rivers, sloughs, reservoirs, and the Pacific Ocean. Runoff pollutants can include pesticides, fertilizers, green waste, animal waste, human waste, petroleum hydrocarbons such as gasoline and motor oil, trash, and other constituents. Due to the prevalence of agriculture in the Salinas River Valley and the lower Pajaro Valley, pesticide-laden runoff is one of the primary sources of surface water contamination, as shown below in Table 4.10-1. In addition, stormwater flowing over roadways and other transportation facilities carries urban pollutants through natural drainage systems or man-made storm drain facilities to a body of surface water. Such discharges from farmland and transportation facilities are referred to as “non-point” sources because the pollutants are generated from multiple locations rather than a single source and location. Many of these discharges result in untreated pollutants entering waterways. Pollutants contained within urban runoff primarily include suspended solids, oil, grease, pesticides, pathogens, and air pollutants.

The State Water Resources Control Board (SWRCB), in compliance with the Clean Water Act (CWA), Section 303(d), has prepared a list of impaired water bodies in the State of California. Table 4.10-1 shows some of the major water bodies in greater Monterey Bay area that are listed as impaired by SWRCB. The list in Table 4.10-1 is not inclusive of all water bodies in the AMBAG region that are on the 2018 Section 303(d) list of impaired water bodies.

The impairments listed in Table 4.10-1 indicate that the Pajaro River and lower Salinas River experience the broadest array of water quality issues, primarily due to pesticides and other substances in agricultural runoff. Polluted runoff has also impaired the ocean as well as inland waterways. The Northern Santa Cruz County IRWMP states that urban runoff has degraded water quality at moderate levels in coastal lagoons and at ocean beaches. Sewer leaks and overflows contribute to this problem (County of Santa Cruz 2019). All urban lagoons in the planning region are posted as unsafe for swimming year-round due to high bacteria levels. Furthermore, local beaches are frequently posted as unsafe for human contact in response to elevated bacteria. Santa Cruz County has had 50-100 beach-days of posting every year since AB 411 reporting began in 1999 (County of Santa Cruz 2019).

To address surface water quality impairments, the Central Coast Regional Water Quality Control Board (RWQCB) has prescribed total maximum daily loads (TMDLs) in the AMBAG region for nitrates, sediment, pathogens and mercury (PVWMA et al. 2019). The nitrate and sediment TMDLs, completed in 2012, identified irrigated agriculture as a substantial anthropogenic source of both nitrate and sediment loading.

Table 4.10-1 Major Water Bodies Listed as Impaired

Water Body	Impairment Constituent
Monterey County	
Alisal Creek	Ammonia, Chlorophyll-a, Fecal Coliform, Nitrate, Sodium, Toxicity, Turbidity
Elkhorn Slough	Low Dissolved Oxygen, Nitrate, Pesticides, Sediment/Sedimentation, Total Coliform, pH
Espinosa Slough	Priority Organics, Ammonia, Turbidity, Diazinon, Pesticides, pH, Malathion, Toxicity, Nitrate
Monterey Harbor	Metals, PCBs, Toxicity, Low Dissolved Oxygen, Toxic Organics/PCBs
Moro Cojo Slough	Ammonia (Unionized), <i>E. coli</i> , Low Dissolved Oxygen, Nitrate, Pesticides, Sediment/Sedimentation, Total Coliform, Toxicity, Turbidity, pH
Moss Landing Harbor	Arsenic, Chlorpyrifos, Diazinon, Low Dissolved Oxygen, Nickel, Pathogens, Pesticides, Sedimentation/Siltation, Toxicity, pH
Salinas River (middle, near Gonzales Road crossing to confluence with Nacimiento River)	<i>E. coli</i> , Fecal Coliform, Pesticides, Temperature, Turbidity, Unknown Toxicity, pH
Salinas River (lower, estuary to near Gonzales Road crossing)	Benthic Community Effects, Chloride, DDT (Dichlorodiphenyltrichloroethane), <i>E. coli</i> , Fecal Coliform, Nitrate, PCBs (Polychlorinated biphenyls), Pesticides, Specific Conductivity, Sodium, Total Dissolved Solids, Turbidity, Toxicity, pH
Salinas River Lagoon (North)	Nutrients, pH, Pesticides, Temperature, Toxicity
Salinas River Lagoon (South)	Turbidity, pH
San Antonio River (below San Antonio Reservoir)	<i>E. coli</i> , Fecal Coliform
San Benito County	
San Benito River	Boron, Specific Conductivity, <i>E. coli</i> , Fecal Coliform, Toxicity, Sedimentation/Siltation, pH
Santa Cruz County	
Harkins Slough	Chlorophyll-a, Low Dissolved Oxygen, Pathogens
Pacific Ocean (Point Año Nuevo to Soquel Point)	Dieldrin/Pesticides
Pajaro River	Boron, Chlordane, Chloride, Chlorpyrifos, Chromium, DDD (Dichlorodiphenyldichloroethane), Diazinon, Dieldrin, <i>E. coli</i> , Fecal Coliform, Low Dissolved Oxygen, Nitrate, Nutrients, PCBs (Polychlorinated biphenyls), Sediment/Siltation, Sodium, Toxicity, Turbidity, pH
San Lorenzo River	Chlordane, Chloride, Chlorpyrifos, Enterococcus, <i>E. coli</i> , Fecal Coliform, Nitrate, PCBs, Pathogens, Sedimentation/Siltation, Sodium, Water Temperature
San Lorenzo Lagoon	Pathogens
Watsonville Creek	<i>E. coli</i> , Fecal Coliform, Nitrate, Low Dissolved Oxygen, pH
Watsonville Slough	<i>E. coli</i> , Fecal Coliform, Nitrate, Low Dissolved Oxygen, Pathogens, Pesticides, Toxicity, Turbidity
Source: State Water Resources Control Board, Final 2018 Integrated Report, 303(D) Listed Waters. https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2018_integrated_report.html	

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b. Flooding and Dam Inundation

Flooding can occur during periods of excessive rainfall or as a result of wave run-up along the coast (Monterey County 2015). Flooding in steep, mountainous areas is usually confined to the stream channel and adjacent floodplain. Larger rivers typically have longer, more predictable flooding sequences and broad floodplains.

Inundation may be caused by dam failure or overtopping resulting from heavy precipitation. Dams may also fail as a result of structural damage caused by seismic events, erosion, structural design flaws, rapidly rising floodwater or landslides flowing into a reservoir. Populated areas below dams may be exposed to flood hazards resulting from dam failure. Dam failure could also pose a risk to roads, highways, public facilities, agricultural crops, or other land uses within the inundation zone (Monterey County 2015).

Monterey County

In Monterey County, substantial wave run-up can take place during storms in the Pacific Ocean between November and February, in conjunction with high tides and strong winds. Portions of Monterey County most susceptible to flooding are the Salinas Valley, the City of Seaside, the City of Monterey and the Elkhorn Slough area (Figure 4.10-1) (Monterey County 2015). Three major dams and reservoirs, as well as several small dams, are in or near Monterey County (Monterey County 2014). According to the Monterey County Multi-Jurisdictional Hazard Mitigation Plan, the three largest dams (Nacimiento, San Antonio, and Los Padres dams) have never failed or been subject to substantial damage. San Clemente Dam was removed in 2015.

Dam inundation maps show that the greatest risk from dam failure is in Carmel Valley, where failure of the Los Padres Dam would cause inundation of urbanized areas (Monterey County 2015). Dam failure in Salinas Valley would also cause substantial inundation, whether caused by the failure of San Antonio or Nacimiento Reservoir. Studies reveal that either failure would overflow the 100-year floodplain in Salinas Valley. However, the risk would predominately be to agricultural land.

San Benito County

The San Juan and Hollister Valleys in northern San Benito County are most susceptible to 100-year floods. In addition, flooding may occur from landslide blockage of canyons and, as discussed below, from dam failure (Figure 4.10-2).

San Benito County may be subject to dam inundation from three surface reservoirs within the County - Hernandez, Paicines, and San Justo - and from the Leroy Anderson Dam in neighboring Santa Clara County to the north (San Benito County 2015). The San Justo and Leroy Anderson Dams are located near urban areas. In the event of complete dam failure, water could inundate the San Juan Valley; however, the probability of such an occurrence is low (San Benito County 2015).

Santa Cruz County

The Pajaro and San Lorenzo River Valleys are subject to flooding (Santa Cruz County 2015). The Pajaro River and adjacent floodplain runs through agricultural lands within the Pajaro Valley and, downstream, through downtown Watsonville. The San Lorenzo River runs through the populated San Lorenzo Valley and into downtown Santa Cruz (Figure 4.10-3). A levee was constructed along the San Lorenzo River in Santa Cruz in 2002 which has substantially reduced the flood risk for downtown residents, merchants, and landowners (Santa Cruz County 2015).

Given their location, a major dam failure at either the Bay Street Reservoir or Newell Creek Dam could result in extensive property damage or loss of life in the San Lorenzo Valley and the City of Santa Cruz (Santa Cruz County 2015). A dam failure at either the Mill Creek, Oak Site, or Sempervirens Dams could affect people and property in northern Santa Cruz County, to the east of the community of Boulder Creek. Given the monitoring protocol at the Newell Creek and Bay Street reservoirs, the probability of dam failure is very low (Santa Cruz County 2015).

c. Tsunami and Seiche

Tsunamis are high sea waves that are caused by earthquake, submarine landslide, or other disturbances. A seiche is a temporary disturbance or oscillation in water level of a lake or partially enclosed body of water, usually caused by changes in atmospheric pressure.

Monterey County

With approximately 100 miles of Pacific Ocean coastline, Monterey County is subject to the hazard of tsunamis. In the last 200 years, eight observed tsunamis have affected Monterey County (Monterey County 2015). Most of these tsunamis were produced by earthquakes and resulted in wave run-ups of one meter or less. Coastal low lying areas and riverine valleys in northern Monterey County are highly susceptible to tsunamis. For example, areas as far inland as Castroville are susceptible to a moderate tsunami run-up (less than 21 feet), and areas as far inland as downtown Salinas and Castroville are susceptible to extreme tsunami run-ups (21 feet to 50 feet). The Monterey County Multi-Jurisdictional Hazard Mitigation Plan does not identify hazards from seiches (Monterey County 2015).

San Benito County

San Benito County is an inland county separated from the Pacific Ocean by the Coast Range and does not contain any large bodies of water. Therefore, according to the San Benito County General Plan EIR (2015), the County is not vulnerable to tsunamis or seiches.

Santa Cruz County

Some damage associated with tsunamis has occurred along the Santa Cruz County coastline, specifically from the magnitude 9.0 earthquake in Japan in 2011 (Santa Cruz County 2015). Like Monterey County, the Santa Cruz County coastline could be impacted during a tsunami event. Areas most susceptible as referenced in the Santa Cruz County Local Hazard Mitigation

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Figure 4.10-1 Monterey County Flood Map

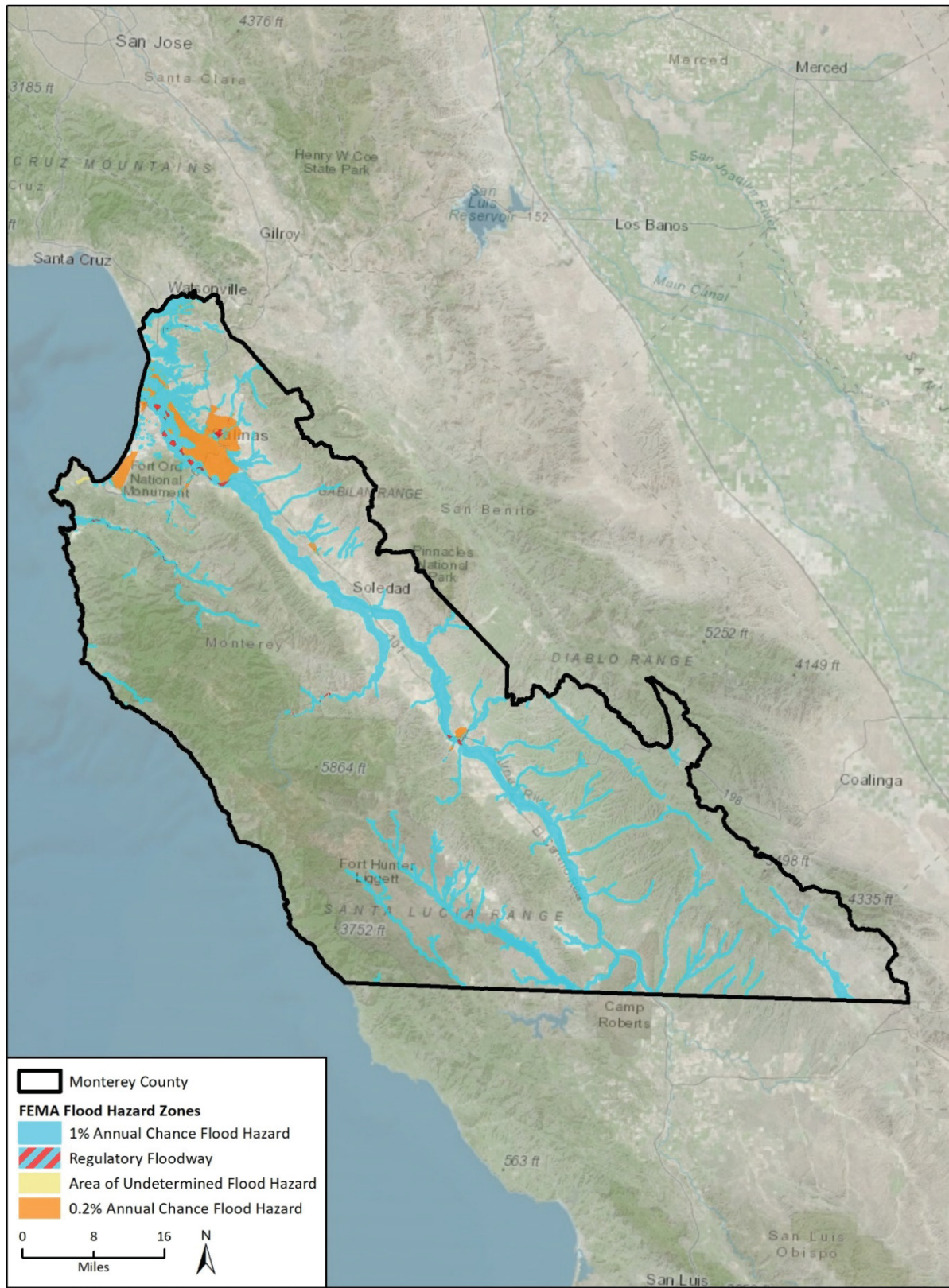
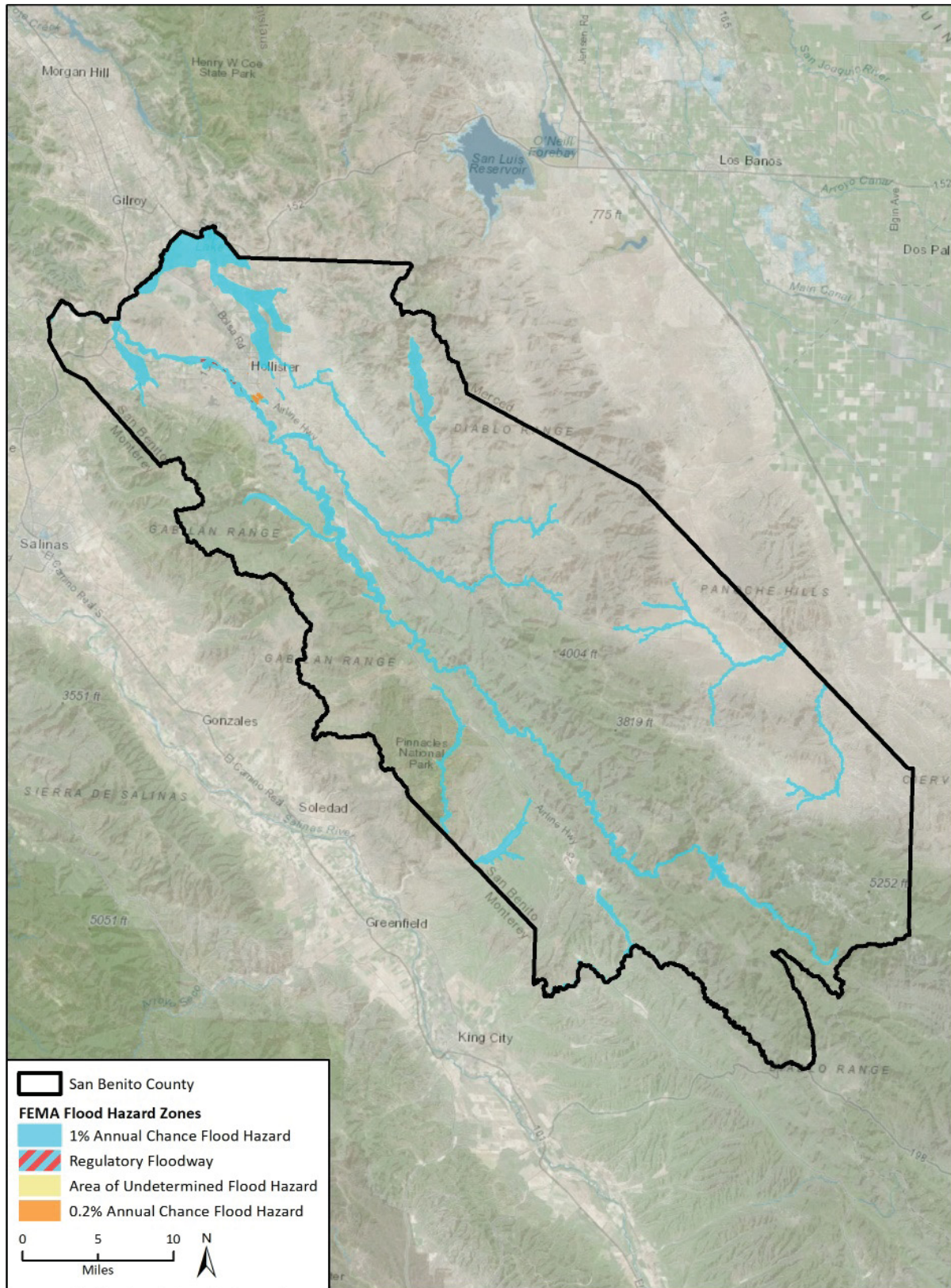


Fig 4.9-1 Monterey County Flood Map

Figure 4.10-2 San Benito County Flood Map



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Figure 4.10-3 Santa Cruz County Flood Map



Fig 4.9-3 Santa Cruz County Flood Map

Plan are in proximity to the Pajaro River mouth and low lying coastal areas between the cities of Santa Cruz and Capitola. Seiches are not identified as a geologic hazard in Santa Cruz County (Santa Cruz County 2015).

4.10.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

Clean Water Act

Congress enacted the Clean Water Act (CWA), 33 U.S.C. § 1251 et seq., formerly the Federal Water Pollution Control Act of 1972, with the intent of restoring and maintaining the chemical, physical and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain and restore water quality through the regulation of point source and non-point source discharges to surface water. Point source discharges are regulated by the NPDES permit process (CWA Section 402). NPDES permitting authority is administered by the SWRCB and nine RWQCBs. The AMBAG region is within a region administered by the Central Coast RWQCB. Section 401 of the CWA requires that any activity that would result in a discharge into waters of the U.S. be certified by the RWQCB. This certification ensures that the proposed activity does not violate State water quality standards. Section 404 of the CWA authorizes the U.S. Army Corps of Engineers to regulate the discharge of dredged or fill material to the waters of the U.S. and adjacent wetlands. Discharges to waters of the U.S. must be avoided where possible, and minimized and mitigated where avoidance is not possible. Section 303(d) of the CWA requires states to establish TMDL programs for streams, lakes and coastal waters that do not meet certain water quality standards.

Section 10 of the Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act, administered by the U.S. Army Corps of Engineers, requires permits for all structures (such as riprap) and activities (such as dredging) in navigable waters of the United States.

Coastal Zone Act Reauthorization Amendments

The Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) require coastal states to have a Coastal Nonpoint Pollution Control Program. CZARA provides state coastal management agencies regulatory control (federal consistency review authority) over all federal activities and federally licensed, permitted, or assisted activities. Additionally, CZARA requires implementation of 56 management measures to achieve and maintain water quality standards, enforceable policies and mechanisms, and monitoring and tracking of management measure implementation.

National Flood Insurance Act/Flood Disaster Protection Act

The National Flood Insurance Act of 1968 (42 U.S.C. § 4001 et seq.) made national flood insurance available for the first time. The Flood Disaster Protection Act of 1973 (42 U.S.C. §

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4001 et seq.) made the purchase of flood insurance mandatory for the protection of property located in Special Flood Hazard Areas. These laws are relevant because they led to mapping of floodplains and to local management of floodplain areas according to guidelines that include prohibiting or restricting development in flood hazard zones.

b. State Laws, Regulations, and Policies

Porter Cologne Water Quality Control Act

The Porter Cologne Water Quality Control Act of 1967 Water Code § 13000 et seq. requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect State waters. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The Water Quality Control Plan, or Basin Plan, protects designated beneficial uses of State waters through the issuance of Waste Discharge Requirements (WDRs) and through the development of TMDLs (Central Coast RWQCB 2019). Anyone proposing to discharge waste that could affect the quality of the waters of the State must obtain a waste discharge requirements (WDR) authorization from the RWQCB or SWRCB as appropriate, in compliance with Porter-Cologne.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act, mentioned above under “Groundwater”, was enacted in September of 2014, and establishes a structure for the local management of California’s groundwater resources, towards the ultimate goal of facilitating sustainable groundwater management, or the management and use of groundwater in a manner that can be maintained over a 50-year planning and implementation horizon without causing undesirable (i.e., unsustainable) results. Groundwater overdraft is a common hindrance to sustainable groundwater management, and is known to affect groundwater basins throughout the AMBAG region. SGMA establishes the key elements, presented below, which facilitate sustainable groundwater management including with consideration to historical overdraft conditions.

- Requires the establishment of a GSA for each groundwater basin in the state, subject to DWR approval, with the GSA for each respective groundwater basin or subbasin consisting of one or more local agencies with management authority over the basin(s).
- If the DWR does not approve of a proposed GSA, or if no agency steps forward or is formed to fulfill the role of GSA, this role defaults to the DWR which then assumes the GSA responsibilities, including development of a GSP for the affected basin(s).
- Requires all groundwater basins designated by the DWR as Medium- or High Priority to prepare and implement a GSP to achieve and maintain sustainable groundwater conditions for the applicable basin according to a SGMA-established timeline, which depends upon the priority ranking of the basin. In Santa Cruz, San Benito, and Monterey counties, groundwater basins are all designated as Medium- or High Priority.
- Provides for the proposed revisions, by local agencies, to the boundaries of a DWR Bulletin 118 basin, including the establishment of new subbasins.

- Provides authority for DWR to adopt regulations to evaluate GSPs and review the GSPs for compliance every 5 years.
- Requires DWR to establish BMPs and technical measures for GSAs to develop and implement GSPs.

Within the AMBAG region, the Salinas Valley Basin GSA is responsible for development and implementation of a comprehensive GSP for the Salinas Valley Groundwater Basin, inclusive of its multiple subbasins. Those subbasins which have been designated by the California Department of Water Resources (DWR) as being Medium Priority or High Priority are identified in Table 4.10-2, which also shows the status of the GSP (or Alternative GSP) development for each subbasin.

Table 4.10-2 Medium and High Prior Basins and GSP Status

Groundwater Basin Name (Basin Number)	County	SGMA Basin Prioritization	GSP Status
Santa Margarita (3-027)	Santa Cruz	Medium	Under development
Santa Cruz Mid-County (3-001)	Santa Cruz	High	GSP Approved (June 3, 2021)
Corralitos-Pajaro Valley (3-002.01)	Santa Cruz	High	Alternative GSP Approved (August 2019)
Gilroy-Hollister Valley-North San Benito (3-003.05)	San Benito	Medium	Under development
Salinas Valley-180/400 Foot Aquifer (3-004.01)	Monterey	High	GSP Approved (January 3, 2020)
Salinas Valley-Langley Area (3-004.09)	Monterey	High	Under development
Salinas Valley-East Side Aquifer (3-004.02)	Monterey	High	Under development
Salinas Valley-Monterey (3-004.10)	Monterey	Medium	Under development
Carmel Valley (3-007)	Monterey	Medium	Under development
Salinas Valley-Forebay Aquifer (3-004.04)	Monterey	Medium	Under development
Salinas Valley-Upper Valley Aquifer (3-004.05)	Monterey	Medium	Under development
Source: SGMA basin prioritization data is from Department of Water Resources 2021a. GSP status is from Department of Water Resources 2021b.			

Antidegradation Policy

California's antidegradation policy, formally known as the Statement of Policy with Respect to Maintaining High Quality Waters in California, restricts degradation of surface and ground waters. It protects waters where existing water quality is higher than necessary for the protection of beneficial uses. Any actions with the potential to adversely affect water quality must be consistent with the maximum benefit to the people of the State; not unreasonably affect present and anticipated beneficial use of the water; and not result in water quality less than prescribed in water quality plans and policies.

Cobey-Alquist Floodplain Management Act

The Cobey-Alquist Floodplain Management Act (Water Code § 8400 et seq.) gives support to the National Flood Insurance Program by encouraging local governments to plan, adopt and enforce land use regulations for floodplain management, to protect people and property from flooding hazards. The Act also identifies requirements that jurisdictions must meet to receive State financial assistance for flood control.

Caltrans Statewide NPDES Permit

The California Department of Transportation (Caltrans) was issued the nation's first statewide stormwater NPDES permit (Order 99-06-DWQ) in 1999 by the SWRCB. The Caltrans Permit requires Caltrans to regulate nonpoint source discharge from its properties, facilities and activities. The Caltrans Permit requires development of a program for communication with local agencies and coordination with other MS4 programs where those programs overlap geographically with Caltrans facilities. As part of the permit, Caltrans is required to create and annually update a Stormwater Management Plan (SWMP) that is used to outline the regulation of pollutant discharge caused by current and future construction and maintenance activities. SWMP requirements apply to discharges from Caltrans stormwater conveyances, including catch basins and drain inlets, curbs, gutters, ditches, channels, and storm drains. The SWMP must be approved by the SWRCB and, as specified in the permit, it is an enforceable document. Compliance with the permit is measured by implementation of the SWMP. Caltrans' policies, manuals and other guidance related to stormwater are intended to facilitate implementation of the SWMP.

California Green Building Standards Code

The California Green Building Standards Code (CalGreen, Cal. Code Regs. Title 24, Part 11) includes mandatory measures for residential and nonresidential development. For example, Section 4.106.2 requires residential projects that disturb less than one acre and are not part of a larger common plan of development to manage storm water drainage during construction through on-site retention basins, filtration systems and/or compliance with a stormwater management ordinance. Section 5.106.1 requires newly constructed nonresidential projects and additions of less than one acre to prevent the pollution of storm water runoff because of construction through compliance with a local ordinance or implementing BMPs that address soil loss and good housekeeping to manage equipment,

materials, and wastes. Section 5.303 sets measures for indoor water use for non-residential development requiring metering devices to conserve water.

Construction General Permit

Consistent with section 402 of the CWA, individual projects that disturb more than one acre would be required to obtain NPDES coverage under the California General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) describing Best Management Practices (BMP) the discharger would use to prevent and retain storm water runoff. The SWPPP must contain a visual monitoring program; a chemical monitoring program for “non-visible” pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a waterbody listed on the 303(d) list for sediment.

Industrial General Permit

The Industrial General Permit (Order 2014-0057-DWQ) regulates industrial stormwater discharges and authorized non-stormwater discharges from industrial facilities in California. The Industrial General Permit is called a general permit because many industrial facilities are covered by the same permit, but comply with its requirements at their individual industrial facilities. The SWRCB and RWQCBs implement and enforce the Industrial General Permit, which may impact any industrial development under the 2045 MTP/SCS land use scenario.

California Coastal Act

The California Coastal Act (Public Resources Code § 30000 et seq.) is the primary law that governs decisions of the Coastal Commission. Chapter 3 of the California Coastal Act contains Coastal Resources Planning and Management Policies. Policies include protection of certain water oriented recreational activities (Section 30220); minimizing the adverse effects of wastewater discharge, controlling runoff and preventing depletion of ground water supplies (Section 30231); and water supply and flood control through channelization, dams, or other substantial alternations (Section 30236).

c. Local Laws, Regulations, and Policies

Stormwater Discharges from Municipal Sources (MS4)

Polluted stormwater runoff is commonly transported through municipal separate storm sewer systems (MS4s), and then often discharged, untreated, into local water bodies.

An MS4 is a conveyance or system of conveyances that is:

- Owned by a state, city, town, village, or other public entity that discharges to waters of the U.S.,
- Designed or used to collect or convey stormwater (e.g., storm drains, pipes, ditches),

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- Not a combined sewer, and
- Not part of a sewage treatment plant, or publicly owned treatment works (POTW).

To prevent harmful pollutants from being washed or dumped into MS4s, certain operators are required to obtain NPDES permits and develop stormwater management programs (SWMPs). The SWMP describes the stormwater control practices that will be implemented consistent with permit requirements to minimize the discharge of pollutants from the sewer system. There are many MS4 permittees in the AMBAG region. Some examples of MS4 permittees in the region including the City of Santa Cruz, City of Capitola, City of Hollister, City of Monterey, and County of Monterey.

Local Stormwater Permit

Storm water is often considered a nuisance because it mobilizes pollutants such as motor oil and trash. In most cases, storm water flows directly to water bodies through sewer systems, contributing a major source of pollution to rivers, lakes, and the ocean. Storm water discharges in California are regulated through National Pollutant Discharge Elimination System (NPDES) permits. Cities and counties within the AMBAG region are in charge of regulating and permitting stormwater permits within their respective jurisdictions.

Monterey County

The Monterey County Code Chapter 16.14, Urban Stormwater Quality Management and Discharge, was adopted to enhance watercourses within the unincorporated Urbanized Areas by controlling the entry of urban pollutants into stormwater runoff that may enter the County storm drain system. Other goals of this chapter, under Ordinance No. 5154, § 2, 3-16-2010, include, but are not limited to: benefit the people and the environment of the County by protecting water quality in the waters within its jurisdiction, reduce the presence of pollutants in stormwater to the maximum extent practicable, and effectively prohibit non-stormwater discharges into the County storm drain system. In addition, Monterey County has adopted an Agricultural Water Conservation Plan (Ordinance 3851) requiring growers in agricultural zoned property to file plans with the Monterey County Water Resources Agency showing water conservation measures implemented during the previous year. Similarly, an ordinance requiring the filing of Urban Water Conservation Plans (Ordinance 3886) was adopted in 1996. Monterey County Code Section 16.16.050 contains provisions for flood hazard reduction. Provisions include anchoring, construction materials and methods, elevation and floodproofing and flood openings.

The Monterey County General Plan (Monterey County 2010) Conservation and Open Space Element contains goals and policies related to hydrology and water quality. Specifically, Goal OS-3 is to “prevent soil erosion to conserve soils and enhance water quality.” Related policies under Goal OS-3 are to implement BMPs (Policy OS-3.1), establish criteria to evaluate and address drainage, water quality and stream stability problems from increased stormwater

runoff (Policy OS-3.3), and regulation of activity on slopes to reduce water quality impacts (Policy OS-3.5).

Monterey County, along with the Monterey Peninsula cities of Carmel-by-the-Sea, Del Rey Oaks, Monterey, Pacific Grove, Sand City and Seaside, is a participating member of the Monterey Regional Storm Water Management Program (MRSWMP). Participating members collaborate on projects and other Permit-related activities to satisfy certain individual MS4 General Permit requirements.

Cities in Monterey County

The City of Monterey's General Plan (City of Monterey 2019), adopted in January 2005 and last amended in June 2019, contains goals, policies, and programs related to hydrology and water quality in the Housing Element. Goal b. utilizes the City's Model Urban Runoff Program to protect water quality from runoff and pollutants.

In July 2013 the City of Salinas adopted an ordinance to strengthen stormwater, water quality, and irrigation and landscaping standards. These ordinances are utilized to support Policy H-2.7 of the City's General Plan, which pertains to water conservation.

San Benito County

The San Benito County Code of Ordinances Chapter 19.17, Grading, Drainage and Erosion Control, sets forth rules and regulations to control excavation, grading, drainage and erosion, establishes the administrative procedure for issuance of permits, and provides for approval of plans and inspection of grading construction, drainage measures and erosion control methods. Pursuant to Section 19.17.011(c), in granting a grading permit, the County may attach such conditions as necessary to prevent creation of a public nuisance or hazard to public or private property. The conditions may include, but are not limited to:

- The use of check dams, cribbing, rip rap or other devices to prevent erosion;
- Application of mulching, fertilizing, watering or other methods to establish new vegetation, and stockpiling and reapplication of topsoil;
- Restricting the locations of where earth or organic material may be deposited;
- Requiring the preparation of erosion control plans indicating proposed methods for the control of runoff, erosion and sediment control;
- Requiring the preparation of revegetation plans detailing the revegetation of all exposed surfaces during development; and
- Requiring the preparation of drainage plans that include on-site retention of water to pre-development levels

Increases in peak stormwater flows are addressed in the San Benito County Code of Ordinances, Title 23 (Subdivision Ordinance), Chapter 23.31 (Improvement Designs), Article III (Storm Drainage Design Standards). These standards focus on the 100-year design storm standard for the sizing of detention basins used to provide peak flow attenuation. Chapter 15.05 of the San Benito County Code governs the utilization of water resources in the County.

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It provides for a permitting system for the extraction of groundwater as well as measures intended to protect these resources. Section 19.15 of the San Benito County Code of Ordinances contains provisions for flood hazard reduction for construction, utilities, subdivisions, recreational vehicles and manufactured homes. Specific construction standards include anchoring, elevation and floodproofing and construction materials and methods.

The San Benito County 2035 General Plan (San Benito County, 2015) Public Facilities and Services Element Goal PFS-6 is “to manage stormwater from existing and future development using methods that reduce potential flooding, maintain natural water quality, enhance percolation for groundwater recharge, and provide opportunities for reuse.” This goal is supported by policies PFS-6.1 for adequate stormwater facilities, PFS-6.2 use of best management practices, PFS-6.3 natural drainage design, PFS-6.7 runoff water quality, and PFS-6.8 Reduce Erosion and Sedimentation. The Natural and Cultural Resources Element contains Policy NCR-4 related to water resources, which is “to protect water quantity and quality in natural water bodies and groundwater basins and avoid overdraft of groundwater resources.” The goal is supported by Policy NCR-4.2 water quality tests, Policy NCR-4.5 groundwater recharge, and Policy NCR-4.7 best management practices.

San Benito County is a member of the Pajaro River Watershed Flood Prevention Authority, established in 2000, with the mission to identify, fund and implement flood prevention and control strategies in the Pajaro River Watershed.

Cities in San Benito County

The City of Hollister updated their UWMP, the 2015 Hollister Urban Area Water Management Plan, in July 2016 (City of Hollister 2016). The Hollister UWMP is a collaborative effort between the San Benito County Water District, Sunnyslope County Water District, and the City of Hollister and builds on and updates the 2010 UWMP. The Hollister UWMP covers 20 square miles of the City of Hollister and some unincorporated county lands surrounding the city.

The City of San Juan Bautista’s 2035 General Plan’s Land Use and Conservation Elements contains goals, objectives, and policies related to hydrology and water quality and supply. Objective LU 2.7 prohibits land uses for gas and oil exploration to protect groundwater supplies and water quality. Goal CO 2 aims for clean water for residents and visitors by improving groundwater quality by maintaining high potable water quality standards (Policy CO 2.1.1).

Santa Cruz County

The Santa Cruz County Code of Ordinances Chapter 7.79 sets forth rules and regulations to control runoff and pollution by protecting the surface and groundwater quality, groundwater recharge, beneficial uses, and watershed health of receiving waters of the County from discharge of pollutants. Sections 7.79.040 through 7.79.060 prohibit discharges, illicit connections and waste disposal into receiving waters. Section 7.79.100 requires BMPs for construction activities to be planned prior to issuance of a County grading permit. Chapter

16.22 of the Santa Cruz County Code of Ordinances establishes rules and regulations to eliminate and prevent the conditions of accelerated erosion. Per Section 16.22.060, prior to issuance of a building permit or development permit, an erosion control plan indicating proposed methods for the control of runoff, erosion, a sediment movement must be submitted to and approved by the County. Santa Cruz County Code of Ordinances Section 12.10.220 adopts the California Residential Building Code, which includes base flood elevation and design flood evaluation for flood resistant construction.

The Santa Cruz General Plan and Local Coastal Program (Santa Cruz County, 1994) Conservation and Open Space Chapter contains objectives and policies specific to water supply, wastewater treatment, disposal and drainage. Specifically, Objective 5.5a is “to protect and manage the watersheds of existing and future surface water supplies to preserve the quality and quantity of water produced and stored in these areas to meet the needs of County residents, local industry, agriculture and the natural environment.” The objective is implemented through Policy 5.5.3, which designates areas located within one mile of upstream intakes as water quality constraint areas; Policy 5.5.6, land division and density requirements in water supply watersheds, which requires new parcel sizes to be at least 10 acres to reduce water supply; and Policy 5.5.10, retaining undeveloped lands in watersheds to maintain water quality by minimizing development. Additionally, Objective 5.7 is “to protect and enhance surface water quality in the County’s streams, coastal lagoons and marshes by establishing best management practices on adjacent lands.” This objective is implemented through Policy 5.7.1 prohibits new development adjacent to streams and bodies of water if development would cause adverse impacts on water quality, Policy 5.7.3 erosion control and lagoon protection requires installation and maintenance of sediment basins and/or other strict erosion control measures; Policy 5.7.4 control of surface runoff requires new development to minimize the discharge of pollutants, and Policy 5.7.7 contains stormwater discharge permit requirements to maintain water quality.

Santa Cruz County and the City of Capitola have a Stormwater Management Program (2010) that builds on efforts to preserve and enhance Santa Cruz County watersheds and is the County and City’s response to the new statewide NPDES permit requirements for agencies designated by the SWRCB. Activities in the Stormwater Management Program are based on the U.S. Environmental Protection Agency (USEPA) stormwater regulations, the SWRCB General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer System (Small MS4) and the Model Urban Runoff Program (MURP).

Cities in Santa Cruz County

The City of Santa Cruz UWMP was prepared by the City of Santa Cruz Water Department in August 2016 (City of Santa Cruz 2016). The UWMP covers approximately 20 square miles including the City of Santa Cruz, a small part of the City of Capitola, adjoining unincorporated areas in Santa Cruz County, and coastal agricultural lands north of the city.

The City of Watsonville’s Growth and Conservation Strategy in their Draft 2030 General Plan Update’s goals, policies and implementation pertains to water conservation (City of Watsonville 2012). In service of Policy 2.2.4 to conserve agricultural land, “The City shall

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continue to provide for the protection of water quality and for the control of erosion” (Implementation 2.2.47). To encourage infill development (Policy 2.1.1) new development will receive the highest priority for the extension of water services (Implementation 2.1.14).

Many cities within the AMBAG region have similar hydrology and water quality goals and policies in their respective general plans.

4.10.3 Impact Analysis

a. Methodology and Significance Thresholds

Appendix G of the *State CEQA Guidelines* identifies the following criteria for determining whether a project’s impacts would have a significant impact on hydrology and water quality:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality;
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
 - a. Result in substantial erosion or siltation on- or off-site;
 - b. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
 - c. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
 - d. Impede or redirect flood flows;
4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or
5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

b. Project Impacts and Mitigation Measures

The following section describes hydrology and water quality impacts associated with the transportation projects and land use scenario included in the 2045 MTP/SCS. Table 4.10-3 summarizes the specific 2045 MTP/SCS transportation projects that could result in the flooding impacts discussed below. Due to the programmatic nature of the 2045 MTP/SCS, a precise, project level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by

the 2045 MTP/SCS could result in the hydrology and water quality impacts as described in the following sections.

Threshold 1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality

Threshold 3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
a) Result in substantial erosion or siltation on- or off-site

Impact HWQ-1 TRANSPORTATION IMPROVEMENTS AND FUTURE PROJECTS INCLUDED IN THE LAND USE SCENARIO ENVISIONED IN THE 2045 MTP/SCS WOULD NOT VIOLATE WATER QUALITY STANDARDS OR WASTE DISCHARGE REQUIREMENTS, AND WOULD NOT SUBSTANTIALLY ALTER THE EXISTING DRAINAGE PATTERN OF THE SITE OR AREA IN A MANNER WHICH WOULD RESULT IN SUBSTANTIAL EROSION OR SILTATION. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Implementation of proposed transportation improvements and future projects included in the land use scenario envisioned in the 2045 MTP/SCS would result in both short-term and long-term impacts to water quality.

Certain transportation improvements would increase overall impervious surface area throughout the AMBAG region. For example, new roadways or road widening projects would introduce pavement in areas that are currently undeveloped. Infill development projects envisioned under the land use scenario could also introduce impervious surfaces, if the infill site is currently unpaved. However, it is likely that most infill sites are already developed, thus minimizing the increase of impervious surfaces. These and other more outlying projects that would increase impervious surfaces may generate adverse impacts to surface water quality.

Pollutants and chemicals associated with urban activities would run off new roadways and other new impervious surfaces flowing into nearby bodies of water during storm events. These pollutants would include, but are not limited to: heavy metals from auto emissions, oil, grease, debris and air pollution residues. Similarly, 2045 MTP/SCS projects with landscaping may require fertilizer/pesticide application, which could enter nearby bodies of water and cause adverse effects to water quality. Such contaminated urban runoff may remain largely untreated, thus resulting in the incremental long-term degradation of water quality. Short-term adverse impacts to surface water quality may also occur during the construction periods of individual improvement projects because areas of disturbed soils would be highly susceptible to water erosion and downstream sedimentation.

This impact is of particular concern where projects are located on previously contaminated sites. Without effective erosion and storm water control, contaminated soils exposed during construction activities may result in surface water contamination. In addition, grading and vegetation removal in proximity to creeks for construction, widening and bridge repair could increase erosion and sedimentation of creek banks. This could affect both water quality and the stability of slopes along the creeks.

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As discussed in Section 4.10.2, *Regulatory Setting*, the federal CWA requires that an NPDES storm water permit be obtained for construction projects that would disturb greater than one acre. Acquisition of the General Construction permit is dependent on the preparation of a SWPPP that contains specific BMPs to control the discharge of pollutants, including sediment, into the local surface water drainages. Specific BMPs may include, but are not limited to: silt fencing, fiber rolls, trenching and silt stabilization techniques. In addition, all state projects for which Caltrans is the sponsor agency would comply with the Caltrans Statewide NPDES permit that regulates all stormwater discharges from Caltrans owned conveyances, maintained facilities and construction activities. Almost all 2045 MTP/SCS projects, especially new and extended roadways, would disturb more than one acre and would be subject to these regulations. These regulations would limit the impact of such construction projects to a less than significant level.

Construction of transportation and development projects under the 2045 MTP/SCS could also result in the change of existing drainage patterns on individual project sites or within a project area, which could impact water quality. Project grading and construction of impervious surfaces, for transportation projects may alter existing drainage patterns by altering slopes and reducing infiltration. Additionally, development projects included in the SCS land use scenario could also increase impervious surfaces and develop structures that may alter existing drainages. However, compliance with regulations would reduce impacts from project construction by requiring measures to prevent runoff and pollutants from leaving a project site.

For operational water quality control, the CWA NPDES MS4 Phase I and Phase II requirements, as discussed in Section 4.10.2, *Regulatory Setting*, require agencies and developments to implement SWMPs, which in turn require the implementation of source and treatment control measures. NPDES MS4 permittees are also required to develop and enforce ordinances and regulations to reduce the discharge of sediments and other pollutants in runoff and must verify compliance.

New development that would introduce 10,000 or more square feet of new impervious surfaces would be required under Provision C.3 of the NPDES Municipal Regional Stormwater Permit program to incorporate LID strategies such as stormwater reuse, onsite infiltration, and evapotranspiration. Some typical BMPs to meet regulatory standards for project operation include erosion control and revegetation programs, LID, alternative discharge options and integrated pest management techniques in landscaped areas. During operations and maintenance of envisioned projects, operational BMPs would result in compliance with applicable stormwater runoff discharge permits. In addition, consistent with the Post-Construction Stormwater Management Requirements for development projects in the central coast region (February 2013), post project stormwater flows from a project site are required to be the same or less than pre-project stormwater flows. Based on compliance with these requirements, land use development patterns included in the 2045 MTP/SCS would not result in impacts to the local stormwater system.

Likewise, some transportation projects would also increase impervious surface area compared to existing conditions, such as transportation projects that involve adding new or

additional travel lanes to paved roads. Depending on the location and design specific to transportation projects included in the 2045 MTP/SCS, stormwater runoff may be captured in existing storm drain systems and conveyed to local or regional wastewater treatment facilities. Additionally, roadways, such as state highways are often adjacent to pervious surfaces, such as gravel shoulders, agricultural fields, or other unpaved surfaces. Runoff from the roadway surface is able to flow overland into these pervious areas and infiltrate the ground, reducing impacts to the local stormwater system.

The land use pattern included in the 2045 MTP/SCS would generate new sources of wastewater, which would also be conveyed to wastewater treatment facilities in the region for secondary or tertiary treatment. Discharges of treated wastewater, also called effluent, from the treatment plants are regulated by the RWQCB and must meet water quality effluent limitations established in the NPDES permit issued by the RWQCB for the treatment plant. Thus, although implementation of the 2045 MTP/SCS would increase the volume of point-source wastewater discharges in the AMBAG region, required compliance and monitoring of effluent prior to discharge from treatment facilities would ensure impacts would be less than significant.

Development under the 2045 MTP/SCS would not substantially degrade water quality or violate water quality standards because compliance with state regulation such as NPDES and MS4 permits would require implementation of BMPs and development to reduce discharge of runoff and maintain water quality. In addition, local ordinances require measures such as erosion control reduce the discharge of pollutants into storm drain systems. Although individual projects included in the 2045 MTP/SCS have the potential to adversely affect water quality at a project specific level, projects would adhere to existing regulations related to water quality. Therefore, water quality impacts would be less than significant.

Mitigation Measures

None required.

Threshold 2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin

Threshold 5: Conflict with or obstruct implementation of a sustainable groundwater management plan

Impact HWQ-2 TRANSPORTATION IMPROVEMENTS AND FUTURE PROJECTS INCLUDED IN THE LAND USE SCENARIO ENVISIONED IN THE 2045 MTP/SCS WOULD NOT SUBSTANTIALLY DEplete GROUNDWATER SUPPLIES OR INTERFERE SUBSTANTIALLY WITH GROUNDWATER RECHARGE SUCH THAT SUSTAINABLE GROUNDWATER MANAGEMENT OF THE BASIN WOULD BE IMPEDED OR CONFLICTS WITH SUSTAINABLE GROUNDWATER MANAGEMENT PLANS WOULD RESULT. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Groundwater recharge rates and patterns may be affected by development that increases the extent of impermeable surfaces, such as concrete and asphalt, which inhibit the infiltration of surface water runoff to the subsurface. As a result, the volume and velocity of

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surface water runoff across the new impermeable surfaces also increases. These effects can be reduced through the implementation of low impact development (LID) features, which include systems and practices designed to simulate natural processes of runoff and infiltration. Such features may include but are not limited to vegetated swales, permeable paving, and landscaping incorporated into the design of a proposed project to reduce the adverse effects associated with new impervious surfaces by facilitating the infiltration of surface runoff to the subsurface.

The 2045 MTP/SCS encourages infill development within urbanized areas of the AMBAG region, and the land development envisioned by the 2045 MTP/SCS could interfere with groundwater recharge by increasing the extent of impervious surfaces already present in this area. Urbanized areas are typically characterized by extensive impervious surfaces such as buildings and paved roads; as such, infill development would have minimal potential to further alter the rates and patterns of groundwater recharge to the overall basin. However, infill as well as any outlying development on currently unpaved sites would result in a net increase of impervious surfaces in the area and could have associated impacts on site specific runoff and infiltration patterns.

Land Use

As development under the 2045 MTP/SCS occurs, site specific drainage features would be designed to retain, capture, and convey increased runoff in accordance with the city or county design standards and State requirements, such as the NPDES Provision C.3 site control features discussed under Impact W-1, above. Compliance with these standards and regulations typically includes the use of LID features which, as described above, are designed to simulate natural processes of runoff and infiltration to minimize or avoid potential adverse effects associated with new development.

Transportation

In addition to the development that would occur under the 2045 MTP/SCS, transportation projects would also increase the extent of impervious surfaces. Many of the planned transportation projects, such as the addition of new lanes to existing roads or highways, would have negligible effect on the overall extent of impervious surfaces, as they would occur in areas already characterized by paved surfaces. For example, the Rio Road Parking Facility (MON-CAR005-CM) in Monterey County could affect groundwater supplies by incrementally reducing groundwater recharge potential. This reduction in groundwater recharge could occur because the impermeable surfaces associated with the proposed improvements would increase surface water runoff within existing rights-of-way at the expense of natural infiltration. As with the infill development discussed above, transportation projects would also be implemented with project specific drainage plans for new features would be designed to retain, capture, and convey runoff in accordance with the city or county design standards, where applicable, and federal and State requirements.

Sustainable Groundwater Management

Activities would be implemented under California regulations governing use of groundwater, including SGMA, as well as groundwater provisions of applicable local general plans. Taken as a whole, these regulations are intended to reduce groundwater use and subsequent overdraft of groundwater basins. As described above, the Medium- and High-Priority basins in the AMBAG region are being managed by DWR-approved GSPs, each of which is responsible for developing a GSP for its respective basin(s), or have submitted an existing management plan that meets all the requirements of a GSP, for DWR's consideration to approve as an Alternative GSP for compliance with SGMA. The GSPs are required to provide mechanisms that allow the sustainable use of groundwater, with growth projections considered. Compliance with groundwater sustainability plans and SGMA requirements as described in Section 4.14.2 would reduce impacts to groundwater basins, and the 2045 MTP/SCS would not conflict with or obstruct implementation of sustainable groundwater management plans.

Summary

Existing regulatory requirements at the local, State, and federal level include measures to minimize any increases in off-site stormwater runoff by encouraging on-site infiltration, which would effectively minimize the potential reduction in groundwater recharge to an acceptable level. In addition, implementation of projects under the 2045 MTP/SCS would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin would be impeded. Therefore, impacts of the proposed 2045 MTP/SCS to groundwater supply and recharge, as well as sustainable groundwater management and sustainable groundwater management plans, would be less than significant.

Mitigation Measures

None required.

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Threshold 3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

- b) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site
- c) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff

Impact HWQ-3 TRANSPORTATION IMPROVEMENTS AND FUTURE PROJECTS INCLUDED IN THE LAND USE SCENARIO ENVISIONED IN THE 2045 MTP/SCS WOULD NOT SUBSTANTIALLY ALTER EXISTING DRAINAGE PATTERNS SUCH THAT THEY WOULD SUBSTANTIALLY INCREASE THE RATE OR AMOUNT OF SURFACE RUNOFF OR CREATE OR CONTRIBUTE RUNOFF WATER WHICH WOULD EXCEED THE CAPACITY OF STORMWATER DRAINAGE SYSTEMS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Implementation of proposed transportation improvements and future projects included in the land use scenario envisioned in the 2045 MTP/SCS may increase stormwater flows, resulting in increased volume and/or velocity of stormwater runoff. Potential increases in stormwater volume and/or velocity could result in on- or off-site flooding. However, planned transportation and land use projects would be designed to comply with existing State and local jurisdiction requirements, including applicable municipal code sections related to stormwater runoff and drainages, such as curb and gutter design, and would build drainage infrastructure to control and accommodate the increase in stormwater flows. As discussed in Section 4.10.2, *Regulatory Setting*, these ordinances include the Monterey County Code Chapter 16.14 to control the entry of urban pollutants into stormwater runoff; San Benito County Code of Ordinances Chapter 19.17 to regulate the control of excavation, grading, drainage and erosion; and Santa Cruz County Code of Ordinances Chapter 7.79 to control runoff and pollution by protecting the surface and groundwater quality and groundwater recharge of receiving waters of the County from discharge of pollutants. Compliance with local ordinances would control runoff via drainage basins, silt fencing, vegetation erosion control and other measures to reduce runoff into stormwater drainage systems.

Construction of land use and transportation projects under the 2045 MTP/SCS could temporarily disturb underlying soils and could result in exposure of soil to runoff. Without precautions, construction activities could produce pollutants in stormwater runoff. Compliance with NPDES permits and other local ordinances described above would control erosion and sedimentation as a result of urban development. Land use projects near the coast would be subject to additional permitting under the California Coastal Act.

Land use projects under the 2045 MTP/SCS would implement post-construction drainage control measures for compliance with the NPDES MS4 permit, which would include implementation of LID features. These measures may include incorporation of permeable paving, vegetated swales, infiltration retention basins and other features that would minimize stormwater runoff that could carry urban pollutants. During operation of the 2045

MTP/SCS transportation projects, nonpoint source pollution would be minimized through the maintenance of LID features, and through compliance with the NPDES MS4 permit. In addition, potentially adverse impacts associated with nonpoint source pollution would be minimized through project compliance with Caltrans guidelines for preparation of a hydraulic study if modifications are made to California State highways that intercept a waterway or encroach on a floodplain. Further, transportation projects are subject to construction and non-construction runoff prevention through local and State regulation.

Due to compliance with existing regulations related to stormwater management and nonpoint source pollution control, alterations of drainage patterns caused by 2045 MTP/SCS transportation and land use projects would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding, or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Impacts would be less than significant.

Mitigation Measures

None required.

Threshold 3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

d) Impede or redirect flood flows

Threshold 4: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation

Impact HWQ-4 TRANSPORTATION IMPROVEMENTS AND FUTURE PROJECTS INCLUDED IN THE LAND USE SCENARIO ENVISIONED IN THE 2045 MTP/SCS WOULD NOT SUBSTANTIALLY ALTER DRAINAGE PATTERNS IN A MANNER WHICH WOULD IMPEDE OR REDIRECT FLOOD FLOWS, OR RISK RELEASE OF POLLUTANTS DUE TO PROJECT INUNDATION IN FLOOD HAZARD, TSUNAMI, OR SEICHE ZONES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2045 MTP/SCS would be subject to flooding hazards due to altered drainage patterns that could impede or redirect flood flows and risk release of pollutants due to increased inundation from storm events, sea level rise due to climate change and/or dam failure.

Redirecting Flood Flows

Transportation projects and land use development envisioned in the 2045 MTP/SCS would occur primarily outside of 100-year flood plains. For example, much of the land use development envisioned in the 2045 MTP/SCS would occur in already urbanized areas that are not subject to flood events. However, some development could occur in floodplains, and because transportation projects are sometimes linear, they could also cross floodplain areas.

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The transportation projects and land development would have the potential to alter existing drainage patterns within the flood plain. In accordance with federal, State, and local stormwater management regulations, new construction must maintain pre-project hydrology. Local ordinances generally provide prescriptive requirements related to infrastructure capacity and design and limit the potential for development to increase off-site flows. All projects that would disturb one acre or more would be subject to Central Coast RWQCB requirements that prevent increases in runoff flows from new development and redevelopment projects. The required LID drainage control measures may, in some cases, result in improved retention of stormwater rates and volumes compared to existing conditions.

Any developments proposed within the 100-year flood zone would be required to meet local, State, and federal flood control design requirements. Implementing agencies would conduct or require project-specific hydrology studies for projects proposed to be constructed within floodplains to demonstrate compliance with Executive Order 11988 (for federally funded projects), the NFIP, the National Flood Insurance Act, and the Cobey-Alquist Floodplain Management Act, as well as any further FEMA or State requirements that are adopted at the local level. These studies would identify project design features that reduce impacts on either floodplains or flood flows that would be required through the permitting process. With these floodplain development requirements, continuing flood protection programs, and the drainage requirements described above, impacts related to impeding or redirecting flood flows would be less than significant.

Risk Release of Pollutants due to Project Inundation

Low lying coastal areas in northern Monterey County and southern Santa Cruz County are susceptible to impacts from tsunamis and could result in the release of pollutants due to inundation from tsunamis. As shown in Table 4.10-3, specific transportation projects programmed in the 2045 MTP/SCS for these areas include the Monterey Bay Sanctuary Scenic Trail Network and Highway 1/Harkins Slough Road Interchange. Hazardous pollutants are not manufactured or stored on trails or roadways/interchanges. Therefore, inundation of these types of transportation projects would not result in the release of pollutants into the environment.

In addition, development projects located at low elevations near the coast would be susceptible to tsunamis. According to the Monterey County Multi-Jurisdictional Hazard Mitigation Plan (2015), over the last 200 years there have been eight observed tsunamis in the region. Most of these tsunamis were produced by earthquakes and resulted in wave run-ups of one meter or less. Therefore, the likelihood that the region will experience a tsunami has been estimated to be high, averaging one- to 11-foot wave run-ups for coastal and low lying areas (Monterey County 2015). In 2011, the 9.0 earthquake in Japan caused a tsunami in the AMBAG region resulting in damage in both Monterey and Santa Cruz counties (Santa Cruz County 2015). Given the high likelihood for tsunami hazards in the region and the potential for land use development included in the 2045 MTP/SCS to be located near the

coast, development under the 2045 MTP/SCS would occur in areas subject to tsunami hazards.

The Monterey County General Plan (Monterey County 2010) Safety Element contains goals and policies to reduce the risk of hazards resulting from seismic activity, including tsunamis. Specifically, Policy S-1.6 requires new development to be prohibited in areas of known geologic or seismic hazards unless measures recommended by a California certified engineering geologist or geotechnical engineer are implemented to reduce the hazard. Policy S-5-15 identifies tsunami evacuation routes as any routes in an incorporated or unincorporated area leading inland away from the coastline to elevations 20 feet or higher. The Santa Cruz General Plan and Local Coastal Program (Santa Cruz County, 1994) Public Safety and Noise Chapter serves to reduce the risk of hazards resulting from seismic, flood and fire hazards. Specifically, Policy 6.1.5 requires the location and/or clustering of development away from potentially hazardous areas when feasible and condition development permits based on the recommendations of the site's Hazard Assessment or other technical reports. Policy 6.4.3 allows development in areas immediately adjacent to coastal bluffs and beaches only if a geologist determines that wave action, storm swell and tsunami inundation are not a hazard to the proposed development or that the hazard can be adequately mitigated. Because these policies limit development in tsunami zones, they also limit the amount of hazardous materials that would be stored in areas subject to tsunami.

While there are general plan policies applicable to the AMBAG region that prohibit or limit development in areas subject to development, development would occur in inundation zones given that several cities and unincorporated areas in the AMBAG region are coastal, located on the Monterey Bay. The types of development that would be most likely to result in release of pollutants during inundation include uses such as wastewater treatment plants, chemical manufacturing plants, or hazardous materials landfills. Generally, the 2045 MTP/SCS envisions land development in already urbanized areas where wastewater treatment plants, landfills, and chemical manufacturing plants already exist to serve existing development.¹ Accordingly, the land use development envisioned in the 2045 MTP/SCS would not substantially increase the risk of release of pollutants into the environment as a result of inundations. Impacts would be less than significant.

Seiche

As described in Section 4.10.1, *Setting*, seiches are not identified as a hazard in the AMBAG region. Therefore, no impacts related to seiches would result.

Mitigation Measures

None required.

¹ Wastewater treatment plants in the AMBAG region include the Monterey One Water Treatment Plant, The City of San Juan Bautista Wastewater Treatment Plant, and the City of Santa Cruz Wastewater Treatment Plant. Landfills in the AMBAG region include the Johnson Canyon Sanitary Landfill in Monterey County, the John Smith Landfill in San Benito County, and the Buena Vista Landfill in Santa Cruz County. Chemical manufacturing plants are located throughout the Monterey County, San Benito County, and Santa Cruz County areas.

Threshold 5: Conflict with or obstruct implementation of a water quality control plan

Impact HWQ-5 TRANSPORTATION IMPROVEMENTS AND FUTURE PROJECTS INCLUDED IN THE LAND USE SCENARIO ENVISIONED IN THE 2045 MTP/SCS WOULD NOT CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF A WATER QUALITY CONTROL PLAN. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Implementation of proposed transportation improvements and future projects included in the land use scenario envisioned in the 2045 MTP/SCS would require new and modified uses of water supply in the AMBAG region. However, the transportation improvements included in the 2045 MTP/SCS would not conflict with the beneficial uses for water identified in the Water Quality Control Plan for the Central Coast Basin (CCRWQCB 2019). For example, transportation improvements would not interfere with the beneficial use of water for municipal and domestic supplies, agricultural supply, or wildlife habitat supply. Likewise, the land use scenario envisioned in the 2045 MTP/SCS would not obstruct or conflict with beneficial uses of water in the water quality control plan. The land use scenario in the 2045 MTP/SCS focuses on infill development and locating people and employment near transit. The infill characteristics of the land use scenario would generally be consistent with the past use of water in these areas, supportive of the beneficial uses identified in the water quality control plan, such as municipal and domestic supplies.

The water quality control plan also includes groundwater recharge as a beneficial use. Groundwater recharge is typically achieved through infiltration of precipitation into the ground, as well as other methods such as direct injection of water into groundwater aquifers. The replacement of pervious ground with impervious surface can prevent infiltration and reduce groundwater recharge. Certain transportation improvements would increase overall impervious surface area throughout the AMBAG region. For example, new roadways or road widening projects would introduce pavement in areas that are currently undeveloped. Depending on the location and design specific to transportation projects included in the 2045 MTP/SCS, stormwater runoff may be captured in existing storm drain systems and conveyed to local or regional wastewater treatment facilities. Additionally, roadways, such as state highways are often adjacent to pervious surfaces, such as gravel shoulders, agricultural fields, or other unpaved surfaces. Runoff from the roadway surface is able to flow overland into these pervious areas and infiltrate the ground, reducing impacts to the local stormwater system and preventing conflicts with the water quality control plan beneficial use for groundwater recharge. Infill development projects envisioned under the land use scenario could also introduce impervious surfaces, if the infill site is currently unpaved. However, it is likely that most infill sites are already developed, thus minimizing the increase of impervious surfaces. Therefore, conflicts with groundwater recharge beneficial use would be generally avoided.

The water quality control plan also includes water quality objectives for both ocean waters and inland waters and estuaries. Examples of some of the water quality objectives for ocean waters include maintaining acceptable pH levels and dissolved oxygen levels. Examples of water quality objectives for inland waters include taste and odor standards, coloration standards, oil and grease contamination, dissolved oxygen, temperature, chemical

constituents, and pesticides. As described above in Impact HWQ-1, implementation of the 2045 MTP/SCS could result in contamination of stormwater runoff. For example, 2045 MTP/SCS projects with landscaping may require fertilizer/pesticide application, which could enter nearby bodies of water. If enough pesticides reach nearby waters, a violation of the pesticide water quality objective could occur, conflicting with the water quality control plan. Another example is construction of projects envisioned in the 2045 MTP/SCS, which could result in erosion and violated of coloration, turbidity, and dissolved solids water quality standards in the water quality control plan. As discussed in Section 4.10.2, *Regulatory Setting*, the federal CWA requires that an NPDES storm water permit be obtained for construction projects that would disturb greater than one acre. Acquisition of the General Construction permit is dependent on the preparation of a SWPPP that contains specific BMPs to control the discharge of pollutants, including sediment, into the local surface water drainages. Specific BMPs may include, but are not limited to: silt fencing, fiber rolls, trenching and silt stabilization techniques. In addition, all state projects for which Caltrans is the sponsor agency would comply with the Caltrans Statewide NPDES permit that regulates all stormwater discharges from Caltrans owned conveyances, maintained facilities and construction activities. Almost all 2045 MTP/SCS projects, especially new and extended roadways, would disturb more than one acre and would be subject to these regulations. These regulations would limit the potential impact of such construction projects to a less than significant level and avoid conflicts with the applicable water quality control plan. For operational water quality control, the CWA NPDES MS4 Phase I and Phase II requirements, as discussed in Section 4.10.2, *Regulatory Setting*, require agencies and developments to implement SWMPs, which in turn require the implementation of source and treatment control measures. NPDES MS4 permittees are also required to develop and enforce ordinances and regulations to reduce the discharge of sediments and other pollutants in runoff and must verify compliance.

New development that would introduce 10,000 or more square feet of new impervious surfaces would be required under Provision C.3 of the NPDES to incorporate LID strategies such as stormwater reuse, onsite infiltration, and evapotranspiration, as discussed above for Impact HWQ-1. In addition, consistent with the Post-Construction Stormwater Management Requirements for development projects in the central coast region (February 2013), post project stormwater flows from a project site are required to be the same or less than pre-project stormwater flows. Based on compliance with these requirements, land use development patterns included in the 2045 MTP/SCS would not result in impacts to the local stormwater system. By ensuring the local stormwater system is maintained and functional, adverse effects to water quality would be avoided. Thus, potential conflicts with the applicable water quality control plan would be avoided.

The land use pattern included in the 2045 MTP/SCS would generate new sources of wastewater, which would also be conveyed to wastewater treatment facilities in the region for secondary or tertiary treatment. Discharges of treated wastewater, also called effluent, from the treatment plants are regulated by the RWQCB and must meet water quality effluent limitations established in the NPDES permit issued by the RWQCB for the treatment plant. Thus, although implementation of the 2045 MTP/SCS would increase the volume of point-

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source wastewater discharges in the AMBAG region, required compliance and monitoring of effluent prior to discharge from treatment facilities would ensure impacts would be less than significant.

Development under the 2045 MTP/SCS would not substantially degrade water quality or violate water quality standards because compliance with state regulation such as NPDES and MS4 permits would require implementation of BMPs and development to reduce discharge of runoff and maintain water quality. In addition, local ordinances require measures such as erosion control reduce the discharge of pollutants into storm drain systems. Although individual projects included in the 2045 MTP/SCS have the potential to adversely affect water quality at a project specific level, projects would adhere to existing regulations related to water quality. Therefore, impacts related to conflicts with a water quality control plan (the Central Coast RWQCB Basin Plan) would be less than significant.

Mitigation Measures

None required.

c. Specific MTP/SCS Projects that May Result in Impacts

All 2045 MTP/SCS transportation projects that require new construction or landscaping would result in impacts as discussed in impacts HWQ-1 through HWQ-3; and therefore, are not specifically identified in table format below. The 2045 MTP/SCS projects are listed in Appendix B. Table 4.10-3 identifies examples of transportation projects with the potential to result in flooding impacts as discussed in Impact HWQ-4. These projects are representative and were selected based on their potential scope and likelihood of resulting in flooding impacts. Additional specific analysis would be required as individual projects are implemented to determine the project specific magnitude of impact.

Table 4.10-3 2045 MTP/SCS Projects that May Result in a Flooding Impact

AMBAG Project No.	Projects	Location	Impact
MON-GRN016-GR	Elm Avenue Bike Lanes	Greenfield	HWQ-4
MON-KCY039-CK	1st Street Bike Lanes	King City	HWQ-4
MON-CT022-CT	SR 156 – Corridor Widening Project	Monterey County	HWQ-4
MON-SNS029-SL	John Street – U.S. 101	Salinas	HWQ-4
MON-SNS037-SL	Main Street (North) Widening	Salinas	HWQ-4
MON-SNS094-SL	Hemingway Drive Extension	Salinas	HWQ-4
MON-KCY053-CK	King City Multimodal Transit Station	King City	HWQ-4
SB-CT-A01	SR 156 Widening – San Juan Bautista to Union Road	San Juan Bautista	HWQ-4
SB-SBC-A50	Hospital Road Bridge	Hollister	HWQ-4
SB-SBC-A65	San Benito River Recreational Trail Phase 1	San Benito	HWQ-4
SB-SBC-A52	Union Road Bridge	Hollister	HWQ-4
SC-WAT-O1A-WAT	Highway 1/Harkins Slough Road Interchange: Bicycle/Pedestrian Bridge	Watsonville	HWQ-4
SC-WAT-P65-WAT	Upper Struve Slough Trail	Watsonville	HWQ-4
SC 25SC	Highway 1 and Highway 9 Intersection Modifications	Santa Cruz	HWQ-4
SC-RTC 27a-RTC	Monterey Bay Sanctuary Scenic Trail Network	Santa Cruz	HWQ-4

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4.11 Land Use

This section evaluates impacts of the proposed 2045 MTP/SCS associated with physically dividing an established community and causing a significant environmental impact due to a conflict with a land use plan, policy, or regulation.

4.11.1 Setting

a. Land Use Patterns

The AMBAG region is comprised of Monterey, San Benito, and Santa Cruz counties. These counties are located along the Central Coast of California and generally surround Monterey Bay. Monterey Bay is located south of the San Francisco Bay area and north of San Luis Obispo County. San Mateo and Santa Clara counties are located to the north; Merced and Fresno counties are located to the east. Monterey County shares a short border segment with Kings County to the southeast.

The combined area encompasses approximately 3.3 million acres, incorporating the Pajaro and Salinas River Valleys, adjacent coastal lowland and surrounding mountains. Terrain within the region is varied. The Santa Cruz, Gabilan and Santa Lucia mountain ranges and the Diablo range are located along the eastern border of the AMBAG region. The highest elevation is the Junípero Serra Peak (5,865 feet above sea level), located in Monterey County. AMBAG's planning area is predominantly rural with urban development clustered along the Monterey Bay coastline and in agricultural inland valleys. A summary of the land use setting for each county is described below.

Monterey County

Monterey County encompasses 2.1 million acres and is predominantly rural except for 12 incorporated cities; Carmel-by-the-Sea, Del Rey Oaks, Gonzales, Greenfield, Pacific Grove, Marina, Monterey, Salinas, Seaside, Sand City, Soledad, and King City. Agriculture is the largest land use in Monterey County representing approximately 60 percent (1.27 million acres) of the total land area. The second largest land use consists of public and quasi-public land uses such as parks, military facilities, recreational and community facilities, which makes up 24 percent (about 508,800 acres) of the total land area. Approximately 5 percent (about 106,000 acres) of Monterey County, including the incorporated cities, is developed with residential, commercial, and industrial land use categories; of the unincorporated county, approximately one percent is developed. The remaining 11 percent (about 233,200 acres) is in resource conservation or other miscellaneous land uses. Most of the urban development is concentrated in the northern third of the county, near the incorporated cities of Salinas, Marina and Monterey (Monterey County 2010a).

The Monterey County Coastal Zone is depicted in Figure 4.11-1 and includes portions of the cities of Carmel-by-the-Sea, Marina, Monterey, Pacific Grove, Sand City, and Seaside. Tribal land is also included within Monterey County, notably, the Esselen Tribe of Monterey

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Figure 4.11-1 Monterey and Santa Cruz County Coastal Zone



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Additional data provided by USGS, 2021.

County owns approximately 1,199 acres of land along the Little Sur River in Big Sur (The Mercury News 2020). Land is also used for military and university uses within Monterey County. Monterey County is the location for California State University, Monterey Bay, the Naval Postgraduate School, Fort Hunter Liggett, and the Presidio of Monterey. Protected open spaces in Monterey County are shown in Figure 4.11-2.

Santa Cruz County

Santa Cruz County encompasses approximately 285,000 acres and is predominantly rural except for four incorporated cities and the urbanized unincorporated area surrounding them: Scotts Valley, Santa Cruz, Capitola, and Watsonville. Agriculture represents approximately 14 percent of the total land area (40,000 acres). Residential land is approximately 4 percent (11,428 acres) of the land area; developed non-residential uses comprise approximately 1.5 percent (4,285 acres). Parks, recreation, and open space comprise 1.4 percent (4,000 acres); miscellaneous uses comprise 3.6 percent (10,286 acres) of the land area. The remaining acreage is undeveloped (Santa Cruz County 2013b). Land use within Santa Cruz County is also reserved for university use, notably, the University of California, Santa Cruz. The Santa Cruz Local Coastal Zone is depicted in Figure 4.11-1 and includes portions of the cities of Capitola, Santa Cruz, and Watsonville. Protected open space in Santa Cruz County is shown in Figure 4.11-3.

San Benito County

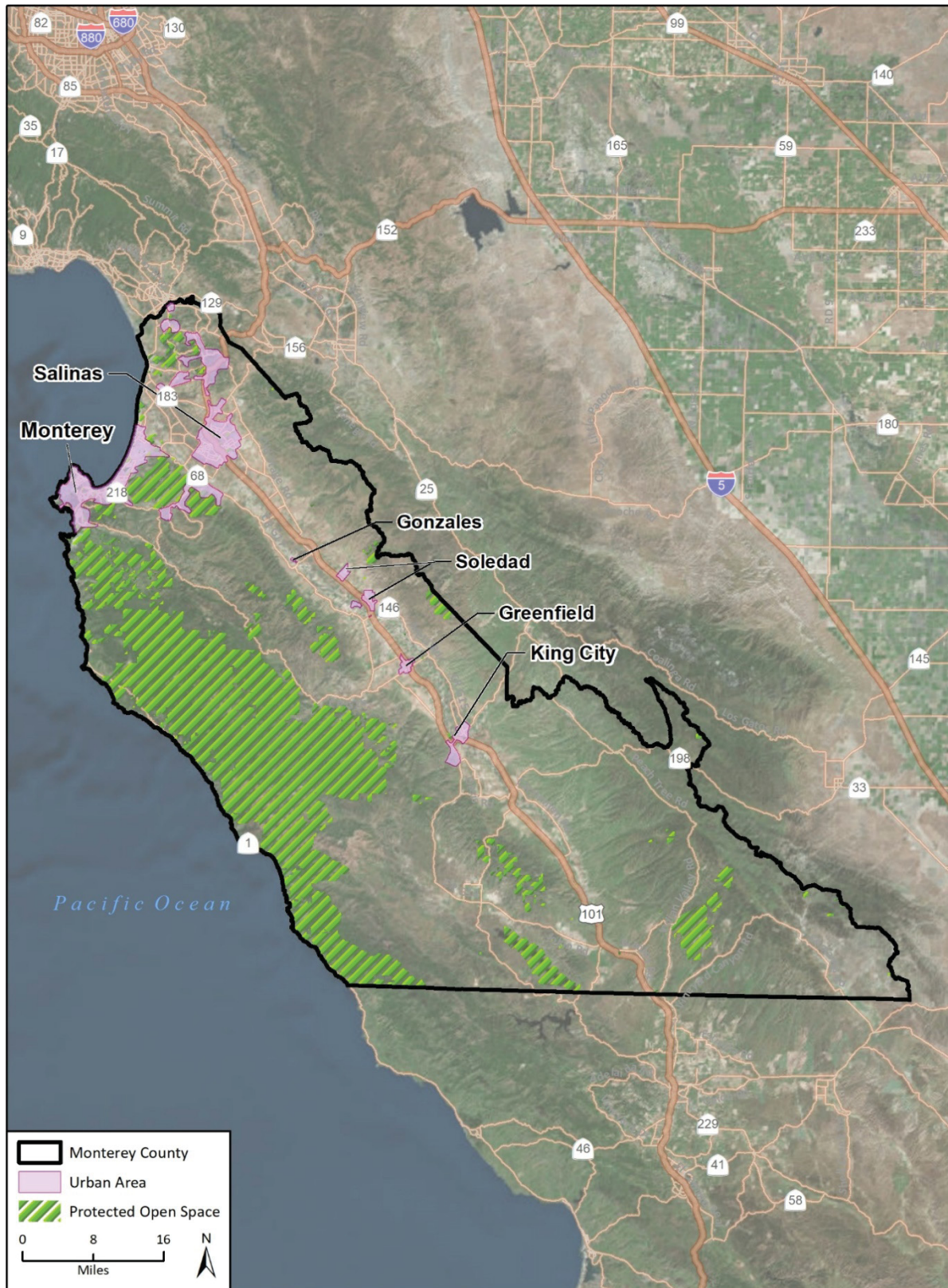
San Benito County encompasses approximately 890,000 acres and is predominantly rural except for the incorporated cities of San Juan Bautista and Hollister. Agriculture, which includes grazing, is the predominant land use in the unincorporated county, totaling approximately 734,826 acres (83.2 percent). Of the remainder, 78,931 acres (8.9 percent) is owned by city, State and Federal governments. Residential land accounts for only 9,668 acres (1.1 percent) of existing land use in the unincorporated county. Remaining lands are undeveloped (San Benito County 2015a). Protected open space in San Benito County is depicted in Figure 4.11-4.

4.11.2 Regulatory Setting

There are numerous State and local laws, regulations, policies, programs, plans, codes, and ordinances that regulate land use in the AMBAG region. Local land use changes are regulated by the general plans, specific plans, and zoning ordinances of the counties of Monterey, San Benito and Santa Cruz and the cities within each county. City and unincorporated county land which lies within the California Coastal Zone is subject to provisions outlined in each jurisdiction's Local Coastal Program (LCP) as mandated by the California Coastal Act. The Coastal Zone generally consists of all land 1,000 yards inland from the mean high tide line. The LCPs consist of coastal land use plans, zoning and other implementing actions needed to comply with the Coastal Act and include land use regulations related to housing, coastal access, public works and all types of transportation infrastructure and facilities.

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Figure 4.11-2 Protected Open Space in Monterey County



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Additional data provided by CPAD, 2019.

Fig 4.10-2 Protected Open Space in Monterey County

Figure 4.11-3 Protected Open Space in Santa Cruz County

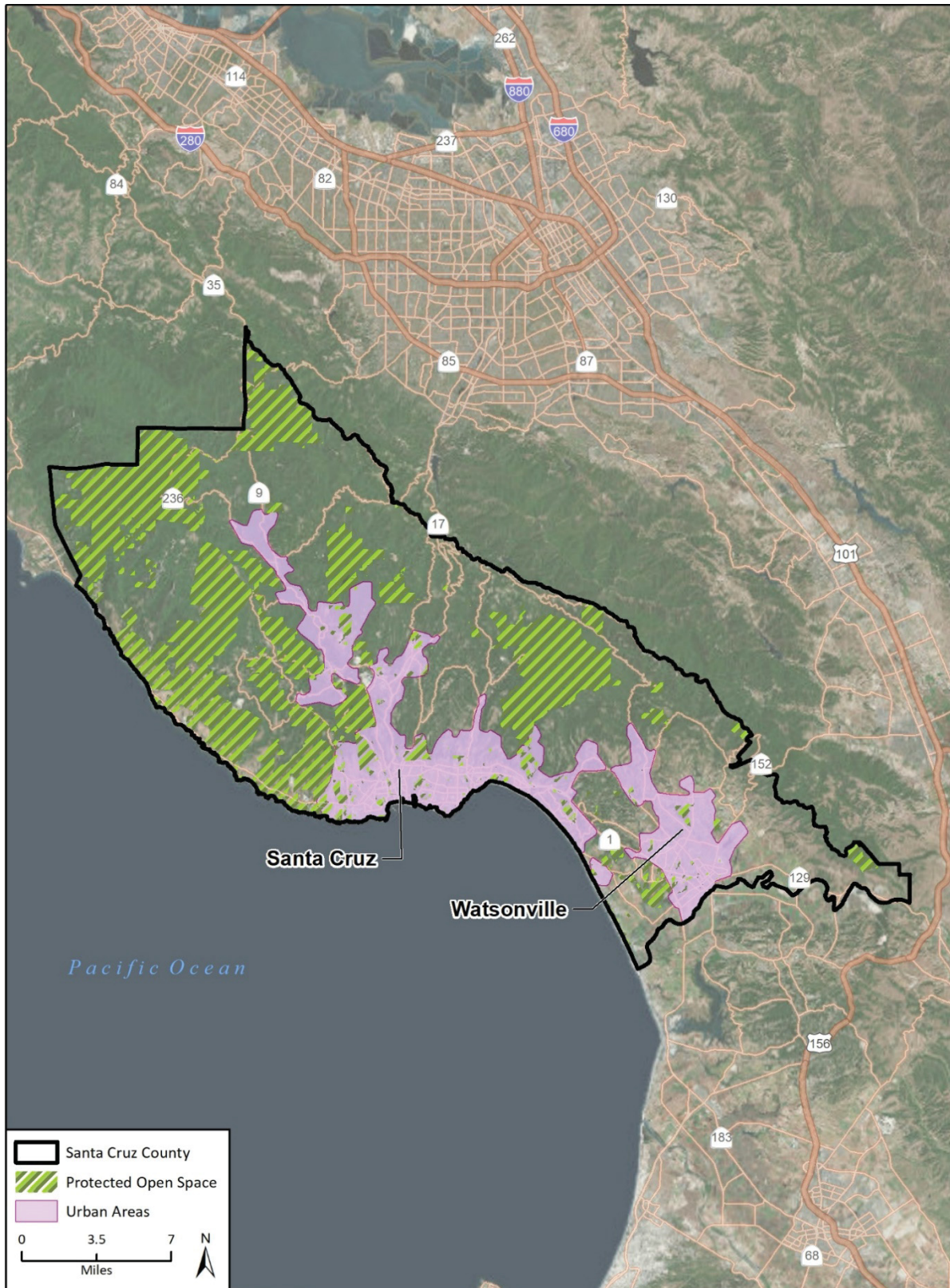
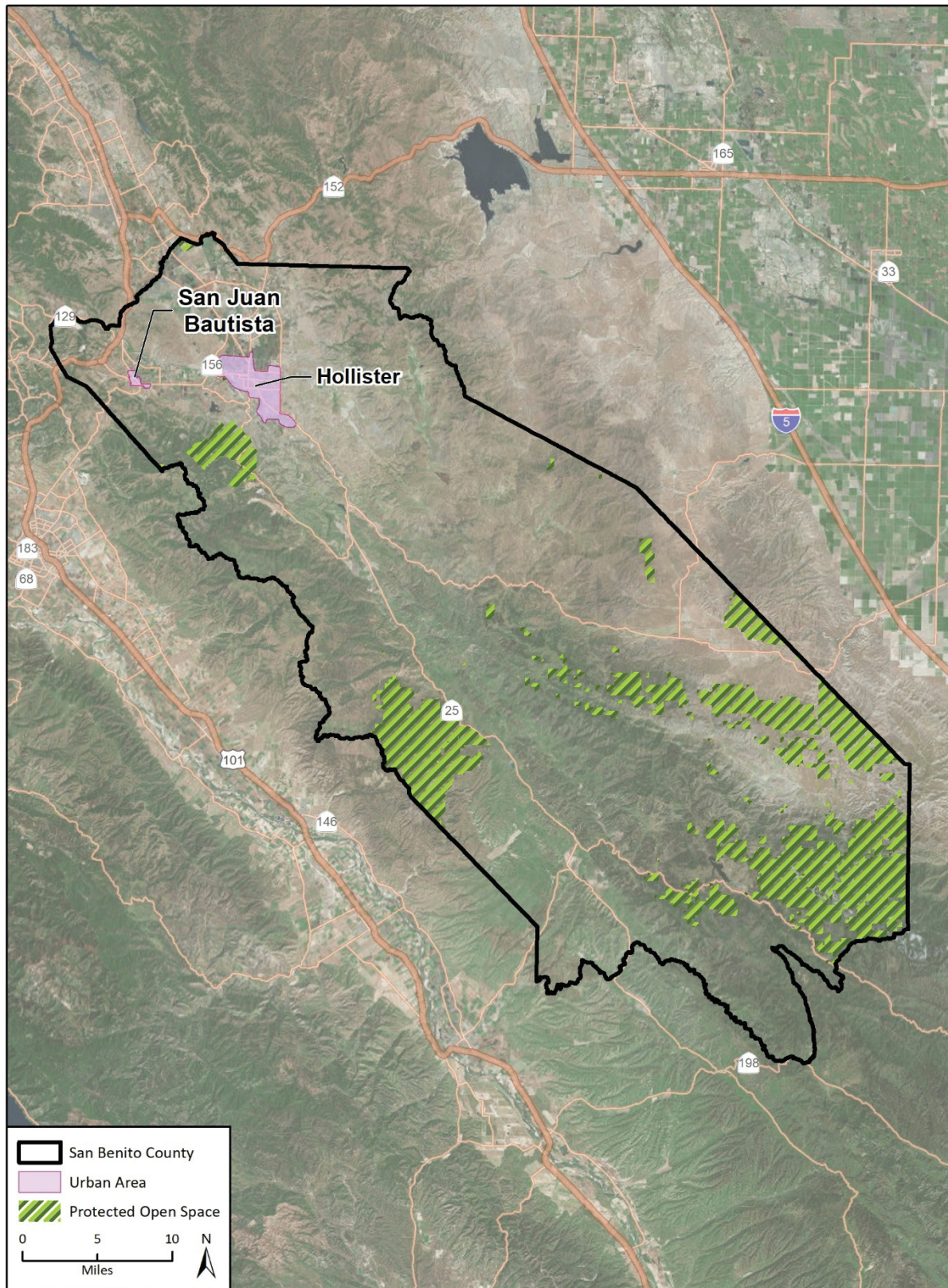


Fig 4.10-3 Protected Open Space in Santa Cruz County

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Figure 4.11-4 Protected Open Space in San Benito County



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Fig 4.10-4 Protected Open Space in San Benito County

a. Federal Laws, Regulations, and Policies

Code of Federal Regulations Title 25

Federally recognized Native American tribes are considered domestic dependent nations tribal sovereignty. “Tribal sovereignty” refers to tribes’ right to govern themselves, define their own membership, manage tribal property, and regulate tribal business and domestic relations; it further recognizes the existence of a government-to-government relationship between such tribes and the federal government. In general, State and local governments do not have “civil regulatory” jurisdiction (i.e., land use) on Indian Land, which is land held in trust or restricted status for a tribe.

Coastal Zone Management Act

The Coastal Zone Management Act was passed by Congress in 1972. It provides for management of coastal resources and aims to protect, restore, and enhance coastal resources through three programs administered by the National Oceanic and Atmospheric Administration in partnership with coastal States. In California, the Coastal Zone Management Act is administered in partnership with the California Coastal Commission. In partnership with coastal cities and counties, it plans and regulates the use of land and water in the coastal zone. Development activities, which are broadly defined by the CZMA to include (among other activities) construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters, generally require a coastal permit from either the California Coastal Commission or the local government. The National Coastal Zone Management Program balances competing land and water issues. Programs under the Coastal Zone Management Act include the National Estuarine Research Reserve System, which protects estuaries for use as field laboratories that improve understanding of estuaries, and the Coastal and Estuarine Land Conservation Program, which assists with acquisition of coastal property or easements for conservation purposes.

b. State Laws, Regulations, and Policies

Sustainable Communities Strategy and Climate Protection Act (SB 375)

SB 375 is a California law passed in 2008 that requires each MPO to demonstrate, through the development of a Sustainable Communities Strategy (SCS), how its region will integrate transportation, housing and land use planning to meet the greenhouse gas (GHG) reduction targets set by the State.

In addition to creating requirements for MPOs, it also creates requirements for CTC and CARB. Some of the requirements include the following:

- CTC must maintain guidelines for the travel demand models that MPOs develop for use in the preparation of their RTPs or MTPs.
- CARB must develop regional GHG emission reduction targets for automobiles and light duty trucks for 2020 and 2035 by September 30, 2010. These targets were approved on September 23, 2010. CARB is tasked to update the regional targets every eight years, with

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the option of revising them every four years. The latest targets were approved on March 18, 2018 and went into effect October 1, 2018.

- Each MPO must prepare an SCS as part of its RTP or MTP to demonstrate how it will meet the regional GHG targets.
- Each MPO must adopt a public participation plan for development of the SCS that includes informational meetings, workshops, public hearings, consultation, and other outreach efforts.
- If an SCS cannot achieve the regional GHG target, the MPO must prepare an Alternative Planning Strategy (APS) showing how it would achieve the targets with alternative development patterns, infrastructure, or transportation measures and policies.
- Each MPO must prepare and circulate a draft SCS at least 55 days before it adopts a final RTP or MTP.
- After adoption, each MPO must submit its SCS to CARB for review.
- CARB must review each SCS to determine whether, if implemented, it would meet the GHG targets. CARB must complete its review within 60 days.

AMBAG reduction targets from CARB are a three percent per capita reduction from 2005 levels by 2020 and a six percent per capita reduction from 2005 levels by 2035 (CARB 2021). These targets apply to the entire AMBAG region for all on-road light duty trucks and passenger vehicles emissions, and not to individual cities or sub-regions. Therefore, AMBAG, through the 2045 MTP/SCS, must reduce these levels to meet the 2020 and 2035 targets. The 2045 MTP/SCS includes the years for which the regional targets are required (base year/2020 and 2035) and the 2045 MTP/SCS also includes the additional scenario year of 2045 to comply with federal law. The 2045 MTP/SCS meets the 2020 and 2035 GHG targets.

SB 375 specifically states that nothing in the law changes local governments local land use authorities. The 2045 MTP/SCS provides a regional policy foundation that local governments may build upon, if they so choose. The 2045 MTP/SCS includes and accommodates the growth projections for the region. SB 375 also requires that forecasted development patterns for the region be consistent with the eight-year regional housing needs as allocated to member jurisdictions through the Regional Housing Needs Allocation (RHNA) process under State housing law.¹

In addition, this 2045 MTP/SCS EIR lays the groundwork for the streamlined review of qualifying development projects. Qualifying projects that meet statutory criteria and are consistent with the 2045 MTP/SCS are eligible for streamlined environmental review pursuant to CEQA under SB 375 and other laws; see Section 1.4.1. Office of Planning and Research 2017 General Plan Guidelines

The 2017 General Plan Guidelines (Governor's Office of Planning and Research 2017) is the first comprehensive update to the guidelines since 2003 and addresses numerous new laws, requirements, resources, and research that affect long-range planning in California. The 2017

¹ The RHNA was last updated as part of the 2035 MTP/SCS and will be updated for the next MTP/SCS scheduled for adoption in 2026.

update includes links to external documents and additional resources. This includes guidance for implementing the following legislation: Environmental Justice (SB 1000), Climate Change (SB 379), Sustainable Communities Strategies (SB 375), Flood Management (SB 5), Vehicle Miles Traveled (SB 743), Island or Fringe Communities (SB 244), Tribal Consultation (AB 52) and Local Hazard Mitigation Plans (AB 2140). Beyond State law requirements, the 2017 General Plan Guidelines also provide direction on topics including healthy communities, equitable and resilient communities, economic development, climate change, and renewable energy.

Planning and Zoning Law

California Government Code Section 65000, et seq., regulates the substantive and topical requirements of general plans. State law requires each city and county to adopt a general plan “for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning.” The California Supreme Court has called the general plan the “constitution for future development.” The general plan expresses the community’s development goals and embodies public policy relative to the distribution of future land uses, both public and private.

Zoning authority originates from city and county police power and from the Planning and Zoning Law, which sets minimum requirements for local zoning ordinances. Zoning ordinances must be consistent with the general plan and specific plans. The consistency requirement does not apply to charter cities other than Los Angeles unless the charter city adopts a consistency rule.

Cortese Knox Hertzberg Local Government Reorganization Act of 2000 (CKH Act)

The Cortese Knox Hertzberg Local Government Reorganization Act (CKH Act) is the most substantial reform to local government reorganization law since the 1963 statute that created a LAFCO in each county. The law established procedures for local government changes of organization, including city incorporation, annexation to a city or special district, and consolidation of cities or special districts (Section 56000, et seq.). LAFCOs have numerous powers under the CKH Act, but those of prime concern are the power to act on local agency boundary changes and to adopt spheres of influence (SOIs) for local agencies. The law also states that to update an SOI, LAFCOs are required to first conduct a review of the municipal services provided in the county.

Senate Bill 743

SB 743 changes the way that public agencies evaluate the transportation impacts of projects under CEQA, recognizing that roadway congestion, while an inconvenience to drivers, is not itself an environmental impact (see Pub. Resource Code, § 21099, subd. (b)(2)). SB 743 provides opportunities to streamline CEQA for qualifying urban infill development near major transit stops in metropolitan regions statewide. A transit oriented infill project can be exempt from CEQA if consistent with a specific plan for which an EIR was prepared, and consistent with the use, intensity, and policies of an SCS or Alternative Planning Strategy that is certified

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by the CARB as meeting its greenhouse gas reduction targets. A city or county may designate an “infill opportunity zone” by resolution if it is consistent with the general plan and any applicable specific plan, and is a transit priority area within the adopted SCS or Alternative Planning Strategy. This infill opportunity zone is then exempt from level of service standards in the congestion management plan. Furthermore, under the bill parking impacts are no longer considered significant impacts on the environment for select development projects within infill areas with nearby frequent transit service.

California Coastal Act

The California Coastal Commission is one of California’s three designated coastal management agencies that administer the federal Coastal Zone Management Act (CZMA) in California. In partnership with coastal cities and counties, it plans and regulates the use of land and water in the coastal zone. Development activities, which are broadly defined by the CZMA to include (among other activities) construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters, generally require a coastal permit from either the California Coastal Commission or the local government. CZMA gives State coastal management agencies regulatory control over all activities that may affect coastal resources, including any new developments, and highway improvement projects that use federal funds.

The mission of the California Coastal Commission, established by voter initiative in 1972 and later made permanent by the legislature through adoption of the California Coastal Act of 1976, is to protect, conserve, restore, and enhance environmental and human-based resources of the California coast and ocean for environmentally sustainable and prudent use by current and future generations. The California Coastal Act includes specific policies that address issues such as shoreline public access and recreation, lower-cost visitor accommodation, terrestrial and marine habitat protection, visual resources, landform alteration, agricultural lands, commercial fisheries, industrial uses, water quality, offshore oil and gas development, transportation, development design, power plants, ports, and public works. The coastal zone, which was specifically mapped by the legislature, covers an area larger than the State of Rhode Island. On land, the coastal zone varies in width from several hundred feet in highly urbanized areas to up to 5 miles in certain rural areas, and offshore, the coastal zone includes a 3-miles-wide band of ocean.

Quimby Act

The 1975 Quimby Act (California Government Code Section 66477) authorized cities and counties to pass ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. The act states that the dedication requirement of parkland can be a minimum of 3 acres per thousand residents or more and up to 5 acres per thousand residents if the existing ratio is greater than the minimum standard. Revenues generated through in-lieu fees collected under the Quimby Act cannot be used for the operation and maintenance of park facilities. In 1982, the act was substantially amended. The amendments further defined acceptable uses of and restrictions

on the use of Quimby Act funds, provided acreage/population standards and formulas for determining the exaction, and indicated that the exactions must be closely tied to a project's impacts as identified through studies required by CEQA.

State Open Space Standards

State planning law (Government Code Section 65560) provides a structure for the preservation of open space by requiring every city and county in the State to prepare, adopt, and submit to the Secretary of the Resources Agency a "local open-space plan for the comprehensive and long-range preservation and conservation of open-space land within its jurisdiction." The following open space categories are identified for preservation:

- **Open space for public health and safety**, including, but not limited to, areas that require special management or regulation because of hazardous or special conditions;
- **Open space for the preservation of natural resources**, including, but not limited to, natural vegetation, fish and wildlife, and water resources;
- **Open space for resource management and production**, including, but not limited to, agricultural and mineral resources, forests, rangeland, and areas required for the recharge of groundwater basins;
- **Open space for outdoor recreation**, including, but not limited to, parks and recreational facilities, areas that serve as links between major recreation and open space reservations (such as trails, easements, and scenic roadways), and areas of outstanding scenic and cultural value; and
- **Open space for the protection of Native American sites**, including, but not limited to, places, features, and objects of historical, cultural, or sacred significance, such as Native American sanctified cemeteries, places of worship, religious or ceremonial sites, or sacred shrines located on public property (further defined in PRC Sections 5097.9 and 5097.993).
Local Laws, Regulations, and Policies

The following section focuses on the key plans that regulate land use in the AMBAG region, which are the county and city general plans and LCPs, the Airport Land Use Compatibility Plans, and master plans regulating land dedicated to university campuses. This section outlines the status of those plans.

c. Local Laws, Regulations, and Policies

Monterey County

Monterey County General Plan

The Monterey County General Plan (Monterey County 2010a) includes 12 planning areas. The planning horizon year is 2030, with full buildout of 10,015 new residential units. One of the primary challenges that the Monterey County General Plan addresses is how to plan future growth when high quality farmlands are in the valley and flatlands, and have been forced to

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compete with urban developments, while foothills along the valley serve as natural and scenic resources unique to Monterey County (Monterey County 2010a).

City of Carmel-by-the-Sea General Plan

The City of Carmel-by-the-Sea adopted its General Plan in 2003 (City of Carmel-by-the-Sea 2003). The City combined its General Plan with its Local Coastal Plan to ensure coordination of these two documents. This General Plan includes the following elements: Land Use and Community Character, Circulation, Housing, Coastal Access and Recreation, Coastal Resource Management, Public Facilities and Services, Open Space/Conservation, Environmental Safety and Noise (City of Carmel-by-the-Sea 2003).

City of Del Rey Oaks General Plan

The City of Del Rey Oaks adopted the update to its General Plan in 1997 (City of Del Rey Oaks 1997). This General Plan includes the following elements: Land Use, Housing, Circulation, Conservation and Open Space, Safety and Noise. The overarching goal of this General Plan is to enhance the beauty, health, safety, and quality of life for residents (City of Del Rey Oaks 1997).

City of Gonzales General Plan

The City of Gonzales adopted the Gonzales 2010 General Plan in 2011 (City of Gonzales 2010). A focus of the 2010 General Plan is providing a long-range plan with an Urban Growth Area that contains approximately 2,150 acres of new land for urbanization. This General Plan includes the following elements: Land Use, Circulation, Housing, Community Health and Safety, Conservation and Open Space, Community Services and Facilities, Community Character and Sustainability (City of Gonzales 2010).

City of Greenfield General Plan

The City of Greenfield adopted the General Plan in 2005 (City of Greenfield 2005). In addition to the seven elements that are required by State law, this General Plan also includes the following elements: growth management, economic development, and recreation. The goals of the Greenfield General Plan are to promote a high quality physical and social environment with rural character, provide a full range of municipal services and support a people-oriented environment for all (City of Greenfield 2005).

City of Pacific Grove General Plan

The Pacific Grove 1994 General Plan (City of Pacific Grove 1994) is the principal policy document for guiding future conservation and development of the City. This General Plan includes the following elements: Land Use, Housing, Transportation, Parks and Recreation, Natural Resources, Historic and Archaeological Resources, Urban Structure and Design, Public Facilities and Health and Safety (City of Pacific Grove 1994). The City of Pacific Grove Local Coastal Program governs land use and development in the Pacific Grove Coastal Zone and

consists of a land use plan and local implementation plan for the City (City of Pacific Grove 2020).

City of Marina General Plan

The City of Marina General Plan (City of Marina 2000) was adopted by the City in 2000. The overall goal of the Marina General Plan is the creation of a community which provides a high quality of life for all its residents; which offers a broad range of housing, transportation, and recreation choices; and which conserves irreplaceable natural resources. This General Plan includes the following elements: Community Land Use, Community Infrastructure and Community Development and Design (City of Marina 2000).

City of Monterey General Plan

The City of Monterey adopted the General Plan in 2005 (City of Monterey 2005). The General Plan goals and policies focus on preserving and enhancing Monterey's aesthetic environment, which the City developed around two central concepts: Monterey's special physical setting and its image as a town. This General Plan includes the following elements: Urban Design, Land Use, Circulation, Housing, Conservation, Open Space, Safety, Noise, Economic, Social, Historic Preservation and Public Facilities (City of Monterey 2005).

City of Salinas General Plan

The City of Salinas General Plan (City of Salinas 2002) was adopted in 2002. The City is currently updating the Plan. Since the last comprehensive update in 1988, the city grew substantially and is now the largest city in Monterey County. The major focus of this General Plan is how to protect valuable agricultural resources while promoting a diversified economy. This General Plan includes the following elements: Land Use, Community Design, Housing, Conservation/Open Space, Circulation, Safety and Noise (City of Salinas 2002).

City of Seaside General Plan

The City of Seaside adopted the existing General Plan in 2004 (City of Seaside 2004). The City is currently updating the Plan. The main opportunities and challenges that this General Plan focuses on includes: encouraging the development and redevelopment of North Seaside, while revitalizing the central core of the community; establishing a positive and unique identity on the Monterey Peninsula; creating new job and revenue generating development opportunities; protecting natural resources, such as open space and scenic vistas as development occurs encouraging the provision and maintenance of quality development; and improving the overall quality of life. In addition to the required seven elements, this General Plan also includes Urban Design and Economic Development Elements (City of Seaside 2004).

City of Sand City General Plan

The City of Sand City adopted its General Plan in 2002 (City of Sand City 2002). The focus of the General Plan is to enhance the features that make this community unique, including that it is walkable, transit oriented and capable of providing an integration of residential and

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commercial uses. The themes of this General Plan are economic diversification, active redevelopment, enhanced community appearance and image, organized and well-planned growth, elimination of land use conflicts, and cohesive residential neighborhoods (City of Sand City 2002).

City of Soledad General Plan

The City of Soledad adopted its General Plan in 2005 (City of Soledad 2005). The primary focus of the Plan is to foster a climate conducive for expanded economic development in Soledad, including expanding opportunities for shopping and tourism, providing more and better paying jobs and ensuring affordable housing. In addition to covering the required seven elements, this General Plan also includes the Front Street Improvement Plan and Downtown Specific Plan (City of Soledad 2005).

City of King General Plan

The King City General Plan (City of King 1998) was adopted in 1998. The overall goal of the General Plan is to provide for orderly growth and development and to maintain a balanced community. In addition to including the required seven elements, this General Plan also includes an Economic Development Element (City of King 1998).

Monterey County Airport Land Use Compatibility Plans

The four airports within Monterey County are: Monterey Regional Airport, Marina Municipal Airport, Mesa Del Rey Airport and Salinas Municipal Airport. The Monterey County Airport Land Use Commission updated the Airport Land Use Compatibility Plans (ALUCPs) for Monterey Regional Airport and Marina Municipal Airport in 2019 (Monterey County Airport Land Use Commission 2019a). The ALUC published the Draft ALUCPs for these two airports in January 2017. The ALUC published the plan for Salinas Municipal Airport in 1982 and the plan for Mesa Del Rey Airport in 1978. The goals of the ALUCPs are to protect residents from the negative environmental noise, safety and traffic impacts that can potentially be induced by airports (Monterey County Airport Land Use Commission, 1978, 1982, 2019a, 2019b).

California State University, Monterey Bay Comprehensive Master Plan

California State University, Monterey Bay (CSUMB) is in the process of updating its campus master plan. In October 2017, the Draft June 2017 version of the Comprehensive Master Plan is undergoing analysis through the production of an EIR in accordance with CEQA. The new Master Plan will build on earlier planning efforts that facilitated the transition of the campus from the former Fort Ord Army Base, to a 21st-century setting for teaching, learning and research. The Plan will consider a wide range of issues encompassing the academic environment, student and residential life, sustainability, mobility and infrastructure systems and connections with Monterey Bay communities (CSUMB 2017).

Santa Cruz County

Santa Cruz County General Plan

The Santa Cruz County Board of Supervisors adopted the 1994 General Plan and Local Coastal Program in 1994 (Santa Cruz County 1994). The 1994 General Plan consists of several parts that are organized into three volumes: the General Plan/Local Coastal Program Land Use Plan; a collection of Village, Town, Community and Specific Plans; and the General Plan and Local Coastal Program Environmental Impact Report. The prominent issues that the County focuses on in the 1994 General Plan are: providing adequate services, providing affordable housing, preserving the county's environmental quality and preventing conversions of agricultural lands. The General Plan is consistent with the County's policy of directing a large share of future growth into the incorporated cities, and the unincorporated areas within the Urban Services Line to preserve the character of the rural portion of the county (Santa Cruz County 1994).

City of Scotts Valley General Plan

The City of Scotts Valley adopted its General Plan in 1994 (City of Scotts Valley 1994). The General Plan focuses on how to handle physical changes within the city that are a result of rapid population increase and local development. In addition to the seven mandatory elements, this General Plan also includes the Parks & Recreation and Public Services & Facilities Elements (City of Scotts Valley 1994). An update of the General Plan is underway.

City of Santa Cruz General Plan

The City of Santa Cruz 2030 General Plan (City of Santa Cruz 2012b) was adopted in 2012. The General Plan seeks to connect the University of California, Santa Cruz population with the residents of the Santa Cruz community. The 2030 General Plan expresses Santa Cruz community members' desires for the city's physical, economic, social, cultural, and environmental characteristics, and seeks to establish plans for future growth and improvement in the upcoming 25 years (City of Santa Cruz 2012b).

City of Capitola General Plan

The City of Capitola adopted the General Plan in 2014 (City of Capitola, 2014). The General Plan guiding principles focus on the following topics: community identity, community connections, neighborhoods and housing, environmental resources, economy, fiscal responsibility, mobility and health and safety. In addition to the seven mandatory elements, this General Plan also includes an Economic Development Element (City of Capitola 2014).

City of Watsonville General Plan

The City adopted the existing Watsonville 2005 General Plan in 1994 (City of Watsonville 1994). This General Plan addresses the following major issues: population growth, housing growth, agricultural preservation, and the provision of adequate and affordable housing. The General Plan includes the following elements: Growth and Conservation, Land Use, Urban Design, Housing, Children, Recreation, Environmental Resources, Circulation, Public Facilities

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and Public Safety (City of Watsonville, 1994). The Draft Watsonville Vista 2030 General Plan is the subject of ongoing litigation and has not replaced the 2005 General Plan (City of Watsonville 2021).

Santa Cruz County Airport Land Use Compatibility Plans

The Santa Cruz County Community Development Department is the ALUC with authority in Santa Cruz County. The 1994 General Plan and Local Coastal Program for the County of Santa Cruz and the Watsonville 2005 General Plan serve as the ALUCP for the Watsonville Municipal Airport, which is the only public airport in the County of Santa Cruz. In addition, in July 2017, the City of Watsonville published Watsonville Municipal Airport Regulations to augment the existing ordinances of the City of Watsonville Municipal Code that regulate land use activities within and near the Watsonville Municipal Airport (Santa Cruz County, 1994; City of Watsonville, 1994 and 2017a). The Watsonville Municipal Airport Master Plan is currently undergoing an update (City of Watsonville 2021).

University of California, Santa Cruz Long Range Development Plan

The University of California, Santa Cruz (UCSC) Long-Range Development Plan 2005-2020 (2005 LRDP) provides a comprehensive framework for the physical development of the UC Santa Cruz campus. The 2005 LRDP supports UCSC's academic, research and public service mission while maintaining the campus's strong traditions of environmental stewardship and sustainability. UCSC chose the 2020 planning horizon to match the original horizon of the City of Santa Cruz's new General Plan, underscoring the interrelatedness of UCSC and the greater community (University of California, Santa Cruz, 2005). The 2021 UCSC Long Range Development Plan was adopted by the University of California Board of Regents in September 2021 (University of California, Santa Cruz 2021).

San Benito County

San Benito County General Plan

The San Benito County 2035 General Plan (San Benito County, 2015a) sets a clear direction for the future of the county and includes goals, policies, and programs necessary to achieve the community's vision and guiding principles. This plan also addresses issues of sustainability, including environmental protection, economic expansion and diversification and equity. The plan was shaped over a three-year period by an extensive outreach process that engaged residents, businesses, stakeholders, developers, and decision-makers (San Benito County, 2015a).

City of Hollister General Plan

The City of Hollister General Plan (City of Hollister 2005), adopted in 2005, identifies growth as a major factor in the loss of agricultural land. As a result, the 2005 General Plan reduced the size of the city's planning area. Since adoption of the General Plan, further growth has been constrained by inadequate infrastructure, congestion on Highway 25, insufficient

wastewater capacity issues and a moratorium on major development. The General Plan sets six major goals for the city: encourage pedestrian-friendly mixed use development downtown; provide core services in every neighborhood; encourage multiple modes of transportation; provide a range of housing styles and affordability levels; provide for an environment that encourages healthy living; and promote economic and environmental sustainability (City of Hollister 2005). The City is currently undergoing an update to its General Plan (City of Hollister 2021).

City of San Juan Bautista General Plan

The City of San Juan Bautista 2035 General Plan (City of San Juan Bautista 2015) was adopted in 2016. The General Plan's Land Use element sets out a vision for future growth in the city that includes: retention of agriculture and open space around the city's perimeter; reinvestment in existing neighborhoods; continued vitality of the downtown and the city's arts and cultural events; and a focus on infill development, community design and growth management (City of San Juan Bautista 2015).

San Benito County Airport Land Use Compatibility Plans

The San Benito County Airport Land Use Commission reviews development proposed within the Airport Influence Area of the Hollister Municipal Airport and Frazier Lake Airpark. The ALUC reviews applications in compliance with the policies in the Hollister Municipal Airport Land Use Compatibility Plan and the Comprehensive Land Use Plan - Frazier Lake Airpark (San Benito County 2012; 2019).

4.11.3 Impact Analysis

a. Methodology and Significance Thresholds

Appendix G of the *State CEQA Guidelines* identifies the following criteria for determining whether a project's impacts would have a significant impact on land use:

1. Physically divide an established community; and/or
2. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation (including, but not limited to, the General Plan, Local Coastal Program, or Zoning Ordinance) and result in a physical change to the environment not already addressed in the other resource chapters of this EIR.

The 2045 MTP/SCS was assessed to determine whether the transportation projects and SCS land use pattern and strategies could conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. This review focused on the process used by AMBAG to develop regional growth projections, the transportation network and programs, housing needs estimates, and the SCS land use strategies. This evaluation of land use assumes that construction and development under the 2045 MTP/SCS would adhere to applicable federal, State, and local regulations and would conform to appropriate standards in the industry, as relevant for individual projects. Land use impacts related to implementation of the 2045 MTP/SCS land use development pattern

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and transportation projects would be inherently operational in nature and the following analysis discusses effects of the proposed Plan following implementation.

Impacts related to conflicts with habitat conservation plans or natural community conservation plans are discussed in Section 4.4, *Biological Resources*. Impacts related to population and housing are discussed in Section 4.13, *Population and Housing*.

b. Project Impacts and Mitigation Measures

The following section describes land use impacts associated with the transportation improvements and future land use scenario included in the 2045 MTP/SCS. Impacts would apply in Monterey, San Benito, and Santa Cruz counties. Section 4.11.2.c summarizes the specific 2045 MTP/SCS transportation projects that could result in the types of land use impacts discussed below. Due to the programmatic nature of the 2045 MTP/SCS, a precise, project level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2045 MTP/SCS could result in the impacts as described in the following section.

Threshold 1: Physically divide an established community

<p>Impact LU-1 IMPLEMENTATION OF PROPOSED TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE 2045 MTP/SCS WOULD NOT PHYSICALLY DIVIDE AN ESTABLISHED COMMUNITY. THIS IS IMPACT WOULD BE LESS THAN SIGNIFICANT.</p>

In general, the 2045 MTP/SCS implements roadway projects and transportation improvements that would decrease traffic congestion, increase mobility, and improve alternative transportation infrastructure. Construction of additions to existing facilities and new facilities routinely involve temporary disruptions within established communities such as lane or road closures along roads and highways and service delays or detours for bus routes and passenger rail. Local jurisdictions routinely require traffic control plans and related measures to ensure that construction activities accommodate vehicular and pedestrian access, such as designating alternate routes or scheduling disruptive activities late at night or on weekends. With these controls, construction activities would not result in the physical division of established communities.

The 2045 MTP/SCS is intended to improve the system for all modes of transit so vehicles and non-motorized transit can use the streets simultaneously and safely. As a result, while roads may be expanded and widened under the 2045 MTP/SCS, these and/or other planned projects would include improvements to bicycle and pedestrian facilities. Because the existing roads subject to expansion or widening are already part of the communities in which they are located, such projects would not have the potential to divide those communities. The projects are intended to achieve goals of the 2045 MTP/SCS to increased mobility, reduce congestion and decrease GHG; therefore, the projects should result in bringing communities closer together rather than dividing them. New road, highway interchanges, bicycle lanes and ADA accessibility projects included in the 2045 MTP/SCS transportation system are long-

planned projects that are typically included in local circulation elements. As such, they have been anticipated and accommodated in local land use planning and would be integrated into the community infrastructure. These projects would increase community connectivity and mobility.

The existing and new road projects contained in the 2045 MTP/SCS originate from either local circulation plans or state projects supported by cities and counties. The projects have therefore been coordinated with and integrated into local plans that support and connect communities consistent with state planning law.

The land use scenario envisioned by the 2045 MTP/SCS would encourage infill, mixed use, and transit oriented development within existing urbanized areas. The land use scenario accommodates the people, households, and jobs identified in the regional growth forecast, and prioritizes future growth within existing communities. This type of development would not divide a community; rather it would promote the development of existing vacant or underutilized properties. This would locate people closer to existing employment and goods and services within established communities. Buildout of the SCS land use scenario would result in more compact development in those established communities. Buildout of the SCS land use scenario would result in some outlying development that would not divide communities.

Implementation of the 2045 MTP/SCS land use strategies would integrate future development into existing communities along the existing transportation network and would therefore not physically divide established communities. Many proposed transportation projects, such as expansion of transit services or the building of active transportation infrastructure, are intended to improve mobility and accessibility and may, as a result, improve community connectivity. Impacts related to dividing an established community would therefore be less than significant.

Mitigation Measures

None Required.

Threshold 2: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation (including, but not limited to, the General Plan, Local Coastal Program, or Zoning Ordinance) and result in a physical change to the environment not already addressed in the other resource chapters of this EIR.

Impact LU-2 THE 2045 MTP/SCS WOULD NOT CAUSE A SIGNIFICANT ENVIRONMENTAL IMPACT DUE TO A CONFLICT WITH ANY LAND USE PLAN, POLICY, OR REGULATION AND RESULT IN A PHYSICAL CHANGE TO THE ENVIRONMENT NOT ALREADY ADDRESSED IN OTHER RESOURCE CHAPTERS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

In planning for projected growth in the region, the 2045 MTP/SCS represents a voluntary growth strategy that retains local government land use autonomy. Neither SB 375 nor any other law requires local member agency general plans or land use regulation to implement the land use policies in the 2045 MTP/SCS. Thus, implementation of the 2045 MTP/SCS is

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dependent on local government policy decisions and voluntary action. The proposed 2045 MTP/SCS includes a list of planned and programmed projects including local and regional capital improvements that have been anticipated or accounted for in local general plans and coastal plans. These plans are summarized above in Section 4.11.2, *Regulatory Setting*.

The vision for the 2045 MTP/SCS is built on a set of integrated policies, strategies, and investments to maintain and enhance the transportation system to meet the diverse needs of the region through 2045. The 2045 MTP/SCS encourages a multimodal transportation network with emphasis on non-motorized transportation and land use patterns to reduce the distance between trip destinations.

The 2045 MTP/SCS will help the region reach its GHG emission reduction targets established by the California Air Resource Board (CARB) under SB 375, as discussed in Section 4.8 *Greenhouse Gas Emissions/Climate Change*. The 2045 MTP/SCS encourages infill and TOD development to reduce automobile traffic and commute trip lengths.

At the local level, the 2045 MTP/SCS builds on and incorporates regional and local planning efforts completed by the Regional Transportation Planning Agencies and local agencies through the general plan process. Other key regional and local examples include:

- University of California, Santa Cruz Long Range Development Plan
- California State University, Monterey Bay Master Plan

The land use scenario envisioned in the 2045 MTP/SCS was developed in close coordination with AMBAG member agency planning staff, the LAFCO within each of the three counties, and the 18 cities that comprise the AMBAG region. The envisioned land use scenario would build on the current local general plans of jurisdictions within the AMBAG region. This involved close coordination with each RTPA's Technical Advisory Committee, and the Planning Director's Forum. AMBAG held more than 80 one-on-one meetings with local jurisdictions to discuss the land use pattern including methodology, assumptions, growth projections, place types, opportunity areas, economic development, and the transportation network included in the 2045 MTP/SCS. While cities and counties are not required by SB 375 to make their plans consistent with the MTP/SCS, every effort was made to avoid inconsistencies.

The land use scenario envisioned by the 2045 MTP/SCS was modeled using the AMBAG Regional Travel Demand Model (RTDM) and GIS software to disaggregate the regional growth forecast to Transportation Zone Analysis (TAZ) levels, leveraging input of jurisdictional provided SCS PlaceTypes data and Opportunity Areas. The result is a spatial projection of future, allowable urbanization within each land use type that is broadly consistent with adopted local general plans.

Monterey County, Santa Cruz County, and cities within the counties have certified Local Coastal Programs (LCPS). Development that would occur within the Coastal Zone would be subject to the respective LCP. LCPs contain, generally, a land use plan, development code, and policy and zoning maps. Development in the coastal zone would also be subject to a coastal development permit when there would be a change in the use of land or water. The

overall goal of applying for and receiving a coastal development permit is to ensure that a project is consistent with the Coastal Act, and by extension LCPs. However, conflict and some inconsistencies with LCPs could occur. Meetings with local agency staff, as discussed above, resulted in consensus among the local agencies on a land use pattern and transportation network for the AMBAG region. While this consensus suggests that the 2045 MTP/SCS would not conflict with key policies or regulations adopted to avoid or mitigate environmental impacts, as presented throughout this EIR, the 2045 MTP/SCS would result in significant and unavoidable impacts in several environmental issue areas, including: aesthetics/visual resources, agriculture and forestry resources, air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, noise, population and housing, public services, recreation, and utilities, transportation, tribal cultural resources, and wildfire. The 2045 MTP/SCS would result in significant and unavoidable impacts to these environmental issue areas as disclosed in the respective EIR sections. The envisioned land use scenario would not result in additional impacts beyond the findings of significant and unavoidable impacts as already analyzed in respective environmental issue area sections of this EIR.

Therefore, the SCS land use and transportation projects envisioned within the 2045 MTP/SCS would result in conflicts with land use plans, policies, or regulations. However, the 2045 MTP/SCS would not result in a physical change to the environment that has not already been addressed in the other resource chapters of this EIR. The impacts of any such conflicts are described throughout this section of the EIR.

Mitigation Measures

Mitigation measures are provided for applicable resources throughout their respective environmental issue area sections of the EIR to reduce impacts. No additional mitigation is required for this impact.

Significance After Mitigation

This impact would be less than significant.

c. Specific RTP Projects That May Result in Impacts

All proposed transportation projects listed in Appendix B and summarized in Section 2, *Project Description*, would associate with Impacts LU-1 and LU-2.

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4.12 Noise

This section evaluates noise and vibration impacts of the proposed 2045 MTP/SCS.

4.12.1 Setting

a. Overview of Noise and Vibration

The following discussion describes the characteristics of noise and vibration. These characteristics are used to assess potential impacts at sensitive land uses. Noise- and vibration-sensitive land uses include locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, senior facilities, schools, hospitals, guest lodging, libraries and some passive recreation areas are examples of typical noise- and vibration-sensitive land uses.

Noise

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (Caltrans 2013a).

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response, which is most sensitive to frequencies around 4,000 Hertz and less sensitive to frequencies around and below 100 Hertz (Kinsler, et. al. 1999). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dBA; reducing the energy in half would result in a 3 dBA decrease (Crocker 2007).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not “sound twice as loud” as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease (i.e., twice the sound energy); that a change of 5 dBA is readily perceptible (8 times the sound energy); and that an increase (or decrease) of 10 dBA sounds twice (half) as loud ([10.5x the sound energy] Crocker 2007).

Sound changes in both level and frequency spectrum as it travels from the source to the receiver. The most obvious change is the decrease in level as the distance from the source increases. The manner in which noise reduces with distance depends on factors such as the type of sources (e.g., point or line, the path the sound will travel, site conditions, and obstructions). Noise levels from a point source typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance (e.g., construction, industrial machinery, ventilation units).

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Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013a). The propagation of noise is also affected by the intervening ground, known as ground absorption. A hard site, such as a parking lot or smooth body of water, receives no additional ground attenuation and the changes in noise levels with distance (drop-off rate) result from simply the geometric spreading of the source. An additional ground attenuation value of 1.5 dBA per doubling of distance applies to a soft site (e.g., soft dirt, grass, or scattered bushes and trees) (Caltrans 2013a). Noise levels may also be reduced by intervening structures; the amount of attenuation provided by this “shielding” depends on the size of the object and the frequencies of the noise levels. Natural terrain features such as hills and dense woods, and man-made features such as buildings and walls, can significantly alter noise levels. Generally, any large structure blocking the line of sight will provide at least a 5-dBA reduction in source noise levels at the receiver (Federal Highway Administration [FHWA] 2011). Structures can substantially reduce exposure to noise as well. The FHWA’s guidelines indicate that modern building construction generally provides an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows.

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important factors of project noise impact. Most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors have been developed. One of the most frequently used noise metrics is the equivalent noise level (L_{eq}); it considers both duration and sound power level. L_{eq} is defined as the single steady A-weighted level equivalent to the same amount of energy as that contained in the actual fluctuating levels over time. Typically, L_{eq} is summed over a one-hour period. L_{max} is the highest RMS sound pressure level within the sampling period, and L_{min} is the lowest RMS sound pressure level within the measuring period (Crocker 2007).

Noise that occurs at night tends to be more disturbing than that occurring during the day. Community noise is usually measured using Day-Night Average Level (L_{dn}), which is the 24-hour average noise level with a +10 dBA penalty for noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours; it is also measured using Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a +5 dBA penalty for noise occurring from 7:00 p.m. to 10:00 p.m. and a +10 dBA penalty for noise occurring from 10:00 p.m. to 7:00 a.m. (Caltrans 2013a). Noise levels described by L_{dn} and CNEL usually differ by about 1 dBA. The relationship between the peak-hour L_{eq} value and the L_{dn} /CNEL depends on the distribution of traffic during the day, evening, and night. Quiet suburban areas typically have CNEL noise levels in the range of 40 to 50 dBA, while areas near arterial streets are in the 50 to 60-plus CNEL range. Normal conversational levels are in the 60 to 65-dBA L_{eq} range; ambient noise levels greater than 65 dBA L_{eq} can interrupt conversations (Federal Transit Administration [FTA] 2018).

Vibration

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent structures. The number of cycles per second of oscillation makes up the vibration frequency, described in terms of Hz. The

frequency of a vibrating object describes how rapidly it oscillates. The normal frequency range of most groundborne vibration that can be felt by the human body starts from a low frequency of less than 1 Hz and goes to a high of about 200 Hz (Crocker 2007).

While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low frequency vibration. Vibration in buildings, such as from nearby construction activities, may cause windows, items on shelves, and pictures on walls to rattle. Vibration of building components can also take the form of an audible low frequency rumbling noise, referred to as groundborne noise. Groundborne noise is usually only a problem when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz), or when foundations or utilities, such as sewer and water pipes, physically connect the structure and the vibration source (FTA 2018). Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses.

Vibration energy spreads out as it travels through the ground, causing the vibration level to diminish with distance away from the source. High-frequency vibrations diminish much more rapidly than low frequencies, so low frequencies tend to dominate the spectrum at large distances from the source. Discontinuities in the soil strata can also cause diffractions or channeling effects that affect the propagation of vibration over long distances (Caltrans 2013b). When a building is impacted by vibration, a ground-to-foundation coupling loss will usually reduce the overall vibration level. However, under rare circumstances, the ground-to-foundation coupling may actually amplify the vibration level due to structural resonances of the floors and walls.

Vibration amplitudes are usually expressed in peak particle velocity (PPV) or RMS vibration velocity. The PPV and RMS velocity are normally described in inches per second. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (Caltrans 2013b).

Noise and Vibration Sources

Many principal noise generators within the AMBAG region are associated with transportation (i.e., airports, freeways, arterial roadways, and railroads). Local collector streets are not considered significant noise sources as traffic volume and speeds are generally much lower than for freeways and arterial roadways. Generally, transportation-related noise is the dominant noise source within urban environments.

Similar to the environmental setting for noise, the vibration environment is typically dominated by traffic from nearby roadways and activity on construction sites. Heavy trucks typically operate on major streets and can generate groundborne vibrations that vary depending on vehicle type, weight, and pavement conditions. Nonetheless, vibration due to roadway traffic is typically not perceptible.

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Motor Vehicle Traffic

Motor vehicles, including cars/light trucks, buses, and various types of trucks, are the most substantial source of noise in most of the AMBAG region. This can be attributed to the extensive network of major, primary, and secondary arterials, as well as the large number of vehicle trips that occur each day. Within Monterey County, U.S. 101 and Highway 1 have the largest vehicle volumes and the highest noise levels. In 2020, daily traffic volumes on Highway 1 ranged from 13,178 vehicles south of Watsonville at the Monterey-Santa Cruz County line during off-peak months¹ to 83,272 vehicles between Del Monte Avenue/Fremont Boulevard and Lightfighter Drive in Monterey County during peak months. U.S. 101 daily traffic volumes in Monterey County ranged from 6,345 vehicles south of Bradley Road during off-peak months to 77,780 vehicles between Boronda Road and Laurel Drive during peak months (TAMC 2020).

Within Santa Cruz County, Highway 1 experiences the greatest level of traffic in the AMBAG region. In 2019, daily traffic on Highway 1 ranged from approximately 5,000 vehicles (Santa Cruz/San Mateo County line) to 98,000 vehicles (Capitola Avenue and Bay Avenue) (Caltrans 2019).

The noisiest single road corridor in San Benito County is U.S. 101, although it traverses only seven miles through a relatively undeveloped portion of the County. In 2019, daily traffic on U.S. 101 in San Benito County was between 40,600 and 83,800 vehicles (Caltrans 2019). Levels of highway noise typically range from 70 to 80 dBA at a distance of 50 feet from the highway (Federal Highway Administration 2003).

Additionally, the AMBAG region has many arterial roadways. Typical arterial roadways have one or two lanes of traffic in each direction. Noise from these sources can be a substantial environmental concern where buffers (e.g., buildings, landscaping, etc.) are inadequate to reduce noise levels or where the distance from centerline to sensitive uses is relatively small. Given typical daily traffic volumes of 10,000 to 40,000 vehicle trips, noise levels along arterial roadways can typically range from Ldn 70 to 80 dBA at a distance of 50 feet from the roadway centerlines (FHWA 2003).

Aircraft Operation

The AMBAG region has six public-use airports:

- Monterey Regional
- Salinas Municipal
- King City Municipal (Mesa del Rey)
- Marina Municipal
- Watsonville Municipal
- Hollister Municipal

¹ Off-peak counts were conducted in either March or April and peak counts were conducted during August or September.

Of these, only the Monterey Regional Airport has scheduled air carrier service.

In addition to the publicly-owned airports, several private airports operate in the region. Of these, the Frazier Lake Airpark is the only one that allows public use. The remaining privately owned airports are used to support the agricultural industry or are used for other business purposes.

There are currently two operational military airfields in the AMBAG region:

- Camp Roberts Army Airfield and Heliport
- Fort Hunter-Liggett Army Heliport

Railroad Operations

Rail lines for goods movement (e.g., agricultural materials) are located throughout the AMBAG region. The only regular rail passenger service currently operating in the region is provided by Amtrak, the most popular long distance passenger train in the U.S. The Coast Starlight, which connects Los Angeles to Seattle, stops in Salinas, is the only Amtrak rail station in the region. The route operates one train in each direction daily.

In 2012 the SCCRTC purchased a rail line extending almost 32 miles from Davenport to Pajaro and is evaluating the potential use of this rail line, in combination with projects to improve parallel corridors, to enhance mobility in the region.

Railroad operations generate high, relatively brief, intermittent noise events. These noise events are an environmental concern for sensitive uses located along rail lines and near sidings and switching yards. Locomotive engines and the interaction of steel wheels and rails are one primary source of rail noise. The latter creates rolling noise, which is caused by continuous rolling contact, impact noise when a wheel encounters a rail joint, turnout or crossover and squeal generated by wheel/rail friction on tight curves. For very high speed rail vehicles, air turbulence can be a significant source of noise. Air horns and crossing bell gates are another primary source of rail noise.

Rail operations generate varying noise levels depending on the type of rail activity. Heavier commuter or freight trains, which are diesel-powered, generate more noise than electrically-powered light-rail vehicles. According to the FTA, six commuter trains traveling at 50 miles per hour with a horn blowing generate a noise level of 81 dBA L_{eq} at 50 feet. This same activity without a horn generates a noise level of 68 dBA L_{eq} at 50 feet. In comparison, 12 light rail transit trains traveling 40 miles per hour generate a noise level of 65 dBA L_{eq} at 50 feet. These same light rail transit trains generate a noise level of 57 dBA L_{eq} at 20 miles per hour at 50 feet (FTA 2018).

According to the FTA Transit Noise and Vibration Impact Assessment guidance document (2018), vehicle propulsion rail units generate the following noises: (1) whine from electric control systems and traction motors that propel rapid transit cars, (2) diesel-engine exhaust noise from locomotives, (3) air-turbulence noise generated by cooling fans and (4) gear noise. Additional noise of motion is generated by the interaction of wheels/tires with their running surfaces. The interaction of steel wheels and rails generates three types of noise: (1) rolling

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noise due to continuous rolling contact, (2) impact noise when a wheel encounters a discontinuity in the running surface, such as a rail joint, turnout or crossover and (3) squeal generated by friction on tight curves.

When comparing electric- and diesel-powered trains, speed dependence is strong for electric-powered transit trains because wheel/rail noise dominates, and noise from this source increases strongly with increasing speed. On the other hand, speed dependence is less for diesel-powered commuter rail trains, particularly at low speeds where the locomotive exhaust noise dominates. As speed increases, wheel-rail noise becomes the dominant noise source and diesel- and electric-powered trains will generate similar noise levels. For transit vehicles in motion, close-by sound levels also depend upon other parameters, such as vehicle acceleration and vehicle length, plus the type/condition of the running surfaces. For very high-speed rail vehicles, air turbulence can also be a significant source of noise. In addition, the guideway structure can also radiate noise as it vibrates in response to the dynamic loading of the moving vehicle.

Industrial and Manufacturing

Noise from industrial complexes and manufacturing plants are characterized as stationary or point sources even though they may include mobile sources like heavy equipment. Local governments typically regulate noise from industrial, manufacturing and construction equipment and activities through enforcement of noise ordinance standards, implementation of general plan policies and imposition of conditions of approval for building or grading permits.

In general, in the AMBAG region and throughout California, industrial complexes and manufacturing plants are located away from sensitive land uses and, as such, noise generated from these sources has less of an effect on surrounding properties. In contrast to industrial and manufacturing facilities, construction sites are located throughout the AMBAG region and often within, or adjacent to, residential areas.

Construction Noise and Vibration

Noise and vibration from construction sites are characterized as stationary or point sources even though heavy construction equipment is often mobile. Construction activities typically generate high, intermittent noise and vibration on and adjacent to construction sites and related noise and vibration impacts are short-term, occurring primarily on weekdays and during daylight hours. The dominant source of noise from most construction equipment is their diesel engine. During pile driving or pavement breaking events, impact noise is the dominant source and equipment produces the highest vibration levels. Construction equipment operates in two modes, stationary and mobile. Stationary equipment operates in one location for one or more days at a time and can generate a constant noise level (e.g., pumps, generators, and air compressors) or variable noise levels (e.g., pile drivers and pavement breakers). Mobile equipment moves around the construction site (e.g., dozers, tractors). Noise levels vary depending on the power cycle being used. Mobile equipment such as trucks, move to and from the site using adjacent streets/roads.

4.12.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

Relevant federal regulations include those established by the FHWA, FTA, Federal Aviation Administration (FAA) and Department of Housing and Urban Development (HUD).

Federal Highway Administration

Title 23, Part 772 of the Code of Federal Regulations - Traffic Noise

Traffic noise impacts, as defined in 23 CFR § 772.5, occur when the predicted noise level in the design year approach or exceed the Noise Abatement Criteria (NAC) specified in 23 CFR § 772, or a predicted noise level substantially exceeds the existing noise level (a “substantial” noise increase). A “substantial increase” is defined as an increase of 12 dB L_{eq} during the peak hour of traffic. For sensitive uses, such as residences, schools, churches, parks and playgrounds, the NAC for interior and exterior spaces is L_{eq} 57 and 66 dB, respectively, during the peak hour of traffic noise. Table 4.12-1 summarizes NAC corresponding to various land use activity categories. Activity categories and related traffic noise impacts are determined based on the actual land use in a given area.

Title 40, Part 201 and Title 49, Part 210 of the Code of Federal Regulations - Railroad Noise

Federal regulations for railroad noise are contained in 40 CFR Part 201 and 49 CFR Part 210. The regulations set noise limits for locomotives and are implemented through regulatory controls on locomotive manufacturers. Federal regulations also establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 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. The FHWA regulations for noise abatement must be considered for federal or federally-funded projects involving the construction of a new highway or significant modification of an existing freeway when the project would result in a substantial noise increase or when the predicted noise levels approach or exceed the NAC.

Title 14, Part 36 of the Code of Federal Regulations - Aircraft Noise

Aircraft operated in the U.S. are subject to federal requirements regarding noise emissions levels. These requirements are set forth in Title 14 CFR, Part 36. Part 36 establishes maximum acceptable noise levels for specific aircraft types, taking into account the model year, aircraft weight and number of engines.

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Table 4.12-1 Noise Abatement Criteria

Activity Category	Hourly L_{eq}	Hourly L_{10}^1	Analysis Location	Description of Activity Category
A	57	60	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67	70	Exterior	Residential
C	67	70	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails and trail crossings
D	52	55	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools and television studios
E	72	75	Exterior	Hotels, motels, offices, restaurants/bars and other developed lands, properties or activities not included in A-D or F
F	–	–	–	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical) and warehousing
G	–	–	–	Undeveloped lands that are not permitted

¹ L_{10} is the level of noise exceeded for 10% of the time.

Source: FHWA 2017a

Title 23, Part 772 of the Code of Federal Regulations – Federal and Federal-Aid Highway Projects

Title 23 of the Code of Federal Regulations (23 CFR § 772) provides procedures for preparing operational and construction noise studies and evaluating noise abatement for federal and federal-aid highway projects. Under 23 CFR § 772.7, projects are categorized as Type I or Type II projects. FHWA defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway on a new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment, or increases the number of through-traffic lanes. A Type II project is a noise barrier retrofit project that involves no changes to highway capacity or alignment.

Type I projects include those that create a completely new noise source, increase the volume or speed of traffic, or move the traffic closer to a receiver. Type I projects include the addition

of an interchange, ramp, auxiliary lane, or truck-climbing lane to an existing highway, or the widening an existing ramp by a full lane width for its entire length. Projects unrelated to increased noise levels, such as striping, lighting, signing and landscaping projects, are not considered Type I projects.

Under 23 CFR § 772.11, noise abatement must be considered for Type I projects if the project is predicted to result in a traffic noise impact. In such cases, 23 CFR § 772 requires that the project sponsor “consider” noise abatement before adoption of the environmental document. This process involves identification of noise abatement measures that are reasonable, feasible and likely to be incorporated into the project as well as noise impacts for which no apparent solution is available.

Federal Transit Administration

Noise Impact Criteria

The FTA has developed guidance to evaluate noise impacts from operation of surface transportation modes (i.e., passenger cars, trucks, buses, and rail) in the 2018 FTA *Transit Noise Impact and Vibration Assessment* (FTA 2018). All mass transit projects receiving federal funding must use these guidelines to predict and assess potential noise and vibration impacts. As ambient levels increase, smaller increments of change are allowed to minimize community annoyance related to transit operations.

Department of Housing and Urban Development

Title 24, Part 51, Subpart B of the Code of Federal Regulations – Noise Abatement and Control

The mission of HUD includes fostering "a decent, safe and sanitary home and suitable living environment for every American." Accounting for acoustics is intrinsic to this mission as safety and comfort can be compromised by excessive noise. To facilitate the creation of suitable living environments, HUD has developed a standard for noise criteria. The basic foundation of the HUD noise program is set out in the noise regulation 24 CFR Part 51 Subpart B, Noise Abatement and Control.

HUD's noise policy clearly requires that noise attenuation measures be provided when proposed projects are to be located in high noise areas. Within the HUD Noise Assessment Guidelines, potential noise sources are examined for projects located within 15 miles of a military or civilian airport, 1,000 feet from a road or 3,000 feet from a railroad.

HUD exterior noise regulations state that 65 dBA L_{dn} noise levels or less are acceptable for residential land uses and noise levels exceeding 75 dBA L_{dn} are unacceptable. HUD's regulations do not contain standards for interior noise levels. Rather a goal of 45 decibels is set forth and the attenuation requirements are focused on achieving that goal. It is assumed that with standard construction methods and materials, any building will provide sufficient attenuation so that if the exterior level is 65 dBA L_{dn} or less, the interior level will be 45 dBA L_{dn} or less.

b. State Laws, Regulations, and Policies

Land Use Compatibility Guidelines

The Governor’s Office of Planning and Research is required to adopt and periodically revise guidelines for the preparation and content of local general plans. The 2017 General Plan Guidelines (Governor’s Office of Planning and Research 2017) establish land use compatibility guidelines. Where a noise level range is denoted as “normally acceptable” for the given land use, the highest noise level in that range should be considered the maximum desirable for conventional construction that does not incorporate any special acoustic treatment. The acceptability of noise environments classified as “conditionally acceptable” or “normally unacceptable” will also depend on the anticipated amount of time that will normally be spent outside the structure and the acoustic treatment to be incorporated in structural design.

With regard to noise-sensitive residential uses, the recommended exterior noise limits are 60 dBA CNEL for single-family residences and 65 dBA CNEL for multi-family residences. The recommended maximum interior noise level is 45 dBA CNEL, which could normally be achieved using standard construction techniques if exterior noise levels are within the levels described above.

California Department of Transportation

Caltrans establishes noise limits for vehicles licensed to operate on public roads (Caltrans 2013a). For heavy trucks, the State pass-by standard is consistent with the federal limit of 80 dB. 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. For new roadway projects, Caltrans uses the NAC discussed above in connection with FHWA. In addition, Caltrans has published the *Traffic Noise Analysis Protocol* guidelines for assessing noise levels associated with roadway projects (Caltrans 2020a).

Caltrans has a *Transportation and Construction Induced Vibration Manual* that provides general guidance on vibration issues associated with construction and operation of projects in relation to human perception and structural damage (Caltrans 2020b).

Section 216 California Streets and Highways Code

Section 216 of the California Streets and Highways Code relates to the noise effects of a proposed freeway project on public and private elementary and secondary schools. Under this code, a noise impact occurs if, as a result of a proposed freeway project, noise levels exceed 52 dBA L_{eq} in the interior of public or private elementary or secondary classrooms, libraries, multipurpose rooms, or spaces. If a project results in a noise impact under this code, noise abatement must be provided to reduce classroom noise to a level that is at or below 52 dBA L_{eq} . If the noise levels generated from roadway sources exceed 52 dBA L_{eq} prior to the construction of the proposed freeway project, then noise abatement must be provided to reduce the noise to the level that existed prior to construction of the project.

Airport Noise Standards and Compatibility Planning

The State of California has the authority to establish regulations requiring airports to address aircraft noise impacts near airports. The State of California's Airport Noise Standards, found in Title 21 of the California Code of Regulations, identify a noise exposure level of 65 dB CNEL as the noise impact boundary around airports. Within the noise impact boundary, airport proprietors are required to ensure that all land uses are compatible with the aircraft noise environment or the airport proprietor must secure a variance from the California Department of Transportation.

California Noise Insulation Standards

The California Noise Insulation Standards found in Title 24 of the California Code of Regulations set requirements for new multi-family residential units, hotels and motels that may be subject to relatively high levels of transportation-related noise. For exterior noise, the noise insulation standard is 45 dB L_{dn} in any habitable room and requires an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than 60 dB L_{dn} .

California Aeronautics Act

The State Aeronautics Act (Public Utilities Code, Section 21670 et seq.) requires the establishment of Airport Land Use Commissions (ALUCs), which are responsible for developing airport land use compatibility plans (ALUCPs) for noise-compatible land uses in the immediate proximity of a commercial or public airport (Section 21675). ALUCs have two major roles: preparation and adoption of airport land use compatibility plans, which address policies for both noise and safety and review of certain local government land use actions and airport plans for consistency with the land use compatibility plan

The ALUCP is the major tool for ALUC land use regulation. The intent of the ALUCP is to encourage compatibility between airports and the various land uses that surround them. ALUCPs typically include the development of noise contours to identify excessive airport-related noise levels and measures to reduce noise levels. For example, Monterey Regional Airport encourages noise abatement procedures related to quiet departure techniques.

The Aeronautics Division of the California Department of Transportation has published the *California Airport Land Use Planning Handbook* (Caltrans 2011). The purpose of the *California Airport Land Use Planning Handbook* is to provide guidance for conducting airport land use compatibility planning. This handbook includes a section related to noise and states, "The basic strategy for achieving noise compatibility in the vicinity of an airport is to prevent or limit development of land uses that are particularly sensitive to noise. Common land use strategies are ones that either involve few people (especially people engaged in noise-sensitive activities) or generate significant noise levels themselves (such as other transportation facilities or some industrial uses)."

c. Local Laws, Regulations, and Policies

To identify, appraise and remedy noise and vibration problems in local communities, each county and city in the AMBAG region is required to adopt a noise element as part of its General Plan. Local governments use the Governor’s Office of Planning and Research’s General Plan Guidelines (2017), including land use compatibility guidelines, to prepare General Plan noise elements.

Each noise element is required to analyze and quantify current and projected noise levels associated with local noise sources, including, but not limited to: highways and freeways, primary arterials and major local streets, rail operations, air traffic associated with the airports; local industrial plants; and other ground stationary sources that contribute to the community noise environment. Beyond statutory requirements, local jurisdictions are free to adopt their own goals and policies in their noise elements, although most jurisdictions have chosen to adopt noise/land use compatibility guidelines that are similar to those recommended by the State. Land use compatibility considers both existing noise levels in a community, as well as community attitudes toward dominant noise sources.

In addition to regulating noise through noise element policies, local jurisdictions regulate noise through enforcement of local ordinance standards. These standards generally relate to noisy activities (e.g., use of loudspeakers and construction) and stationary noise sources and facilities (e.g., air conditioning units and industrial activities).

As discussed above, the State Aeronautics Act (Public Utilities Code, Section 21670 et seq.) requires the preparation of an ALUCP for nearly all public-use airports in the State (Section 21675). An Airport Land Use Commission (ALUC) is responsible for preparing the ALUCPs and ensuring compatible land uses in the vicinity of airports within their jurisdiction (Section 21676). Monterey County and San Benito counties each have an ALUC and ALUCPs. The San Benito County ALUC most adopted an updated ALUCP for the Hollister Municipal Airport in 2012 and the Frazier Lake Airpark ALUP in 2019 (San Benito County ALUC 2012; San Benito County ALUC 2019). The Monterey County ALUC adopted the Monterey Regional Airport ALUCP in February 2019 and Marina Municipal Airport ALUCP in May 2019 (Monterey County 2019a and 2019b). Santa Cruz County, however, is exempt from having an ALUC or preparing an ALUCP because it has only one public use airport owned by a single city (Watsonville) (Caltrans 2011). Instead, the City of Watsonville is required to submit its general and specific plans to the Caltrans Division of Aeronautics for review.

4.12.3 Impact Analysis

a. Methodology and Significance Thresholds

The analysis of noise impacts considers the effects of both temporary construction-related noise and long-term noise associated with proposed transportation system improvements. Temporary construction noise was estimated based upon levels presented in the FTA *Transit Noise and Vibration Impact Assessment*. Long-term traffic-related noise was estimated using a modification of the Federal Highway Traffic Noise Model (TNM).

Appendix G of the *State CEQA Guidelines* identifies the following criteria for determining whether a project's impacts would have a significant impact related to noise; AMBAG has added a threshold related to absolute noise increases:

1. Generation of 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;
2. Generation of a substantial absolute noise increase over existing noise levels;
3. Generation of excessive ground-borne vibration or ground-borne noise levels; or
4. 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 or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

The analysis of potential impacts includes an assessment of all applicable standards, including those established by local jurisdictions, counties, the State of California, and federal agencies, where appropriate.

Since this document analyzes noise impacts on a program level only, project level analyses for various projects within the 2045 MTP/SCS will be necessary in the future.

b. Project Impacts and Mitigation Measures

The following section describes noise impacts associated with the transportation improvements and future land use scenario included in the 2045 MTP/SCS. Due to the programmatic nature of the 2045 MTP/SCS, a precise, project level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2045 MTP/SCS could result in noise impacts as described in the following sections. Table 4.12-7 summarizes transportation projects that could result in the noise impacts discussed in this section.

Threshold 1: Generation of 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

Threshold 2: Generation of a substantial absolute noise increase over existing noise levels

Impact N-1 CONSTRUCTION ACTIVITIES ASSOCIATED WITH TRANSPORTATION PROJECTS AND LAND USE PROJECTS UNDER THE 2045 MTP/SCS WOULD GENERATE A SUBSTANTIAL TEMPORARY INCREASE IN AMBIENT NOISE LEVELS IN EXCESS OF STANDARDS OR OVER EXISTING NOISE LEVELS, AND WOULD GENERATE A SUBSTANTIAL ABSOLUTE NOISE INCREASE OVER EXISTING NOISE LEVELS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

The operation of equipment during the construction of roadway infrastructure, as well as infill development projects near transit and other land use development envisioned in the 2045 MTP/SCS, would result in temporary increases in noise in the immediate vicinity of

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individual construction sites. As shown in Table 4.12-2, average noise levels associated with the use of heavy equipment at construction sites can range from about 76 to 101 dBA at 50 feet from the source, depending upon the types of equipment in operation at any given time and the phase of construction. The highest noise levels generally occur during excavation and foundation development, which involve the use of equipment such as backhoes, bulldozers, shovels, and front-end loaders.

Table 4.12-2 Typical Construction Noise Levels (dBA)

Equipment	Typical Level 25 Feet from the Source	Typical Level 50 Feet from the Source	Typical Level 100 Feet from the Source	Typical Level 200 feet from the Source	Typical Level 800 Feet from the Source
Air Compressor	86	80	74	68	56
Backhoe	86	80	74	68	56
Concrete Mixer	91	85	79	73	61
Grader	91	85	79	73	61
Pile driver (Impact)	107	101	95	89	77
Pile driver (Sonic)	101	95	89	83	71
Jack Hammer	94	88	82	76	64
Paver	91	85	79	73	61
Saw	82	76	70	64	52
Scraper	91	85	79	73	61
Truck	90	84	78	72	60

Source: FTA 2018

Noise generated by construction activity would be variable depending on the project and intensity of equipment used. Roadway widening and new roadway projects would likely require the operation of many pieces of heavy-duty equipment that generate high noise levels. Alternatively, pedestrian trail improvements would typically be less intense requiring minimal, if any, use of heavy equipment. There are instances where activities that typically generate lower noise levels would generate relatively high noise levels. For example, a pedestrian trail improvement may include bridge pilings or require heavy equipment to clear vegetation. This conservative analysis assesses construction noise based on the operation of heavy-duty equipment. Noise levels from point sources such as construction sites typically attenuate at a rate of about 6 dBA per doubling of distance. Therefore, areas within 750 feet of construction site with heavy-duty equipment may be exposed to noise levels exceeding 65 dBA. Areas within 6,000 feet of impact pile drivers may be exposed to noise levels exceeding 65 dBA.

Some of the cities and counties in the AMBAG region include specific regulations in their municipal code to reduce construction noise impacts. In most cases, these regulations restrict construction activities to specific times and days (e.g., Seaside, Marina, Pacific Grove, and Hollister). Such local policies serve to reduce the impacts of noise on surrounding

communities by prohibiting construction during the night when people are engaged in noise-sensitive activities like sleeping.

Nevertheless, this impact is significant because applicable noise standards would be exceeded, or because a substantial temporary increase in ambient noise levels in the project vicinity would occur.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the 2045 MTP/SCS program where applicable for transportation projects that result in construction noise impacts, and where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

N-1 Construction Noise Reduction

To reduce construction noise levels to achieve applicable standards, implementing agencies for transportation and land use projects shall implement the measures identified below where feasible and necessary.

- Implementing agencies of 2045 MTP/SCS projects shall ensure that, where residences or other noise sensitive uses are located within 750 feet of construction sites, appropriate measures shall be implemented to ensure compliance with local ordinance requirements relating to construction noise. Specific techniques may include, but are not limited to: restrictions on construction timing, use of sound blankets on construction equipment, and the use of temporary walls and noise barriers to block and deflect noise.
- Designate an on-site construction complaint and enforcement manager for projects within 750 feet of sensitive receivers.
- Implementing agencies of the 2045 MTP/SCS shall post phone numbers for the on-site enforcement manager at construction sites along with complaint procedures and who to notify in the event of a problem.
- For any project within 6,000 feet of sensitive receptors that requires pilings, the implementing agencies shall require caisson drilling or sonic pile driving as opposed to impact pile driving, where feasible. This shall be accomplished through the placement of conditions on the project during its individual environmental review.
- Implementing agencies of 2045 MTP/SCS projects shall ensure that equipment and trucks used for project construction utilize the best available noise and vibration control techniques, including mufflers, intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds.
- Implementing agencies of 2045 MTP/SCS projects shall ensure that impact equipment (e.g., jack hammers, pavement breakers and rock drills) used for project construction be

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hydraulically or electrically powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatically powered tools is unavoidable, use of an exhaust muffler on the compressed air exhaust can lower noise levels from the exhaust by up to about 10 dBA. When feasible, external jackets on the impact equipment can achieve a reduction of 5 dBA. Whenever feasible, use quieter procedures, such as drilling rather than impact equipment operation.

- The following timing restrictions shall apply to MTP/SCS project construction activities located within 2,500 feet of a dwelling unit, except where timing restrictions are already established in local codes or policies.
- Construction activities shall be limited to:
 - Monday through Friday: 7 a.m. to 6 p.m.
 - Saturday: 9 a.m. to 5 p.m.
- Implementing agencies of 2045 MTP/SCS projects shall locate stationary noise and vibration sources as far from sensitive receptors as feasible. Stationary noise sources that must be located near existing receptors will be adequately muffled.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction, as applicable.

Significance After Mitigation

Implementation of required mitigation would reduce impacts from construction noise. However, even with application of Mitigation Measures N-1 construction noise from all 2045 MTP/SCS projects may not be reduced below applicable thresholds and impacts would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 3: Generation of excessive ground-borne vibration or ground-borne noise levels

Impact N-2 CONSTRUCTION ACTIVITIES ASSOCIATED WITH TRANSPORTATION PROJECTS AND LAND USE PROJECTS UNDER THE 2045 MTP/SCS WOULD GENERATE EXCESSIVE GROUND BORNE VIBRATION LEVELS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Construction-related vibration has the potential to damage structures, cause cosmetic damage (e.g., crack plaster), or disrupt the operation of vibration sensitive equipment. Vibration can also be a source of annoyance to individuals who live or work close to vibration-generating activities. Heavy construction operations can cause substantial vibration near the source. As shown in Table 4.12-3, the highest impact caused by equipment such as pile drivers or large bulldozers can generate vibrations of 1.518 to 0.089 in/sec PPV at 25 feet. Like

construction noise, vibration levels would be variable depending on the type of construction project and related equipment use.

Table 4.12-3 Construction Equipment Vibration Levels

Equipment		PPV at 25 feet (inches per second)	RMS at 25 feet (VdB)
Pile Driver (Impact)	Upper Range	1.518	112
	Typical	0.644	104
Pile Driver (Sonic)	Upper Range	0.734	105
	Typical	0.170	93
Vibratory Roller		0.210	95
Clam Shovel Drop (Slurry Wall)		0.202	94
Hydrol Mill (Slurry Wall)	In Soil	0.008	66
	In Rock	0.017	75
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Loaded Trucks		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Source: FTA 2018

Typical project construction activities, such as the use of jackhammers, other high-power or vibratory tools, compactors and tracked equipment, may also generate substantial vibration (i.e., greater than 0.2 inches per second PPV) in the immediate vicinity, typically within 15 feet of the equipment. With scheduling controls, typical construction activities would be restricted to hours with least potential to affect nearby properties. Thus, perceptible vibration can be kept to a minimum and not result in human annoyance or structural damage.

Some specific construction activities result in higher levels of vibration. Pile driving has the potential to generate the highest vibration levels and is the primary concern for structural damage when it occurs within 50 feet of structures. Vibration levels generated by pile driving activities would vary depending on project conditions, such as soil conditions, construction methods and equipment used. Depending on the proximity of existing structures to each construction site, the structural soundness of the affected buildings and construction methods, vibration caused by pile driving or other foundation work with a substantial impact component such as blasting, rock or caisson drilling and site excavation or compaction may be high enough to be perceptible within 100 feet and damage existing structures within 50 feet.

Some of the cities and counties in the AMBAG region include specific regulations in their municipal code to reduce construction vibration impacts. In most cases, these regulations restrict construction activities to specific times and days (e.g., Seaside, Marina, Pacific Grove, and Hollister). Such local policies serve to reduce the impacts of vibration on surrounding

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communities by prohibiting construction during the night when people are engaged in vibration-sensitive activities like sleeping.

Nevertheless, this impact is significant because transportation or land use project construction would cause excessive groundborne vibration or groundborne noise levels.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG, and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the 2045 MTP/SCS program where applicable for transportation projects that result in construction noise impacts, and where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region can and should implement Mitigation Measure N-1, listed under Impact N-1, and Mitigation Measure N-2, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

N-2 Physical Impacts Due to Vibration

If construction equipment would generate vibration levels exceeding acceptable levels as established by Caltrans (65 VdB to 80 VdB depending on frequency of the event and 0.1 to 0.6 PPV in/sec depending on building type), implementing agencies of the 2045 MTP/SCS shall, or can and should, complete the following tasks:

- Prior to construction, survey the project site for vulnerable buildings, and complete geotechnical testing (preconstruction assessment of the existing subsurface conditions and structural integrity), for any older or historic buildings within 50 feet of pile driving. The testing shall be completed by a qualified geotechnical engineer and qualified historic preservation professional and/or structural engineer.
- Prepare and submit a report to the lead agency that contains the results of the geological testing. If recommended by the preconstruction report implementing agencies shall require ground vibration monitoring of nearby historic structures. Methods and technologies shall be based on the specific conditions at the construction site. The preconstruction assessment shall include a monitoring program to detect ground settlement or lateral movement of structures in the vicinity of pile-driving activities and identify corrective measures to be taken should monitored vibration levels indicate the potential for building damage. In the event of unacceptable ground movement with the potential to cause structural damage, all impact work shall cease, and corrective measures shall be implemented to minimize the risk to the subject, or adjacent, historic structure.
- To minimize disturbance withing 550 feet of pile-driving activities, implement “quiet” pile-driving technology, such as predrilling of piles and the use of more than one pile driver to shorten the duration of pile driving), where feasible, in consideration of

geotechnical and structural requirements and conditions as defined as part of the geotechnical testing, if testing was feasible.

- Use cushion blocks to dampen noise from pile driving.
- Phase operations of construction equipment to avoid simultaneous vibration sources

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction, as applicable.

Significance After Mitigation

Implementation of required mitigation would reduce impacts from construction vibration. However, even with application of Mitigation Measures N-1 and N-2, construction vibration from all 2045 MTP/SCS projects may not be reduced below applicable thresholds and impacts would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 1: Generation of 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

Threshold 2: Generation of a substantial absolute noise increase over existing noise levels

Impact N-3 IMPLEMENTATION OF THE 2045 MTP/SCS WOULD GENERATE A SUBSTANTIAL PERMANENT INCREASE IN AMBIENT NOISE LEVELS IN EXCESS OF STANDARDS OR OVER EXISTING NOISE LEVELS AND GENERATE A SUBSTANTIAL ABSOLUTE NOISE INCREASE OVER EXISTING NOISE LEVELS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Traffic

Overall traffic levels on highways and roadways in the AMBAG region are projected to increase as a result of regional growth through the year 2045 (refer to Section 4.15, *Transportation*). The 2045 MTP/SCS includes projects that would potentially increase traffic noise by increasing traffic levels along and in the vicinity of affected facilities. Such projects include: construction of new interchanges, roadway widening, roadway extensions, new roadways and improvements to roads that would allow increased traffic volumes. Widening projects, roadway extension and new roadways would accommodate additional traffic volumes and/or relocate noise sources closer to receivers. In addition, the anticipated number of annual vehicle miles traveled (VMT) in 2045 would increase from 17,331,954 under baseline conditions (2020) to 20,032,142 with the 2045 MTP/SCS, an increase of approximately 2,700,188 VMT, or approximately 16 percent. Although many areas along freeway and roadway corridors are at least partially shielded from traffic noise by topography, buildings, walls and other barriers, an increase in VMT and new and extended

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roadways would result in higher traffic noise levels as compared to baseline conditions. Therefore, this impact is significant because applicable noise standards would be exceeded, or because a substantial permanent increase in ambient noise levels in the project vicinity would occur.

Rail Operations

The 2045 MTP/SCS includes investments in passenger rail and train service, such as extending existing rail service from Gilroy to Salinas and providing commuter rail service from Hollister to Gilroy and Watsonville. The FTA has developed a screening procedure to identify locations where a rail project may cause a noise impact. The screening distances for requiring noise assessments for various types of projects are presented in Table 4.12-4.

Rail transit projects included in the 2045 MTP/SCS would be located in urban areas to facilitate ridership. Sensitive land uses would be located within proximity to new and expanded rail corridors, and would potentially be exposed to noise levels that exceed acceptable standards, a significant impact.

Table 4.12-4 Screening Distances for Noise Assessments – Rail Transit Projects (in feet)

Type of Project		Unobstructed	Intervening Buildings
Commuter Rail Mainline		750	375
Commuter Rail Station	With Horn Blowing	1,600	1,200
	Without Horn Blowing	250	200
Commuter Rail -Highway Crossing with Horns and Bells		1,600	1,200
Railroad Transit		700	350
Railroad Transit Station		200	100
Light Rail Transit		350	175
Streetcar		200	100
Access Roads to Stations		100	50
Low and Intermediate Capacity Transit	Steel Wheel	125	50
	Rubber Tire	90	40
	Monorail	175	70
Yards and Shops		1,000	650
Parking Facilities		125	75
Access Roads to Parking		100	50
Ventilation Shafts		200	100
Power Substations		250	125
Source: FTA 2018			

The 2045 MTP/SCS also includes new facilities that encourage more efficient intermodal transport using rail. The number of freight trains currently operating each day is dependent upon the demands of the industries using rail services and can vary greatly from day to day. While increases in freight rail transport would increase the number of freight trains, these trains would likely operate as-needed rather than on a fixed schedule. Therefore, noise levels and frequency of pass-by trips would continue to vary daily. Overall, however, an increase in train volumes would cause an increase in noise levels adjacent to rail corridors. Sensitive land uses would be located within proximity to new and expanded rail corridors, and would potentially be exposed to noise levels that exceed applicable local standards. Thus, there would be a significant impact.

Bus Operations

The 2045 MTP/SCS includes projects to expand transit bus service, such as express bus service from the City of Hollister to City of Salinas and City of Watsonville. Transit services along new routes may expose sensitive receptors to bus noise. The FTA has developed a screening procedure to identify locations where a bus project may cause a noise impact. The screening distances for requiring noise assessments for various types of projects is presented in Table 4.12-5.

Table 4.12-5 Screening Distances for Noise Assessments – Bus Transit Projects (in feet)

Type of Project		Unobstructed	Intervening Buildings
Busway		500	250
BRT on Exclusive Roadway		200	100
Bus Facilities	Access Roads	100	50
	Transit Mall	225	150
	Transit Center	225	150
	Storage and Maintenance	350	225
	Park and Ride Lots with Buses	225	150

Source: FTA 2018

Increased frequency of bus service along existing corridors would also increase noise exposure. However, the addition of local buses and shuttles is unlikely to increase noise by significant levels as bus routes would be in urban areas with high ambient noise levels. In addition, the 2045 MTP/SCS also includes projects to replace older diesel buses with new compressed natural gas buses that produce less noise. Overall, however, sensitive land uses would be located within close proximity to new bus activity, and would potentially be exposed to noise levels that exceed applicable local standards. Therefore, there would be a significant impact.

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Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measure developed for the 2045 MTP/SCS program where applicable for transportation projects that result in significant mobile source noise levels, and where feasible and necessary based on project and site specific considerations. The measure below does not apply to land use projects. Project specific environmental documents may adjust this mitigation measure as necessary to respond to site specific conditions.

N-3 Noise Assessment and Control for Mobile and Point Sources

Sponsor agencies of 2045 MTP/SCS transportation projects shall complete detailed noise assessments using applicable guidelines (e.g., FTA Transit Noise and Vibration Impact Assessment for rail and bus projects and the Caltrans Traffic Noise Analysis Protocol) for roadway projects that may impact noise sensitive receivers. The implementing agency shall ensure that a noise survey is conducted that, at minimum:

- Determines existing and projected noise levels
- Determines the amount of attenuation needed to reduce potential noise impacts to applicable State and local standards
- Identifies potential alternate alignments that allow greater distance from, or greater buffering of, noise-sensitive areas
- If warranted, recommends methods for mitigating noise impacts, including:
 - Appropriate setbacks
 - Sound attenuating building design, including retrofit of existing structures with sound attenuating building materials
 - Use of sound barriers (earthen berms, sound walls, or some combination of the two)

Where new or expanded roadways, rail, or transit projects are found to expose receivers to noise exceeding normally acceptable levels, the implementing agency shall implement techniques as recommended in the project specific noise assessment. The preferred methods for mitigating noise impacts will be the use of appropriate setbacks (design adjustments) and sound attenuating building design, including retrofit of existing structures with sound attenuating building materials where feasible. In instances where use of these techniques is not feasible, the use of sound barriers (earthen berms, sound walls, or some combination of the two) shall be considered. Long expanses of walls or fences shall be interrupted with offsets and provided with accents to prevent monotony. Landscape pockets and pedestrian access through walls should be provided. Whenever possible, a combination of elements shall be used, including solid fences, walls, and landscaped berms. Other techniques such as rubberized asphalt or “quiet pavement” can be used where feasible to reduce road noise for new roadway segments or modifications requiring repaving. The effectiveness of noise reduction measures shall be monitored by taking noise measurements and installing adaptive mitigation measures to achieve applicable standards.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction and operation, as applicable.

Significance After Mitigation

Implementation of the above mitigation measure would reduce noise from mobile sources. However, even with implementation of Mitigation Measure N-3, mobile source noise from buildout of the 2045 MTP/SCS may continue to impact nearby noise sensitive receivers and exceed acceptable standards. Impacts would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 1: Generation of 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

Threshold 2: Generation of a substantial absolute noise increase over existing noise levels

Impact N-4 THE PROPOSED 2045 MTP/SCS LAND USE SCENARIO WOULD ENCOURAGE INFILL DEVELOPMENT NEAR TRANSIT AND OTHER TRANSPORTATION FACILITIES, WHICH WOULD GENERATE A SUBSTANTIAL INCREASE IN AMBIENT NOISE LEVELS IN EXCESS OF STANDARDS OR OVER EXISTING NOISE LEVELS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

The 2045 MTP/SCS is based on a land use and transportation scenario which defines a pattern of future growth and transportation system investment for the region emphasizing an infill approach near transit and other transportation facilities such as bicycle networks. Population and job growth is allocated principally within existing urban areas near public transit and existing transit corridors. New noise-sensitive development in infill areas could be exposed to noise levels exceeding the 65 dBA L_{dn} standard for residential land uses. Potential sources of noise exposure include traffic, rail and/or bus operations, commercial activity, and industrial activity. New development in infill areas near transit may also expose existing noise-sensitive uses to noise levels exceeding local noise standards. Impacts would be significant because applicable noise standards would be exceeded, or because infill project residents would be exposed to a substantial increase in ambient noise levels.

Mitigation Measures

Cities and counties in the AMBAG region can and should implement the following measures, where relevant to land use projects implementing the 2045 MTP/SCS, and where feasible and necessary based on project and site specific considerations. The mitigation measure outlined below does not apply to transportation projects. Project specific environmental documents may adjust this mitigation measure as necessary to respond to site specific conditions.

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N-4 Noise Mitigation for Land Uses

If a 2045 MTP/SCS land use project is located in an area with exterior ambient noise levels above local noise standards, the implementing agency can and should ensure that a noise study is conducted to determine the existing exterior noise levels in the vicinity of the project. If the project would be impacted by ambient noise levels, feasible attenuation measures shall be used to reduce operational noise to meet acceptable standards. In addition, noise insulation techniques shall be utilized to reduce indoor noise levels to thresholds set inapplicable State and/or local standards. Such measures may include, but are not limited to: dual-paned windows, solid core exterior doors with perimeter weather stripping, air conditioning system so that windows and doors may remain closed, and situating exterior doors away from roads. The noise study and determination of appropriate mitigation measures shall be completed during the project's individual environmental review.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction and operation, as applicable.

Significance After Mitigation

Implementation of the above mitigation measure would reduce noise for sensitive land uses in areas that exceed noise standards. However, even with implementation of Mitigation Measure N-4 noise from buildout of the 2045 MTP/SCS may continue to impact nearby noise sensitive receptors and exceed acceptable standards. Impacts would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 3: Generation of excessive ground-borne vibration or ground-borne noise levels

Impact N-5 THE PROPOSED 2045 MTP/SCS WOULD RESULT IN NEW TRUCK, BUS AND TRAIN TRAFFIC THAT WOULD GENERATE EXCESSIVE VIBRATION LEVELS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

The primary vibration sources associated with transportation system operations include heavy truck and bus traffic along roadways and train traffic along rail lines. However, vehicle traffic, including heavy trucks traveling on a highway, rarely generate vibration amplitudes high enough to cause structural or cosmetic damage, except in rare cases (e.g., where heavy truck traffic passes near fragile older buildings). Heavy trucks traveling over potholes or other pavement irregularities can cause vibration high enough to result in complaints from nearby residents. These conditions are commonly addressed by smoothing the roadway surface. Based on vibration measurements throughout California by Caltrans, worst-case traffic vibrations were shown to drop below the threshold of perception at distances of 150 feet or greater (Caltrans 2013b). Given that sensitive receivers are located within 150 feet of transportation facilities within the AMBAG region, and that 2045 MTP/SCS transportation

projects include roadway expansion and construction of new highways, significant impacts related to vibration associated with truck traffic would occur.

Rail activity is also a source of vibration. Caltrans conducted measurements of vibration levels associated with train activity throughout the State and found a peak vibration level of 0.36 inches per second PPV at ten feet from the track (Caltrans 2004). Based on this reference vibration level, vibrations from train activity drop below the threshold of perception at distances greater than 250 feet. The 2045 MTP/SCS includes the development of additional railway facilities along existing tracks, extension of existing railways and construction of new rail lines, as well as establishment of a new Amtrak rail route. This would potentially increase rail activity along existing lines and also introduce rail activity to new areas. These changes may expose nearby sensitive receptors and fragile buildings to a substantial increase in vibration levels relative to the existing condition. Impacts would be significant because excessive groundborne vibration or groundborne noise levels would be generated.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the 2045 MTP/SCS program where applicable for transportation projects that could generate excessive vibration impacts, and where feasible and necessary based on project and site specific considerations. These measures can and should also be implemented for future infill projects near transit pursuant to the 2045 MTP/SCS that would result in vibration impacts. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

N-5 Vibration Mitigation for Transportation Projects

Where local vibration and groundborne noise standards do not apply, implementing agencies of 2045 MTP/SCS projects shall comply with guidance provided by the FTA in the most recent version of the *Transit Noise and Vibration Impact Assessment* to assess impacts to buildings and sensitive receptors and reduce vibration and groundborne noise. FTA recommended thresholds shall be used except in areas where local standards for groundborne noise and vibration have been established. Methods that would be considered to reduce vibration and groundborne noise impacts include, but are not limited to:

- **Rail Traffic**
 - Maximizing the distance between tracks and sensitive uses
 - Conducting rail grinding on a regular basis to keep tracks smooth
 - Conducting wheel truing to re-contour wheels to provide a smooth-running surface and removing wheel flats
 - Providing special track support systems such as floating slabs, resiliently supported ties, high-resilience fasteners and ballast mats;
 - Implementing operational changes such as limiting train speed and reducing nighttime operations.

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▪ **Bus and Truck Traffic**

- Constructing of noise barriers
- Use noise reducing tires and wheel construction on bus wheels
- Use vehicle skirts (i.e., a partial enclosure around each wheel with absorptive treatment) on freight vehicle wheels

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for AMBAG transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction and operation, as applicable.

Significance After Mitigation

Implementation of the above mitigation measure would reduce potential impacts to a less than significant level. However, even with implementation of Mitigation Measure N-5, vibration from buildout of the 2045 MTP/SCS may continue to be excessive. Impacts would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 4: 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 or public use airport, expose people residing or working in the project area to excessive noise levels.

Impact N-6 PROPOSED TRANSPORTATION IMPROVEMENTS AND FUTURE PROJECTS INCLUDED IN THE LAND USE SCENARIO ENVISIONED IN THE 2045 MTP/SCS WOULD BE LOCATED IN CLOSE PROXIMITY TO EXISTING AIRPORTS SUCH THAT APPLICABLE EXTERIOR AND INTERIOR NOISE THRESHOLDS WOULD BE EXCEEDED. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

The 2045 MTP/SCS emphasizes infill development near transit and other transportation facilities. Public airports typically service entire regions, whereas smaller private airports or airstrips tend to serve local users. However, like other noise sources, noise from airports and aircraft flight events have the greatest effect on nearby land uses. As shown in Table 4.12-6, there are five public use and four private use airports in the AMBAG region that serve commercial and general aviation users.

Table 4.12-6 Public and Private Airports within the AMBAG Region

Airport	Public/Private Use	Airport Land Use Compatibility Plan (YES/NO)
Monterey County		
Monterey Regional Airport	Public	Yes
Marina Municipal Airport	Public	Yes
Mesa Del Rey Airport	Public	No
Salinas Municipal Airport	Private	Yes
San Benito County		
Hollister Municipal Airport	Public	Yes
Frazier Lake Airpark	Private	Yes
Santa Cruz County		
Watsonville Municipal Airport	Public	Yes
Bonny Doon Private Airport	Private	No
Monterey Bay Academy Airport, Watsonville	Private	No
AMBAG Total	9	

Most of these airports and airfields have an active Airport Land Use Compatibility Plan (ALUCP) (or the equivalent) to discourage incompatible land uses within the vicinity of the airport. For example, the ALUCP for Monterey Regional Airport includes information on the types of compatible land use developments within the 70-CNEL contour for airport operations which include noise and height restrictions (Monterey County 2019a). However, even with ALUCPs the potential still exists for forecasted development consistent with the proposed 2045 MTP/SCS to occur in areas of 70 dBA CNEL, exceeding recommended airport noise thresholds of 65 dBA CNEL for residential land uses and the project-specific land use compatibility thresholds of 70 dBA CNEL.

In addition to consideration of exterior CNEL noise levels, increases in interior noise levels near airports have the potential to result in sleep disturbance at nearby sensitive land uses. In accordance with the Federal Interagency Committee on Noise (FICON) guidance, aircraft-generated interior single-event noise levels of 65 dBA could result in a 5 percent or less chance of awakening someone (FICON 1992). Local land use compatibility standards contained in city and county general plans would typically dictate whether specific site review was required for construction of sensitive land uses in areas potentially affected by aircraft noise. However, given the regional scale of the proposed 2045 MTP/SCS, it is possible that the plan's forecasted land use development pattern could result in exposure to exterior and interior noise levels from existing airports or airstrips that exceed applicable thresholds. There would be a potentially significant impact resulting from excessive airport noise levels if projected development were to occur in close proximity to existing airports or airstrips. These impacts would require mitigation. Because implementation of the proposed 2045 MTP/SCS land use development pattern could potentially result in land use development being located in close proximity to existing airports such that applicable exterior and interior

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noise thresholds would be exceeded, thereby exposing people residing or working in the area to excessive noise levels. This is a significant impact.

Some transportation projects in the 2045 MTP/SCS would be within the vicinity of a private airstrip or an airport land use plan. Individuals would not be exposed to airport-related noise during operation of these projects, as they would not entail habitable structures or other facilities in which people would work or visit. However, during construction of these projects, construction personnel would be exposed to excessive noise levels. Such exposure would be temporary, and therefore considered less than significant.

Mitigation Measures

These measures can and should also be implemented for future land use development projects near existing public or public use airports. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

N-6 Noise Mitigation Near Airports

Local lead agencies for all new development proposed to be located within an existing airport influence zone, as defined by the locally adopted airport land use compatibility plan or local general plan, or within two miles of a private use airport, shall require a site specific noise compatibility study. The study shall consider and evaluate existing aircraft noise, based on specific aircraft activity data for the airport in question, and shall include recommendations for site design and building construction. Such measures may include, but are not limited to: dual-paned windows, solid core exterior doors with perimeter weather stripping, air conditioning system so that windows and doors may remain closed, and situating exterior doors away from roads, such as dual paned windows. The noise study and determination of appropriate mitigation measures shall be completed during the project's individual environmental review.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction and operation, as applicable.

Significance After Mitigation

To the extent that a local agency requires an individual project to implement the feasible mitigation measure described above, the appropriate design and building construction would ensure compliance with relevant plans or codes, and this impact would be reduced to a less than significant level. However, even with implementation of Mitigation Measure N-6 noise from buildout of the 2045 MTP/SCS may continue to impact nearby noise sensitive receptors and exceed acceptable standards. Impacts would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

c. Specific MTP/SCS Projects That May Result in Impacts

Table 4.12-7 identifies examples of transportation projects with the potential to cause or contribute to direct or indirect impacts to noise such as those discussed above. These projects are representative and were selected based on their potential scope and likelihood of disturbing agricultural lands. Additional specific analysis would be required as individual projects are implemented to determine the project specific magnitude of impact. Mitigation discussed above would apply to these specific projects.

Table 4.12-7 2045 MTP/SCS Projects that May Result in Noise/Vibration Impacts

AMBAG Project No.	Project	Location	Impact
MON-CT011-CT	SR 68 Corridor Improvements	Monterey County	N-1, N-2, N-4
MON-SOLO14-SO	SR 146 Bypass (Pinnacles Parkway)	Soledad	N-1, N-2, N-4
MON-CT031-CT	U.S. 101 – South of Salinas Improvements	Monterey County	N-1, N-2, N-4
MON-MST011-MST	Salinas Bus Rapid Transit	Salinas	N-1, N-2, N-4
MON-TAMC003-TAMC	Rail Extension to Monterey County, Phase 1	Monterey County	N-1, N-2, N-4
MON-TAMC014-TAMC	Rail Extension to Monterey County - Phase 2, Pajaro/Watsonville Station	Monterey County	N-1, N-2, N-4
SB-CT-A44	Highway 25 Expressway Conversion Project, Phase 1	San Benito County	N-1, N-2, N-4
SB-CT-A45	Route 25 Expressway Conversion Project, Phase II	San Benito County	N-1, N-2, N-4
SB-COH-A11	Union Road (formally Crestview Drive) Construction	Hollister	N-1, N-2, N-4
SB-COH-A18	Westside Boulevard Extension	Hollister	N-1, N-2, N-4
SB-SJB-A07	Third Street Extension	San Juan Batista	N-1, N-2, N-4
SB-SBC-A82	Flynn Road Extension	Hollister and San Benito County	N-1, N-2, N-4
SB-SJB-A09	Connect Lang Street to the Alameda	San Juan Batista	N-1, N-2, N-4
SC-RTC-24e-RTC	2 - Highway 1: Auxiliary Lanes from 41 st Avenue to Soquel Avenue and Chanticleer Bicycle and Pedestrian Bridge	Santa Cruz	N-1, N-2, N-4
SC-RTC-24g-RTC	4 - Hwy 1 Auxiliary Lanes and Bus on Shoulders: Freedom Blvd to State Park Dr	Santa Cruz Cuntty	N-1, N-2, N-4
SC-RTC-24r-RTC	94 - Highway 1: State Park Drive – Bay/Porter Auxiliary Lanes, Bus on Shoulders, and Mar Vista Bicycle and Pedestrian Crossing	Santa Cruz	N-1, N-2, N-4

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AMBAG Project No.	Project	Location	Impact
SC-MTD-P12-MTD	Highway 17 Express Service Restoration and Expansion	Santa Cruz County	N-1, N-2, N-4
SC-MTD-P14-MTD	Local Transit Service Restoration and Expansion	Santa Cruz County	N-1, N-2, N-4

4.13 Population and Housing

This section evaluates the population and housing impacts of the proposed 2045 MTP/SCS.

4.13.1 Setting

The information presented in this section was compiled from multiple sources, including U.S. Department of Housing and Urban Development (HUD), AMBAG's 2022 Regional Growth Forecast, and General Plans and associated EIRs for jurisdictions in the AMBAG region.

a. Growth Forecasting

The 2022 Regional Growth Forecast (AMBAG 2020) projects the region's population, housing, and employment to 2045. The 2022 Regional Growth Forecast is used to support regional planning efforts such as the Regional Travel Demand Model and the 2045 MTP/SCS as well as local planning such as the development of General Plans and project review.

Developing population, housing, and employment forecast estimates for the AMBAG region consists of two distinct stages. The first stage is the identification of regional and county level forecast figures with widely accepted forecasting methodologies. The second stage is the disaggregation of county level forecast numbers to the jurisdictional level and subsequently to the Traffic Analysis Zones (TAZ), using data gathered from jurisdictions (AMBAG 2020).

b. Existing Population, Housing, and Employment

Existing population, housing units and employment for unincorporated Monterey, San Benito, and Santa Cruz County and the 18 cities in the AMBAG region are shown in Table 4.13-1. As of 2020, the region contains 774,729 residents, 267,812 housing units and 406,280 jobs, with a jobs to housing ratio of 1.52 (AMBAG 2020). From 2015 to 2020, the number of housing units in the region increased by approximately 2 percent and is estimated to increase approximately 12 percent through 2045.

Monterey County's housing stock increased approximately 2 percent from 2015 to 2020 and is estimated to increase by approximately 11 percent through 2045. According to the Department of Finance (DOF), there were an estimated 3.30 persons per household in Monterey County as of January 1, 2021 (DOF 2021). The median housing price in Monterey County is \$731,564 and home values have increased 16.6 percent from 2020 to 2021 (Zillow 2021a).

San Benito County's housing stock increased by approximately 9 percent from 2015 to 2020 and is estimated to increase by approximately 33 percent through 2045. Persons per household in San Benito County is estimated to be 3.24 as of January 2021 (DOF 2021). Housing stock in San Benito County would exceed the region's total growth. The median housing price in San Benito County is \$772,300 and home values have increased 19.9 percent from 2020 to 2021 (Zillow 2021b).

Santa Cruz County housing stock increased approximately 1 percent from 2015 to 2020 and is estimated to increase approximately 9 percent through 2045. As of January 2021, Santa

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Cruz County has an estimated 2.62 persons per household (DOF 2021). Of all three counties in the AMBAG region, Santa Cruz County would have the least amount of growth in housing stock and the lowest estimated persons per household. The median housing price in Santa Cruz County is \$1,069,419 and home values have increased 23.3 percent from 2020 to 2021 (Zillow 2021c). Santa Cruz County median home values are the highest in the AMBAG region.

Table 4.13-1 2020 Population, Housing and Employment for the AMBAG Region

Jurisdiction	Population	Housing Units	Jobs
Monterey County	441,143	141,764	243,015
Carmel-by-the-Sea	3,949	3,437	3,566
Del Rey Oaks	1,662	741	748
Gonzales	8,506	1,987	6,326
Greenfield	18,284	3,981	7,882
King City	14,797	3,432	8,195
Marina	22,321	7,784	6,548
Monterey	28,170	13,705	40,989
Pacific Grove	15,265	8,201	8,016
Salinas	162,222	43,411	78,874
Sand City	385	189	2,092
Seaside	33,537	10,920	10,476
Soledad	25,301	4,137	9,010
Unincorporated County Territory	106,744	39,839	60,293
San Benito County	62,353	19,913	23,263
Hollister	40,646	11,917	15,492
San Juan Bautista	2,112	819	557
Unincorporated County Territory	19,595	7,177	7,214
Santa Cruz County	271,233	106,135	140,002
Capitola	10,108	5,554	12,250
Santa Cruz	64,424	23,954	43,865
Scotts Valley	11,693	4,739	10,109
Watsonville	51,515	14,226	28,514
Unincorporated County Territory	133,493	57,662	45,264
AMBAG Total	774,729	267,812	406,280

Source: AMBAG's 2022 Regional Growth Forecast.

4.13.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

Federal Uniform Relocation and Real Property Acquisition Policies Act of 1970

The Federal Uniform Relocation and Real Property Acquisition Policies Act (Uniform Act), 42 U.S.C. § 4601 et seq., passed by Congress in 1970, is a federal law that establishes minimum standards for federally funded programs and projects that require the acquisition of real property (real estate) or displace persons from their homes, businesses, or farms. The Uniform Act's protections and assistance apply to the acquisition, rehabilitation, or demolition of real property for federal or federally funded projects (HUD 2017b).

Title 23 CFR 450.322(f)

The Code of Federal Regulations, Title 23 CFR 450.322(f) requires that the metropolitan planning organization (MPO) update the regional transportation plan using the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity.

b. State Laws, Regulations, and Policies

California Relocation Assistance Act

The California Relocation Assistance Act of 1971 (Government Code § 7260 et seq.) is similar to the Uniform Relocation Assistance Act of 1970 (federal). However, it applies to State and local programs and projects that receive State funding, regardless of whether they receive federal funding. The Act requires notification, counseling, social services, and financial assistance for persons displaced by transportation and land redevelopment projects. These procedural protections and benefits apply when the project causing the displacement has received State funding during any phase of the program or project, even if it did not receive federal funding.

Homeowners and Private Property Protection Act of 2008

Proposition 99, the Homeowners and Private Property Protection Act, was approved by voters in 2008. Proposition 99 amended the State Constitution and prohibits local agencies from using eminent domain to acquire owner-occupied residences and transferring it to private entities.

California Government Code, Section 65583

California Government Code Section 65583 specifies the State Housing Element requirements. The Housing Element is one of the State-mandated elements of the General Plan and is updated every eight years. The State Department of Housing and Community Development (HCD) is responsible for reviewing Housing Elements to ensure compliance with State law.

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Housing Element Law

Enacted in 1969, housing element law (Government Code §§ 65580–65589.8) mandates that local governments adequately plan to meet the existing and projected housing needs of all economic segments of the community. The law acknowledges that in order for the private market to adequately address housing needs and demand, local governments must adopt land use plans and regulatory systems that provide opportunities for, and do not unduly constrain, housing development. As a result, housing policy in the State rests largely upon the effective implementation of local general plans and, in particular, local housing elements. Housing element law also requires HCD to review local housing elements for compliance with State law and to report its written findings to the local government.

Government Code Section 65583 (SB 2, Chapter 633, Statutes of 2007) strengthens State housing element law (Government Code Section 65583) by ensuring that every jurisdiction identifies potential sites where new emergency shelters can be located without discretionary review by the local government. It also increases protections for providers seeking to open a new emergency shelter, transitional housing, or supportive housing development by limiting the instances in which local governments can deny such developments.

Regional Housing Needs Allocation

California Government Code Sections 65583(a)(1) and 65584 require that each Council of Government (COG) consult with the California Department of Housing and Community Development (HCD) who determine each region's existing and projected housing need through preparation of a Regional Housing Needs Determination (RHND). The COG is then responsible for allocating a share of the regional housing need to each city and county based on a COG approved methodology. The Regional Housing Needs Allocation (RHNA) Plan documents the preparation of the RHNA methodology and each jurisdiction's housing allocation. The existing and future need for housing is determined primarily by the forecasted growth in households in a community, based on historical growth patterns, job creation, household formation rates, and other factors to estimate how many households will be added to each community over the projection period. The housing need for new households is then adjusted to account for an ideal level of vacancy needed to promote housing choice, maintain price competition, and encourage acceptable levels of housing upkeep and repair. The RHND also accounts for units expected to be lost because of demolition, natural disaster, or conversion to non-housing uses. The sum of these factors—household growth, vacancy need, overcrowding, cost burden, and replacement need—form the “determination” assigned to each region. Finally, RHNA considers how each jurisdiction might grow in ways that will decrease the concentration of low income households in certain communities. The need for new housing is distributed among income groups so that each community moves closer to the regional average income distribution. AMBAG prepares RHNA Plan for Monterey and Santa Cruz counties while SBtCOG prepares RHNA for San Benito County.

Senate Bill 375

Senate Bill 375 (SB 375) (Chapter 728, Statutes of 2008) focuses on aligning transportation, housing, and other land uses to achieve regional greenhouse gas (GHG) emission reduction targets established under the California Global Warming Solutions Act, also known as Assembly Bill 32 (AB 32). SB 375 requires California metropolitan planning organizations to develop an SCS as part of the RTP, with the purpose of identifying policies and strategies to reduce per capita automobiles and light duty trucks generated GHG emissions. The SCS must:

- Identify the general location of land uses, residential densities, and building intensities within the region;
- Identify areas within the region sufficient to house all the population of the region;
- Identify areas within the region sufficient to house an 8-year projection of the regional housing need;
- Identify a transportation network to service the regional transportation needs;
- Gather and consider the best practically available scientific information regarding resources areas and farmland in the region; and
- Consider the State housing goals; set forth a forecasted development pattern for the region; and allow the RTP to comply with the federal Clean Air Act of 1970 (42 U.S. Code Section 7401 et seq.).

SB 375 now synchronizes the schedules of the RHNA and RTP processes. The RHNA, which is adopted concurrently with the RTP, must also allocate housing units within the region consistent with the development pattern included in the SCS.

Existing law requires local governments to adopt a housing element as part of their general plan. Unlike the rest of the general plan, where updates sometimes occur at intervals of 20 years or longer, under previous law the housing element was required to be updated as frequently as needed and no less than every five years. Under SB 375, this period has been lengthened to eight years and timed so that the housing element period begins no less than 18 months after adoption of the RTP to encourage closer coordination between the housing and transportation planning completed by local governments and metropolitan planning organizations. SB 375 also changes the implementation schedule required in each housing element. Previous law required the housing element to contain a program that set forth a five-year schedule to implement the goals and objectives of the housing element. The new law instead requires this schedule of actions to occur during the eight-year housing element planning period and requires that each action have a timetable for implementation.

c. Local Laws, Regulations, and Policies

Monterey County

Monterey County adopted its Housing Element in 2016 (Monterey County 2016). The Housing Element contains several goals, policies and implementations that aim to improve the housing supply, the range of housing types and housing affordability levels. For example, Goal

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H-2, Assist in the provision of housing that meets the needs of all socioeconomic segments of the County, provides policies that support the development of housing affordable to the general workforce of Monterey County and address housing needs of special populations and extremely low income households through a range of housing options. In addition to incentivizing affordable housing, Goal H-3, *Provide suitable sites for housing development which can accommodate a range of housing by type, size, location, price and tenure, that achieves an optimal jobs/housing balance, conserves resources and promotes efficient use of public services and infrastructure*, aims to provide an adequate supply and diversity of housing in the County.

City of Carmel-by-the-Sea

The City of Carmel-by-the-Sea adopted its Housing Element in 2015. The purpose of the City's Housing Element is to identify adequate sites for a range of housing types, assist in the development of adequate and affordable housing, address constraints to meeting the City's housing needs, conserve and improve the condition of existing housing, and promote housing opportunities for all persons (City of Carmel-by-the-Sea 2015). For example, Goal G3-3, *Provide adequate sites for the development of a wide range of housing types for all citizens*, includes policies and programs that would meet housing growth needs through development of surplus sites, small sites, and adequate sites.

City of Del Rey Oaks Housing Element

The City of Del Rey Oaks adopted its Housing Element in 2019. The goals and policies of the Housing Element are intended to support the vision statements contained in the City's General Plan, as well as the land use classifications for residential, commercial, and open space (City of Del Rey Oaks 2019). For example, Goal B, *The City will encourage the provision of a wide range of housing by location, type of unit, and price to meet the existing and future housing needs in the City*, includes policies that would encourage the adoption of an inclusionary housing ordinance, homeownership housing, incentives for affordable housing, and affordable rentals.

City of Gonzales Housing Element

The City of Gonzales adopted its Housing Element in 2015 (City of Gonzales 2015). The goals and policies of the Housing Element include goals such as Goal HE-2, *Safe, sanitary, affordable housing opportunities for lower and moderate-income residents of Gonzales*, which includes policies such as encouraging affordable housing, and Goal HE-3, *Better housing opportunities for seniors, disabled persons, large families, single parent families, farmworkers, and persons in need of emergency shelter*, which includes policies and implementing programs for the provisioning of housing for special needs populations.

City of Greenfield Housing Element

The City of Greenfield adopted its Housing Element in 2016 (City of Greenfield 2016). The goals and policies of the Housing Element are intended to preserve, improve, and develop

housing. The framework of the Goals and policies guide the community's decision making. For example, Goal 6.1, *Housing sites for all income levels*, includes policies and programs for accommodating the City's regional share of new housing for all income groups and Goal 6.2, *Adequate affordable housing*, includes policies and programs for promoting and assisting with the development of affordable housing, reducing housing constraints imposed by zoning regulations and approval processes, and allowing a variety of housing and lot designs.

City of King Housing Element

The City of King Housing Element was adopted in February 2016 (City of King 2016). The Housing Element includes goals such as Goal 1, *Provide new housing units accessible to all members of the community in accordance with the regional fair share housing goals*, and Goal 3, *Meet the housing needs of special groups of City residents, including a growing farmworker senior population, large families, single mothers, homeless, and the disabled*.

City of Marina Housing Element

The City of Marina Housing Element was adopted in 2016 (City of Marina 2016). The Housing Element includes goals such as ensuring the provision of adequate sites for a range of housing types to ensure housing is available for a range of needs; assist in the development of adequate housing to meet the needs of extremely low, very low, low and moderate income households; address governmental constraints to the construction and preservation of housing where feasible; conserve and improve the condition of the existing affordable housing stock; and promote equal housing opportunities to address a range of community needs.

City of Monterey Housing Element

The City of Monterey Housing Element was adopted by the City in 2016 (City of Monterey 2016). The Housing Element includes goals and policies such as Goal a, *Promote construction of new ownership housing units and conservation of existing ownership housing units to maintain and/or improve the existing balance between owner and rental units in Monterey*, which includes policies to encourage production of new housing units and encourage the conservation of existing homeownership opportunities.

City of Pacific Grove Housing Element

The City of Pacific Grove adopted its Housing Element in 2016 (City of Pacific Grove 2016). The goals and policies of the Housing Element include goals such as Goal 1, *Support the maintenance and rehabilitation of the city's existing housing stock and residential neighborhoods*, and includes policies that encourage rehabilitation and private reinvestment to protect residential neighborhoods from deterioration, protecting mobile home parks, and protecting existing residential neighborhoods and consideration of the quality of life in higher density neighborhoods; and Goal 6, *Ensure resource efficiency in new and existing housing units*, which includes policies and programs that promote energy conservation and weatherization and encourage energy and resource efficiency.

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City of Salinas Housing Element

The City of Salinas Housing Element was adopted by the City in 2015 (City of Salinas 2015). The Housing Element includes goals and policies such as Goal H-1, *Provide a range of housing types and a variety of affordability levels to address existing and projected housing construction needs in Salinas*, and Goal H-2, *Maintain and improve existing neighborhoods and housing units*.

City of Sand City Housing Element

The City of Sand City Housing Element was adopted in March 2016 (City of Sand City 2016). The Housing Element includes goals such as Goal 4.1, *Provide adequate sites with sufficient infrastructure as needed to meet the City's Regional Housing Needs Allocation*, and policies that support the goal such as ensuring residential densities and adequate public services. The City's Housing Element also includes Goal 4.2, *Support the development of affordable housing, especially housing for very low, low, and moderate income households*, and policies that would ensure public services are provided on a priority basis to meet the City's Regional Housing Needs Allocation, and for the provision of the maximum amount of affordable housing feasible within the city.

City of Seaside Housing Element

The adoption of the City of Seaside Housing Element was delayed and as such, was subject to the requirement of preparing a midterm review of the adopted Element (City of Seaside 2019; City of Seaside 2020). The Housing Element includes goals and policies such as Goal H-1, *Well-maintained neighborhoods and housing conditions support an improved quality of life*, and includes policies that improve existing housing, neighborhood involvement, adequate and decent housing, identify residential hazards, and encourage sustainability and resource conservation.

City of Soledad Housing Element

The City of Soledad Housing Element was adopted in December 2018 (City of Soledad 2018). The Housing Element includes goals such as Goal 2, *To promote community character, livability, affordability, and housing diversity and choice by requiring an integrated mix of housing types in new residential areas*, and Goal 4, *To encourage the maintenance, improvement, and rehabilitation of the city's existing housing stock and residential neighborhoods, with special attention on conserving existing affordable housing*.

San Benito County

The Housing Element of the San Benito County 2035 General Plan (San Benito County 2015a) contains similar goals, policies, and programs as Monterey County to provide affordable housing, a variety of housing types and ensure adequate housing for all persons. For example, Goal HOU-2, *To promote the provision of adequate housing for all persons in the County including those with special housing needs and to emphasize the basic human need for housing as shelter*, expresses the County's intent to encourage private builders and

developers to participate in federal, state, or other programs that assist in providing and maintaining housing affordable to all income groups and special needs groups. The San Benito County Housing Element also contains Goal HOU-3, encouraging the preservation, maintenance, and improvement of existing housing, which would reduce potential displacement of homes and/or households from redevelopment.

City of Hollister Housing Element 2016

The City of Hollister Housing Element was adopted in 2016 (City of Hollister 2016). The Housing Element includes the following goals for housing in the City: *Work together to build a sense of community and achieving housing goals; Maintain and enhance existing housing and blend well-designed new housing into neighborhoods and communities; use land efficiently to encourage a diversity of housing types and to implement “smart” and sustainable development principles; develop affordable housing opportunities; and provide housing for special needs populations.*

City of San Juan Bautista Housing Element

The City of San Juan Bautista Housing Element was adopted in December 2019 (City of San Juan Bautista 2019). The goals of the Housing Element include Goal 1.0, *Safe affordable housing meeting the needs of all residents* and Goal 2.0, *Housing opportunities for all economic segments and special needs groups.*

Santa Cruz County

The Housing Element of the County of Santa Cruz’s General Plan (Santa Cruz County 2016) contains several goals, policies, and programs, much like Monterey and San Benito counties, which aim to address the particular housing needs of people with special needs, different incomes and different housing needs. For example, Goal 1: *Ensure land is available to accommodate an increased range of housing choices, particularly for multi-family units and smaller sized units*, contains policies that aim to maintain or change zoning designations to ensure adequate housing supply in the County. In addition, Goal 3 of the Housing Element aims to remove unnecessary government constraints that may hinder housing development and affordability.

City of Capitola Housing Element

The City of Capitola Housing Element was adopted in 2015 (City of Capitola 2015). The Housing Element contains goals, policies, and programs such as Goal 1.0, *Diversity in housing type and affordability level to accommodate the needs of Capitola residents* and Goal 2.0, *Increased and protected supply of housing affordable to extremely low, very low, low and moderate-income households.*

City of Santa Cruz Housing Element

The City of Santa Cruz Housing Element was adopted in 2016 (City of Santa Cruz 2016). The Housing Element contains goals such as Goal 1, *An adequate diversity in housing types and affordability levels to accommodate present and future housing needs of Santa Cruz residents*

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and Goal 2, *Increased and protected supply of housing affordable to extremely low, very low, low, and moderate income households.*

City of Scotts Valley Housing Element

The City of Scott's Valley Housing Element was adopted in 2016 (City of Scotts Valley 2016). The Housing Element contains goals such as Goal 1, *It is the goal of the City of Scotts Valley to promote a balanced mix of housing types, prices, and opportunities by increasing the number of housing units to accommodate population and employment growth*, and Goal 2, *It is the goal of the City of Scotts Valley to foster a high quality, safety, and livability of housing and residential neighborhoods through the improvement and preservation of housing and community services.*

City of Santa Cruz Housing Element

The City of Santa Cruz Housing Element was adopted in 2016 (City of Santa Cruz 2016). The Housing Element contains goals such as Goal 1, *An adequate diversity in housing types and affordability levels to accommodate present and future housing needs of Santa Cruz residents* and Goal 2, *Increased and protected supply of housing affordable to extremely low, very low, low, and moderate income households.*

City of Watsonville Housing Element

The City of Watsonville Housing Element was adopted in 2016 (city of Watsonville 2016). The Housing Element contains goals and policies such as Goal 1.0, *Improve, conserve, and preserve both the safe condition of and the continued availability of Watsonville's existing affordable housing stock in order to meet the needs of all economic segments of the community*; and Goal 2.0, *Expand and protect housing opportunities for all economic segments and special needs groups within the community.*

4.13.3 Impact Analysis

a. Methodology and Significance Thresholds

Appendix G of the *State CEQA Guidelines* identifies the following criteria for determining whether a project's impacts would have a significant impact to population and housing:

1. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure); and/or
2. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

The methodology for determining the significance of population and housing impacts compares the existing conditions to future horizon year 2045 conditions, as required in CEQA Section 15126.2(a). The 2045 MTP/SCS includes transportation projects and a land use growth pattern that may influence population, housing, and employment growth. The

analysis herein analyzes the potential impacts of transportation projects and land use pattern proposed in the 2045 MTP/SCS.

b. Project Impacts and Mitigation Measures

The following section describes population and housing impacts associated with the transportation improvements and future land use scenario included in the 2045 MTP/SCS. Due to the programmatic nature of the 2045 MTP/SCS, a precise, project level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2045 MTP/SCS could result in the impacts as described in the following section.

Threshold 1: Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)

Impact PH-1 THE 2045 MTP/SCS WOULD NOT INDUCE SUBSTANTIAL UNPLANNED POPULATION GROWTH, EITHER DIRECTLY OR INDIRECTLY. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

From 2020 to 2045, the region's total population is forecasted to increase by 95,047 residents to 869,776 total residents. Table 4.13-2 shows the forecasted population growth for the region as a whole and by jurisdiction.

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Jurisdiction	2020	2030	2045	Percent Change
Monterey County	441,143	467,068	491,443	11%
Carmel-By-The-Sea	3,949	3,954	3,984	1%
Del Rey Oaks	1,662	1,734	2,650	59%
Gonzales	8,506	13,492	15,711	85%
Greenfield	18,284	19,734	20,433	12%
King City	14,797	16,101	17,064	15%
Marina	22,321	25,126	30,044	35%
Monterey	28,170	28,650	29,639	5%
Pacific Grove	15,265	15,395	15,817	4%
Salinas	162,222	170,459	177,128	9%
Sand City	385	516	1,198	211%
Seaside	33,537	35,107	38,316	14%
Soledad	25,301	26,824	29,133	15%
Unincorporated County Territory	106,744	109,976	110,326	3%
San Benito County	62,353	73,778	83,366	34%
Hollister	40,646	43,327	45,599	12%
San Juan Bautista	2,112	2,315	2,436	15%
Unincorporated County Territory	19,595	28,136	35,331	80%
Santa Cruz County	271,233	284,146	294,967	9%
Capitola	10,108	10,794	11,126	10%
Santa Cruz	64,424	72,218	79,534	23%
Scotts Valley	11,693	11,837	12,010	3%
Watsonville	51,515	54,270	56,344	9%
Unincorporated County Territory	133,493	135,027	135,953	2%
AMBAG Total	774,729	824,992	869,776	12%

Source: AMBAG's 2022 Regional Growth Forecast (AMBAG 2020).

Regional population is forecasted to increase by 12 percent from 2020 to 2045. As shown above, population growth in the cities of Del Rey Oaks, Gonzales, Greenfield, King City, Marina, Sand City, Seaside, Soledad, Hollister, San Juan Bautista, Santa Cruz, and the unincorporated territory of San Benito County, would increase at a faster rate than the overall AMBAG region. In contrast, population growth in the cities of Carmel-by-the-Sea, Monterey, Pacific Grove, Capitola, and Scotts Valley and the unincorporated portions of Monterey and Santa Cruz counties would increase at a slower rate than the region. The population of the City of Salinas and the City of Soledad are forecasted to increase at a similar rate to the region overall.

The 2045 MTP/SCS would induce planned population growth directly through the development of the SCS land use scenario and indirectly as a result of the transportation projects included in the 2045 MTP/SCS. Between 2020 and 2045, the AMBAG region would grow by 95,047 people; 37,088 housing units; and 36,544 jobs. As shown in Figure 2-3, Figure 2-4, Figure 2-6, and Figure 2-8 in Section 2, *Project Description*, growth would be concentrated within existing communities, including the coastal plain that extends from the Santa Cruz/Capitola area in the north, south along the Monterey Peninsula, as well as some communities along major transportation corridors such as Hollister and Gonzales. The land use scenario envisioned by the 2045 MTP/SCS would encourage infill, mixed use, and TOD within existing urbanized areas. This type of development would promote the development of existing vacant or underutilized properties and would locate people closer to existing employment, goods, and services within established communities. In addition, investments in alternative modes of transportation and an emphasis on infill and TOD would result in land use developments with higher densities, mixed use land uses and an emphasis on transit use, bike and walk over single occupancy vehicle use, while investments in capacity increasing roadway improvements may indirectly lead to land use developments that have been historically typical for suburban development with low densities.

As mentioned above, population growth in the cities of Del Rey Oaks, Gonzales, Greenfield, King City, Marina, Sand City, Seaside, Soledad, Hollister, San Juan Bautista, Santa Cruz, and the unincorporated territory of San Benito County, would increase at a faster rate than the AMBAG region as a whole. Consistent with the goals of the 2045 MTP/SCS, the denser growth within existing urban centers with high accessibility to transit options allows for the creation of communities that are more sustainable, walkable, transit oriented, and compact. However, communities with minimal development at present would see substantial population growth through 2045. Some of these areas include the City of Sand City and unincorporated areas of San Benito County, which would see a 211 percent and 80 percent increase in population, respectively. For Sand City, this increase is 813 people; for San Benito County, the increase is 21,013 people. Similarly, the cities of Hollister, Gonzales, Marina, and Del Rey Oaks would see significant population growth, as shown in Table 4.13-2. Transportation improvements associated with the 2045 MTP/SCS would not result in direct population growth beyond anticipated growth in the region, and projects under the proposed 2045 MTP/SCS are designed to fully support the transportation needs of the growing population while implementing the infill development approach outlined in Chapter 4, *Sustainable Community Strategy*, of the MTP/SCS.

Government Code Section 65080(b)(2)(B)(ii) requires that an RTP/SCS must accommodate all the population of the region, including all economic segments of the population, over the course of the planning period of the regional transportation plan. In compliance with the requirements, the 2045 MTP/SCS includes strategies to accommodate new housing units through 2045. The housing strategies would continue the AMBAG region's commitment to growth in infill areas but are also intended to protect current residents from displacement, preserve existing affordable housing, and produce new housing to secure long-term affordability for lower income populations. As mandated by State Housing Law as part of the periodic (every eight years) process of updating local General Plan Housing Elements, the

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California Department of Housing and Community Development provides a regional housing need determination (RHND) to both AMBAG and SBtCOG. AMBAG is responsible for developing a methodology for the allocation of the RHND regional to jurisdictions in Monterey and Santa Cruz counties and SBtCOG is responsible for developing a methodology for the allocations for jurisdictions in San Benito County. The 2045 MTP/SCS must have enough housing capacity to accommodate the current RHNA allocations for the current (6th Cycle), and local governments will be responsible for accommodating their 6th Cycle RHNA allocations in their housing element updates.

Implementation of the proposed 2045 MTP/SCS land use development pattern would in some cases result in greater density/intensity of growth than included in current adopted local general plans. The 2045 MTP/SCS would not change local land use policies; individual jurisdictions retain land use authority. As such, implementation of the 2045 MTP/SCS would require the local jurisdiction to consider and resolve those differences through appropriate amendments to local planning documents, including Housing Element updates, and appropriate environmental review, thus avoiding impacts related to unplanned growth at the local level.

The 2045 MTP/SCS would accommodate forecasted growth through implementation of the envisioned 2045 MTP/SCS land use strategies to intensify density in developed areas, rather than induce unplanned growth. Transportation projects included in the 2045 MTP/SCS would not induce population growth as these projects would be growth accommodating and are generally intended to improve existing transportation networks. The transportation projects included in the 2045 MTP/SCS would result in increased transit use and reduced VMT per capita (compared to 2020 baseline conditions) as a result of expanded public transit fleets; see Section 4.15, *Transportation*, for additional information. Expanded transit fleets would support more compact development and more sustainable and efficient development without inducing the type of population growth that would require development of more land for urban purposes.

The land use and transportation projects in the 2045 MTP/SCS would therefore not result in substantial unplanned population growth. Impacts from implementation of the 2045 MTP/SCS would be less than significant.

Mitigation Measures

None required.

Threshold 2: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere

Impact PH-2 **LAND USE AND TRANSPORTATION PROJECTS INCLUDED IN THE 2045 MTP/SCS WOULD TEMPORARILY DISPLACE EXISTING HOUSING AND PEOPLE BUT WOULD NOT NECESSITATE THE CONSTRUCTION OF REPLACEMENT HOUSING ELSEWHERE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

Land use development included in the 2045 MTP/SCS would likely displace existing housing and people, primarily low and medium density single family, multi-family, or mobile home dwelling units, as existing housing units are demolished to make way for new development. However, new residential development would generally occur at higher densities and with more modern housing, frequently as part of mixed use development. During construction of individual projects, residents may be temporarily displaced. However, there are normal factors in the marketplace to offset this impact. Historically, vacancies within the existing housing stock absorb displacement of residents. In addition, existing laws and regulations would provide assistance in relocating households. As described in Section 4.13.2, *Regulatory Setting*, the Federal Uniform Relocation and Real Property Acquisition Policies Act requires public agencies to provide relocation assistance when an action by the agency displaces residences. Thus, impacts from short-term displacement would be reduced through both existing regulation and normal market factors.

In the long-run, the 2045 MTP/SCS would result in a net increase in housing units. Between 2020 and 2045, the projected increase in housing capacity in the region would be 37,088 units, or an increase of 14 percent. The most dramatic increases would occur in the cities of Del Rey Oaks, Gonzales, Sand City, Seaside, Marina, Hollister, Santa Cruz and unincorporated portions of San Benito County, as shown in Table 4.13-2. The MTP/SCS would result in a net increase in housing units, but would displace existing housing or people temporarily, as some residential structures are demolished to make way for new development. However, displacement would not be substantial, and would be minimized through existing programs within the AMBAG region. Displacement would not necessitate the construction of replacement housing. In effect, the MTP/SCS includes the replacement housing that would be necessitated by individual projects.

Implementation of the 2045 MTP/SCS would also result in the displacement of some existing businesses. However, as with residential development, new commercial development generally would occur at higher densities and with more modern structures, frequently as part of a mixed use development. The Federal Uniform Relocation and Real Property Acquisition Policies Act requires public agencies to provide relocation assistance when an action by the agency displaces businesses or farms.

Some transportation network improvements, such as road widening or extension projects, would require acquisition of right-of-way in areas with high density housing or business along transportation corridors and may displace residential or commercial units. Specific projects would be required to undergo separate environmental review under CEQA. The corresponding project specific environmental documentation would identify potentially significant impacts with regard to displacement of private property, if any, and provide the

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appropriate mitigation measures. Impacts from transportation improvements would consider relocation assistance in accordance with the Federal Uniform Relocation and Real Property Acquisition Policies Act of 1970. In addition, as noted above, the 2045 MTP/SCS would result in a net increase of 37,088 housing units in the region. Therefore, in effect, the MTP/SCS includes the replacement housing that would be necessitated by individual projects. As a result, impacts related to housing and population displacement would be less than significant.

Mitigation Measures

None required.

c. Specific MTP/SCS Projects That May Result in Impacts

As discussed above, the 2045 MTP/SCS would result in less than significant impacts related to displacement of housing or people. Although some transportation network improvements, such as road widening or extension projects, would require acquisition of right-of-way in areas with high density housing or business along transportation corridors, it cannot feasibly be determined whether such widening or right-of-way acquisition would displace housing units or residents without project specific design details.

4.14 Public Services, Recreation, and Utilities

This section evaluates the public services, recreation, and utilities and service systems impacts of the proposed 2045 MTP/SCS.

4.14.1 Setting

a. Fire Protection

Fire Protection Services are provided by the local and state agencies across Monterey, San Benito, and Santa Cruz counties (Table 4.14-1). According to the California Department of Forestry and Fire Protection (CAL FIRE), fire threat in the region ranges from low to extreme depending on factors such as fuel rank, topography, presence of urban development, and expected fire frequency (CAL FIRE 2020). For a detailed discussion of wildfire hazard risk in the region, see Section 4.17, *Wildfire*.

Table 4.14-1 Fire Service Providers in the AMBAG Region¹

County/City/Town	Fire Service Provider	Number of Stations
Monterey County		
Big Sur	Big Sur Fire	1
Carmel Valley	Monterey County Regional Fire District	3
City of Carmel-by-the-Sea	Carmel-by-the-Sea Fire Department	1
City of Del Rey Oaks	Seaside Fire Department	1
City of Gonzales	Gonzales Fire Department	1
City of Greenfield	Greenfield Fire Department	1
City of King	King City Fire Department	1
City of Marina	Marina Fire Department	1
City of Monterey	Monterey Fire Department	6
City of Pacific Grove	Pacific Grove Fire Department	1
City of Salinas	City of Salinas Fire Department	5
City of Sand City	Monterey Fire Department	6
City of Seaside	Seaside Fire Department	1
City of Soledad	Soledad Fire Department	1
San Ardo	San Ardo Volunteer Fire Company	1
Spreckels	Spreckels Volunteer Fire Department	1
Monterey County (unincorporated)	CAL FIRE, Monterey County Regional Fire District, North Monterey County Fire Protection District, US Forest Service	11, 7, 3,

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County/City/Town	Fire Service Provider	Number of Stations
San Benito County		
City of Hollister	Hollister Fire Department	4
City of San Juan Bautista	San Juan Bautista Fire Department	1
San Benito County (unincorporated)	CAL FIRE	5
Santa Cruz County		
Aptos	Central Fire District	1
City of Capitola	Central Fire District	1
City of Santa Cruz	Central Fire District, Santa Cruz Fire Department	4
City of Scotts Valley	Scotts Valley Fire District	2
City of Watsonville	Watsonville Fire Department	2
Ben Lomond	Ben Lomond Fire Protection District	1
Boulder Creek	Boulder Creek Fire Protection District	1
Felton	Felton Fire Protection District	1
La Selva	Central Fire District	1
Live Oak	Central Fire District	1
Rio Del Mar	Central Fire District	1
Santa Cruz County (unincorporated)	CAL FIRE	13
Soquel	Central Fire District	1

¹ Table is an estimation of fire service providers within the AMBAG region and does not include private fire protection departments

Fire protection services are managed at the local level, typically by municipalities, counties, fire protection districts, or volunteer fire companies. California Government Code Section 38611 states that general law cities must establish a fire department unless it is included within the boundaries of an established fire protection district. State and federal lands are generally served by State and federal fire agencies (e.g., CALFIRE, National Park Service), and in some cases, businesses and native tribes manage their own fire departments. Each fire protection agency is responsible for serving its own prescribed area, but mutual aid agreements are in wide use across the region such that agencies can rely on assistance from neighboring agencies in the case of overwhelming demand. Fire protection service performance is typically measured by emergency response times or the ratio of service personnel to service area population. Because of the varying needs and challenges of each jurisdiction, however, performance measures differ among agencies, particularly when comparing urban and rural agencies.

Fire protection service performance is typically measured by emergency response times or the ratio of service personnel to service area population. Because of the varying needs and challenges of each jurisdiction, however, performance measures differ among agencies, particularly when comparing urban and rural agencies. Fire departments are assigned a Public Protection Classification from the International Organization for Standardization (ISO), a

private company that provides information about insurance risk. To assess fire protection agencies, ISO uses information about emergency dispatch; the number and location of engine companies; the amount of water needed to fight a fire; and local water supply, pressure, and flow. Local fire departments receive a classification from 1 to 10; a classification of 1 is the highest, and a classification of 10 indicates that fire suppression capabilities do not meet ISO's minimum standard.

b. Police Services

Police services are provided on the State, county, and local levels within the AMBAG region (Table 4.14-2). The California Highway Patrol (CHP) is responsible for police services along the sections of the interstate highway system within Monterey, San Benito, and Santa Cruz counties. It provides services for the management of traffic, emergency accident response, and protection of the highway system through safety enforcement on interstate roads. Through collaboration with local, State, and federal public safety agencies, its purpose is to minimize exposure of the public to unsafe conditions resulting from emergency accidents and highway impediments (CHP 2020).

Table 4.14-2 Police Service Providers in the AMBAG Region¹

County/City/Town	
Monterey County	
City of Carmel-by-the-Sea	Carmel Police Department
City of Del Rey Oaks	Del Rey Oaks Police Department
City of Gonzales	Gonzales Police Department
City of Greenfield	Greenfield Police Department
City of King	King City Police Department
City of Marina	Marina Police Department
City of Monterey	Monterey Police Department
City of Pacific Grove	Pacific Grove Police Department
City of Salinas	Salinas Police Department
City of Sand City	Sand City Police Department
City of Seaside	Seaside Police Department
City of Soledad	Soledad Police Department
Monterey County (unincorporated)	Monterey County Sheriff's Department
Monterey Regional Airport	Monterey Regional Airport Police
San Benito County	
City of Hollister	Hollister Police Department
City of San Juan Bautista	San Benito County Sheriff's Department
San Benito County (unincorporated)	San Benito County Sheriff's Department

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County/City/Town	
Santa Cruz County	
City of Capitola	Capitola Police Department
City of Santa Cruz	Santa Cruz Police Department
City of Scotts Valley	Scotts Valley Police Department
City of Watsonville	Watsonville Police Department
Santa Cruz County (unincorporated)	Santa Cruz County Sheriff's Department
¹ Table is an estimation of police service providers within the AMBAG region and does not include private security or University police services	

Each of the three counties in the AMBAG region has its own sheriff's department responsible for police services in unincorporated areas of each county. Additionally, each incorporated city and town has a police department responsible for police services within its own jurisdiction. Unincorporated areas or areas such as transit districts may also contract with county sheriff departments for police services instead of providing their own. Cities and towns may also contract with the county sheriff department to provide law enforcement services. Police service performances vary by jurisdiction but are typically measured in terms of response times, calculated in the number of minutes it takes a police officer to respond to an incident

c. Schools

Although the California public school system is under the policy direction of the State Legislature, the California Department of Education relies on local control for the management of school districts. School district governing boards and district administrators allocate resources among the schools of the district and set educational priorities for their schools. Monterey, San Benito, and Santa Cruz counties all provide residents with local public education facilities and services, including elementary, middle, secondary, and postsecondary schools, as well as special and adult education.

As of the 2019-2020 school year, there were 240 public and charter schools in the AMBAG region, with 129,483 enrolled students. There were 6,424 teachers in public and charter schools in the AMBAG region during the 2018-2019 school year. Table 4.14-3 lists the total number of elementary, junior high, middle, high, and K-12 schools within each county.

Table 4.14-3 AMBAG Region Public Schools and Enrollment by County

County	Total Schools ¹	Total Enrollment ¹	Total Teachers ²
Monterey County	132	77,387	3,966
San Benito County	27	11,545	509
Santa Cruz County	81	40,551	1,949
Total	243	129,483	6,424

¹ Total includes elementary schools, junior high, middle schools, high schools, and K-12 schools for the years 2019-2020

² Total includes number of teachers in classrooms in county for the years 2018-2019. This count includes itinerant and push-in/pull-out teachers but not adult education, Regional Occupation Programs (ROP), childcare, and preschool teachers.

Source: Education Data Partnership 2021

d. Emergency Medical Services

Each of the counties in the AMBAG region, including incorporated cities and towns within those counties, provides emergency medical services to its residents through the training and certification of paramedics and emergency medical technicians. The various departments charged with administering emergency medical services contract with private ambulance services and local fire departments to deploy emergency medical services within their service areas.

e. Libraries

The AMBAG region is served by 34 public libraries across all three counties, including branch libraries and mobile bookmobiles. Publicly funded libraries in California are required to maintain a certain amount of local funding depending on the population of a library's service area; however, there are no established standards with which California public libraries must comply (California State Library 2020).

f. Parks and Recreational Facilities

Of the 3.3 million acres within the AMBAG region, about 20 percent have been previously conserved as parks or open space and are included in the SCS land use pattern. These lands range from public use parks to rural open space and U.S. Forest Service Lands (AMBAG 2021).

Parks and open space are generally categorized according to their size and amenities. Smaller parks, such as pocket parks, neighborhood parks, community parks, urban forests, and community gardens, serve local communities, are typically located in urbanized areas, and often include a wide range of improvements from playing fields and picnic areas to playgrounds and fitness trails. Examples of these types of parks within the AMBAG region include San Lorenzo Park in Monterey County, Aromas Community Park in San Benito County, and Chanticleer Avenue Park in Santa Cruz County. These parks are most often managed by local park districts or municipalities, which typically set minimum standards for park acreage based on their population. Larger open space areas, such as regional parks, greenbelts, trails and pathways, natural and wildlife preserves, some private farmlands, some public rangelands, State parks, and federal parks, serve a broader geographic range, typically are

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located outside of major urbanized areas, and generally include fewer improvements. Examples of these within the AMBAG region include Jacks Peak Park in Monterey County, Fremont Peak State Park in San Benito County, and Wilder Ranch State Park in Santa Cruz County. Management of these parks is divided among a range of organizations and agencies, including regional park districts, State and federal government, private individuals, and nonprofit land trusts.

g. Water Supply

Monterey County

Many agencies and private companies provide water supply across Monterey County. These include cities, community water districts, and private water providers. Below are some examples of water providers within Monterey County.¹

California American Water

California American Water (CalAm) is a wholly owned subsidiary of the publicly traded company, American Water Works Company, Inc. (American Water). American Water, through its subsidiaries, provides water and wastewater services in the United States and Canada. It serves approximately 14 million people with drinking water, wastewater, and other water-related services in 46 states in the United States and Ontario, Canada. CalAm provides water and wastewater service to five regions of California including the Central Division, which includes the Monterey Peninsula. The Central Division serves approximately 41,000 customer connections and a population of approximately 99,794 (Monterey Peninsula Water Management District 2020).

The 2020 Urban Water Management Plan (UWMP) for the California-American Water Company's Salinas District covers northern Monterey County. The District includes several public water systems including Salinas, Las Lomas, Oak Hills, Salinas Hills, and Country Meadows Mutual (California American Water Company 2020). Total water use in the plan region is anticipated to be 16,988 AFY in 2030, the supply for which would be met from five groundwater subbasins. The 2020 UWMP includes conservation measures and BMPs to that are currently being implemented or are in the process of being implemented to reduce water demand in the area as well as water supply reliability and water shortage contingency planning.

Monterey County Water Resources Agency

The Monterey County Water Resources Agency manages, protects, stores, and conserves water resources in Monterey County for beneficial and environmental use, while minimizing damage from flooding to create a safe and sustainable water supply for present and future generations. The Monterey County Water Resources Agency owns two dams (Nacimiento

¹ The water providers listed herein are examples, and not intended to represent a full accounting of water purveyors in Monterey County.

and San Antonio) that are integral to providing flood control services and maintaining water resources for the County of Monterey.

Monterey Peninsula Water Management District

The mission of the Monterey Peninsula Water Management District (MPWMD) is to sustainably manage and augment the water resources of the Monterey Peninsula to meet the needs of its residents and business while protecting, restoring, and enhancing its natural and human environment (MPWMD 2021a). MPWMD serves approximately 112,000 people within the cities of Carmel-by-the-Sea, Del Rey Oaks, Monterey, Pacific Grove, Seaside, Sand City, Monterey Peninsula Airport District and portions of unincorporated Monterey County including Pebble Beach, Carmel Highlands and Carmel Valley. The primary goals of the District are to:

1. Increase the water supply to meet community and environmental needs
2. Assist California American Water in developing a legal water supply
3. Protect the quality of surface and groundwater resources and continue the restoration of the Carmel River environment
4. Instill public trust and confidence
5. Manage and allocate available water supplies and promote water conservation (MPWMD 2021b).

Pajaro/Sunny Mesa Community Services District

The Pajaro/Sunny Mesa Community Services District (PSMCSD) provides potable water services, fire flows, parks, and streetlight services to thousands of residents of North Monterey County. The District provides these services from the Pajaro River in the north, to Moss Landing in the west, to the U.S. 101 corridor in the south. It is the only public agency which provides public potable water services in the Pajaro, Elkhorn, and Prunedale areas (PSMCSD 2021).

Marina Coast Water District

The Marina Coast Water District (MCWD) is located in Monterey County, on the coast of the Monterey Bay at the northwest end of the Salinas Valley. The MCWD's jurisdictional service area is approximately 10.3 square miles, encompassing the City of Marina and portions of the former Fort Ord. The MCWD currently supplies approximately 3,300 AFY, or an average of 3 million gallons per day (MCWD 2021).

The MCWD 2020 UWMP characterizes historical water supplies and use, projects future demand and supply through 2040, and identifies supply augmentation projects and programs, cumulative water demand projections, and water shortage contingency plans. Supply and demand projections address climate variability and regional cooperative agreements (MCWD 2021).

San Benito County

Many agencies and private companies provide water supply across San Benito County. These include cities, community water districts, and private water providers. Below are some examples of water providers within San Benito County.² San Benito County Water District

The District owns two surface water treatment plants in the Hollister Urban Area that deliver drinking water to Sunnyslope County Water District and the City of Hollister. The District also manages local and imported surface water through the San Benito River System and the San Felipe Distribution System. The San Felipe System delivers imported Central Valley Project (CVP) water to irrigation, municipal and industrial customers. The drinking water that the District delivers to Sunnyslope County Water District and the City of Hollister ultimately becomes recycled water from the City of Hollister's Reclamation Plant. This reclaimed water is then used for irrigation water by local farmers (SBCWD 2018).

The San Benito County Water District prepared the 2020 Hollister Urban Area (HUA) UWMP was a collaborative effort with the Sunnyslope County Water District (Sunnyslope or SSCWD), and the City of Hollister adopted in July 2021. The 2020 HUA UWMP characterizes historical water supplies and use, projects future demand and supply through 2040, and identifies supply augmentation projects and programs, cumulative water demand projections, and water shortage contingency plans. Supply and demand projections address climate variability and regional cooperative agreements (SBCWD 2021).

City of Hollister Utilities Water Division

The City of Hollister Utilities Water Division is responsible for producing and distributing potable water for approximately half of the City of Hollister which is generally located west of Memorial Drive. The remaining portion of the City is serviced by Sunnyslope County Water District. The division is also responsible for wastewater collection advance to the wastewater treatment plants (City of Hollister 2014).

Sunnyslope Water District

Sunnyslope Water District's water system serves an area of approximately 3.9 square miles in the City of Hollister and surrounding areas. The District's wastewater system (of collection, treatment, and disposal) serves a smaller area within the County consisting of Ridgemark Estates and the Oak Creek and Quail Hollow subdivisions. The District serves approximately 6,440 water accounts, of which 99.8 percent are residential customers, and approximately 1,237 sewer accounts, of which 99 percent are residential customers (Sunnyslope Water 2021).

City of San Juan Bautista Water System

The City of San Juan Bautista Water System supplies water to residents and businesses within the City of San Juan Bautista. Water in the system is primarily from a series of groundwater

² The water providers listed herein are examples, and not intended to represent a full accounting of water purveyors in San Benito County.

wells located near the south end of San Juan Bautista, as well as a small reservoir (SWRCB 2021).

The City of San Juan Bautista approved its 2020 Water Master Plan in November 2020. The purpose of the 2020 Water Master Plan is to document the planned land use for the City of San Juan Bautista, identify existing and future demands generated within the City, and to plan water infrastructure to provide adequate levels of service to the customers at the lowest lifecycle cost feasible (Akel Engineering Group, Inc. 2020).

Santa Cruz County

Many agencies and private companies provide water supply across Santa Cruz County. These include cities, community water districts, and private water providers. Below are examples of water providers within Santa Cruz County.³ San Lorenzo Valley Water District

The San Lorenzo Valley Water District (SLVWD) supplies water in the San Lorenzo Valley to the communities of Boulder Creek, Brookdale, Ben Lomond, Lompico, Zayante, Scotts Valley, Manana Woods and Felton. Through a network of distribution lines, pump stations and reservoirs it serves more than 7900 connections (SLVWD 2021).

Scotts Valley Water District

The Scotts Valley Water District (SVWD) is located six miles north of the City of Santa Cruz, along State Highway 17 and covers approximately six square miles including most of the incorporated area of the City of Scotts Valley and a portion of the unincorporated area north of the City — about 10,700 people through 4,200 service connections. It generally follows the boundary of the City of Scotts Valley. Notable exceptions to the service area include Pasatiempo Pines and Manana Woods subdivisions, and Vista Del Lago and Spring Lakes Mobile Home Parks, which are served by San Lorenzo Valley Water District (SVWD 2021).

SVWD and SLVWD collaborated to prepare the 2020 UWMP for their combined service areas. The 2020 UWMP was approved in June 2021. The purpose of the 2020 UWMP is for SVWD and SLVWD to conduct long-term resource planning and establish management measures to ensure adequate water supplies are available to meet existing and future demands. The 2020 UWMP provides a framework to help water suppliers maintain efficient use of urban water supplies, promote conservation programs and policies, ensure that sufficient water supplies are available for future beneficial use, and provide a response mechanism during drought conditions or other water supply shortages (SVWD 2021)

City of Santa Cruz Water Department

The City of Santa Cruz Water Department operates a system that includes more than 300 miles of pipes to bring water to customers that serves almost 100,000 people. Santa Cruz's drinking water is supplied primarily through surface water collected from local rainfall (SCWD 2021).

³ The water providers listed herein are examples, and not intended to represent a full accounting of water purveyors in San Benito County.

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The City of Santa Cruz adopted its more current UWMP in August 2016, but has recently circulated the updated 2020 UWMP for review. The 2020 UWMP is currently not yet adopted, but a version has been made available on the City's website and is proposed for adoption. The draft 2020 version addresses the same primary topics as the 2015 UWMP, including water demand and supply, water conservation, and the efficient use of water supplies. The 2020 UWMP also includes a Water Shortage Contingency Plan (City of Santa Cruz 2021).

Soquel Creek Water District

The Soquel Creek Water District serves approximately 40,400 customers through 15,800 connections in four service areas within mid-Santa Cruz County solely with groundwater. Approximately 90 percent of its customers are residential (Soquel Creek Water 2021).

The Soquel Creek Water District's 2020 UWMP was approved by the Board of Directors on June 15, 2021. The 2020 UWMP is a long-range planning document that assesses current water demand, projects future demand over a minimum 20-year planning horizon, and identifies a mix of water resources and conservation efforts to meet future demand. The 2020 UWMP also includes the District's Water Shortage Contingency Plan (WSCP) which identifies water shortage stages and associated curtailment actions to allow for efficient management of any water shortage with predictability and accountability (Soquel Creek Water District 2021).

City of Watsonville Department of Public Works and Utilities

The City provides water service to residential, commercial, industrial, and institutional customers. It serves the City of Watsonville and parts of unincorporated areas of Santa Cruz County. The City's regional water system consists of 190 miles of pipelines, 14 wells, 8 reservoirs and the Corralitos Filtration Plant treatment plant that delivers clean, safe water to a service population of 66,000 customers (Watsonville Water Division 2021).

The City of Watsonville's 2020 UWMP was approved in July 2021. The UWMP gathers, characterizes, and synthesizes water-related information from numerous sources to assess and project the City's water reliability well into the future. The City's 2020 UWMP includes water reliability forecasts through the year 2045. It also acts as a guide to maintain efficient use of urban water supplies, promote conservation programs and policies, and proactively plan and update the City's strategies to address potential water shortages and drought conditions (City of Watsonville 2021).

Pajaro Valley Water Management Agency

The Pajaro Valley Water Management Agency (PV Water) is a state-chartered water management district formed to manage existing and supplemental water supplies in order to prevent further increase in, and to accomplish continuing reduction of, long-term overdraft. PV Water also works to provide and ensure sufficient water supplies for present and future anticipated needs within its boundaries, generally the greater coastal Pajaro Valley (PV Water 2020).

h. Wastewater Treatment

Wastewater is generated by residential, commercial, and industrial sources throughout the AMBAG region. Treatment of wastewater provides protection for human health and receiving water bodies, preservation of the health of aquatic and riparian species, and improved supply reliability through the removal of harmful pollutants from discharges. Urbanized and unincorporated areas of cities and counties throughout the AMBAG region provide wastewater treatment facilities. These facilities include systems made up of pipelines, pipe stations, interceptor stations and discharge stations. Treatment plants send wastewater through up to three treatment processes (primary, secondary, tertiary) depending on treatment requirements established by the pertinent Regional Water Quality Control Board (RWQCB) for the plant. The level of treatment is often dictated by where treated effluent is discharged (land, water body) and if there is an end use that requires higher treatment levels (recycling). Wastewater is also recycled for other uses, such as agriculture, irrigation, or landscaping. Treatment requirements are promulgated by the RWQCB and are typically reviewed, along with treatment capacity, every five years. As a result of this process, planning and upgrading of treatment plants is an ongoing process for each plant.

Wastewater treatment in the AMBAG region is provided by various agencies, as well as individual city and town wastewater treatment systems. Some treatment plants serve individual cities, while others serve multiple jurisdictions. Because of the dynamic nature of treatment plant planning/upgrading/expansion, it is not practical, at this regional and programmatic level of analysis, to characterize treatment plant technology, flows, and capacity. However, below is a list of wastewater treatment providers or facilities in the AMBAG region. The wastewater providers and facilities listed herein are examples, and not intended to represent a full accounting of wastewater providers or facilities in the AMBAG region:

- Monterey One Water: Regional Treatment Plant near Marina
- City of Greenfield Wastewater Treatment Plant
- Seaside County Sanitation District Sewer Collection System
- City Of Salinas Industrial Wastewater Treatment Plant
- City of Hollister Wastewater Treatment Plant
- Sunnyslope County Water District: Lessalt Wastewater Treatment Plant near Hollister
- City of Santa Cruz Wastewater Treatment Facility
- City of Scotts Valley Water Reclamation Facility
- City of Watsonville Wastewater Treatment Facility

i. Stormwater Management

Stormwater has been identified as urban runoff by the U.S. Environmental Protection Agency. After a precipitation event, polluted runoff is discharged over land or through storm sewer systems, often untreated with direct flow into water bodies. If left uncontrolled, this polluted water can result in the destruction of wildlife and aquatic ecosystems and can threaten public

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health. The National Pollutant Discharge Elimination System (NPDES) permitting program provides implementation measures for reducing potentially harmful pollutants found in stormwater runoff from entering water bodies or affecting public health. Additionally, stormwater capture systems assist in maintaining flood protection and create opportunities for ecosystem protection and restoration.

Additionally, each county has its own storm water pollution management programs, which are intended to facilitate compliance with State and federal regulations through coordination with local municipalities, residents, businesses, and schools. These programs provide initiatives for preventing stormwater pollution; protecting and enhancing water quality in watersheds, waterways, creeks, and wetlands; and preventing water pollution in the Monterey Bay and Pacific Ocean.

Stormwater runoff occurs when precipitation from rain and snowmelt events flows over land or impervious surfaces and does not percolate into the ground. In rural areas, storm water flows into natural drainages, such as creek, streams, and rivers. In the urban areas of the AMBAG region, storm water is collected in Municipal Separate Storm Sewer Systems (MS4s). MS4s collect storm water runoff in a system of conveyances, including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains. Storm water systems and facilities are necessary to drain water and prevent flooding in urban areas, for controlling erosion, and for protecting water quality.

As the runoff flows over the land or impervious surfaces (paved streets, parking lots, and building rooftops), it accumulates debris, chemicals, sediment, or other pollutants that could adversely affect water quality if the runoff is discharged untreated. Stormwater pollution prevention is discussed in detail in Section 4.10, *Hydrology, Water Quality, and Water Supply*. Each MS4 operator, identified in Table 4.14-4, is responsible for operation, maintenance, and management of their own system. MS4s are interconnected and often share facilities, cooperatively manage systems, and coordinate pollution control efforts.

Table 4.14-4 Phase II Regulated Small MS4s within the AMBAG Region

MS4 (City, County, University, etc.)	County	MS4 Type
7th District Agricultural Association - Monterey County Fairgrounds	Monterey	Non- Traditional
California State Parks Monterey District Monterey - Point Lobos State Reserve	Monterey	Non-Traditional
California State University Monterey Bay	Monterey	Waiver
Julia Pfeiffer Burns State Park	Monterey	Non-Traditional
US Army Presidio of Monterey	Monterey	Non-Traditional
California State Parks Monterey District Monterey - Carmel River SB	Monterey	Non-Traditional
City of Carmel-by-the-Sea	Monterey	Traditional
City of Del Rey Oaks	Monterey	Traditional
City of Gonzales	Monterey	Traditional
City of King	Monterey	Traditional
City of Marina	Monterey	Traditional
City of Monterey	Monterey	Traditional
City of Pacific Grove	Monterey	Traditional
City of Sand City	Monterey	Traditional
City of Seaside Phase II Permit	Monterey	Traditional
City of Soledad	Monterey	Traditional
County of Monterey	Monterey	Traditional
City of Greenfield - Waiver	Monterey	Waiver
City of Hollister	San Benito	Traditional
California State Parks Monterey District Monterey - Año Nuevo State Reserve and State Park	Santa Cruz	Non-Traditional
Santa Cruz County Fairgrounds	Santa Cruz	Non-Traditional
University Of California Santa Cruz	Santa Cruz	Non-Traditional
City of Capitola	Santa Cruz	Traditional
City of Santa Cruz	Santa Cruz	Traditional
City of Scotts Valley	Santa Cruz	Traditional
City of Watsonville	Santa Cruz	Traditional
County of Santa Cruz	Santa Cruz	Traditional

Source: Central Coast RWQCB 2018

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j. Electric Power and Natural Gas Facilities

Electric, liquid fuel, and natural gas energy sources make up most of the AMBAG energy systems, which are becoming increasingly diversified as newer, more renewable energy sources are developed and expanded. A range of public and private providers operate the energy systems in the region and maintain the regional infrastructure systems. Pacific Gas and Electric Company (PG&E) is the major operator of electricity infrastructure in the AMBAG region. PG&E is one of the largest combination natural gas and electric utilities in the United States. The company, a subsidiary of PG&E Corporation, serves approximately 16 million people in 70,000 square miles of northern and central California. PG&E provides electric service to Monterey, San Benito, and Santa Cruz counties with natural gas coverage to most areas in the region except in some locations where no natural gas service is available. PG&E obtains its electricity from natural gas, fossil fuels, nuclear power, hydroelectric power, and eligible renewable resources.

As discussed in Section 4.6, *Energy*, parts of the AMBAG region are served by Central Coast Community Energy (3CE; formerly Monterey Bay Community Power). 3CE is a Community Choice Energy agency established by local communities to source clean and renewable electricity for Monterey, San Benito, and Santa Cruz counties and now parts of San Luis Obispo and Santa Barbara counties. In total, 3CE has enrolled 33 communities throughout the Central Coast. It serves residents while retaining their utility provider's traditional role delivering power and maintaining electric infrastructure. In its first two years of operations, 3CE contracted for 453.3 MW of long term eligible renewable resources and 192.7 MW of battery storage in furtherance of California's 100 percent GHG-free by 2045 goal (3CE 2021).⁴

k. Telecommunication

Telecommunications are mainly a privately owned enterprise and are offered by a variety of companies with different service capacities across the AMBAG region. The number of providers offering the service, the type of service available, and the transmission speed of the service all affect the quality of telecommunications. This approach differs from that of most other utilities, which are generally publicly owned or offered by limited or individual service providers in a given area.

Many telecommunications providers offer phone, internet, and/or television service in Monterey, San Benito, and Santa Cruz counties. Telecommunications providers will usually complete infrastructure and other service improvements for an area as the need arises to meet customer demand. Additionally, some areas in the AMBAG region do not have access to cellular or broadband services, typically in rural areas or locations marked by topographical features that make accessible services difficult.

⁴ This EIR provides only a partial list of energy providers in the AMBAG region as examples. There are other energy providers in the AMBAG region that are not listed or described in this EIR.

I. Solid Waste Disposal

Monterey, San Benito, and Santa Cruz counties each have a local enforcement agency (LEA) covering all solid waste facilities in the region. LEAs are responsible for ensuring the correct operation and closure of solid waste facilities in the State, as well as for guaranteeing the proper storage and transportation of solid wastes. In concurrence with the California Department of Resources Recycling and Recovery (CalRecycle), LEAs issue operating permits to facilities, including landfills, transfer stations, material recovery, and composting facilities. Solid waste is the garbage, refuse, and other discarded solid materials generated by residential, commercial, and industrial activities.

CalRecycle identifies 10 categories of wastes: paper, glass, metal, electronics, plastic, other organic, construction and demolition (C&D), household hazardous waste, special waste, and mixed residue. Solid waste generation is measured by disposal and diversion. PRC Section 40192 defines disposal as “the final deposition of solid wastes onto land, into the atmosphere, or into the waters of the state.” Solid waste that is disposed of in landfills is measured in volume (cubic yards) and weight (tons). Diversion includes programs and practices such as waste prevention and source reduction, recycling, reuse, and composting that reduce the total amount of waste that requires disposal.

There are two active operating landfills in Monterey County, one in San Benito County, and three in Santa Cruz County. Table 4.14-5 shows the remaining capacity of landfills located in the AMBAG region and their estimated date of closure.

Table 4.14-5 Landfills Located in the AMBAG Region

County	Max Permitted Throughput (tons per day)	Remaining Capacity (tons)	Anticipated Closure Date
Monterey County			
Johnson Canyon Sanitary Landfill	1,574	6,923,297	12/21/2055
Monterey Peninsula Landfill	3,500	48,560,000	2/28/2107
San Benito County			
John Smith Road Landfill	1,000	3,499,000	1/1/2032
Santa Cruz County			
City of Santa Cruz Resource Recovery Facility	535	4,806,477	1/1/2062
City of Watsonville Landfill	275	1,417,561	12/31/2029
Buena Vista Drive Sanitary Landfill	838	2,206,541	7/1/2031

Source: CalRecycle 2021

4.14.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

Federal Fire Prevention and Control Act of 1974

The National Fire Incident Reporting System (NFIRS) is a system established by the National Fire Data Center of the United States Fire Administration (USFA) to carry out the intentions of the Federal Fire Prevention and Control Act of 1974. The Act authorizes the USFA to gather and analyze information on the magnitude of the Nation's fire problem, as well as its detailed characteristics and trends. The Act further authorizes the USFA to develop uniform data reporting methods, and to encourage and assist State agencies in developing and reporting data.

National Fire Protection Association, Standard 901

The National Fire Protection Association Standard 901 provides the latest guidelines to help fire departments and other fire protection organizations effectively share data with other agencies. This standard provides common language and definitions that define and describe elements and classifications used by many fire departments in the United States and other countries to describe fire damage potential and experience during incidents.

California Building Standards Code (Title 24, CCR)

Title 24 applies to all buildings throughout the State of California, and includes requirements for structural, mechanical, electrical, and plumbing systems, and requires measures for energy conservation, green design, construction and maintenance, fire and life safety and accessibility. Cities and counties are required by state law to enforce Title 24. More restrictive ordinances can also be adopted by cities and counties due to specific geographical conditions. Included among the twelve parts of Title 24 are Part 9, which includes the California Fire Code, and is based on the 2009 International Fire Code, and Part 11, which includes the California Green Building Standards Code that includes measures for incorporating energy efficiency into buildings.

Safe Drinking Water Act

The Federal Safe Drinking Water Act (SDWA) establishes standards for contaminants in drinking water supplies. Contaminants regulated by the SDWA include metals, nitrates, asbestos, total dissolved solids, and microbes.

National Pollution Discharge Elimination System (NPDES) Permits

The NPDES permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of

pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

Wastewater discharge is regulated under the NPDES permit program for direct discharges into receiving waters and by the National Pretreatment Program for indirect discharges to a sewage treatment plant. In California, the Federal requirements are administered by the SWRCB, and individual NPDES permits are issued by the RWQCBs.

Resource Recovery and Conservation Act (RCRA) of 1976

RCRA Subtitle D focuses on state and local governments as the primary planning, regulating, and implementing entities for the management of nonhazardous solid waste, such as household garbage and nonhazardous industrial solid waste. To promote the use of safer units for solid waste disposal, Subtitle D provides regulations for the generation; transportation; and treatment, storage, or disposal of hazardous wastes. USEPA developed federal criteria for the proper design and operation of municipal solid waste landfills (MSWLFs) and other solid waste disposal facilities. USEPA approved the State of California's program, a joint effort of the CIWMB, SWRCB, RWQCBs, and LEAs, on October 7, 1993.

Title 40 of the Code of Federal Regulations (CFR)

Title 40 of the Code of Federal Regulations (CFR), Part 258 (Resource Conservation and Recovery Act RCRA, Subtitle D) contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the Federal landfill criteria. The federal regulations address the location, operation, design, groundwater monitoring, and closure of landfills.

Department of Transportation Act Section 4f

Passed in 1966, the Department of Transportation Act includes Section 4(f), which states that FHWA and other USDOT agencies cannot approve the use of land from public state parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless certain conditions apply. These exceptions are as follows: If there is no feasible and prudent avoidance alternative to the use of land, and if the action includes all possible planning to minimize harm to the property resulting from such use; or if the Administration determines that the use of the property will have a de minimis impact (49 USC Section 303).

b. State Laws, Regulations, and Policies

California Building Standards Code (Title 24, CCR)

Title 24 applies to all buildings throughout the State of California, and includes requirements for structural, mechanical, electrical, and plumbing systems, and requires measures for energy conservation, green design, construction and maintenance, fire and life safety and accessibility. Cities and counties are required by state law to enforce Title 24. More restrictive ordinances can also be adopted by cities and counties due to specific geographical conditions.

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Included among the twelve parts of Title 24 are Part 9, which includes the California Fire Code, and is based on the 2009 International Fire Code, and Part 11, which includes the California Green Building Standards Code that includes measures for incorporating energy efficiency into buildings.

Quimby Act

As a condition of approval of a final tract or parcel map, the California Quimby Act allows a city or town to require dedication of land, the payment of in-lieu fees, or a combination of both to be used for the provision of parks and recreational services. Under the act, cities and towns can require land or in-lieu fees for a minimum of three acres per 1,000 residents, with the possibility of increasing the requirement to a maximum of five acres per 1,000 residents if the city or town already provides more than three acres per 1,000 residents.

California Coastal Act, Coastal Recreation Policies

California Coastal Act policies related to coastal recreation include Public Resources Code Section 30210, which requires that maximum access and recreational opportunities shall be provided for all people, and Section 30213, which protects lower cost visitor and recreational facilities, and encourages the provision of public recreational opportunities.

Senate Bill 50 – Leroy F Greene Schools Facilities Act of 1998

SB 50, or the Leroy F. Greene School Facilities Act of 1998, restricts the ability of local agencies to deny project approvals on the basis that public school facilities (classrooms, auditoriums, etc.) are inadequate. School impact fees are collected at the time when building permits are issued. Payment of school fees are also collected at the time when building permits are issued. Payment of school fees is required by SB 50 for all new residential development projects and is considered “full and complete mitigation” of any school impacts. School impact fees are payments to offset capital cost impacts associated with new developments, which result primarily from costs of additional facilities, related furnishings and equipment, and projected capital maintenance requirements. As such, agencies cannot require additional mitigation for any school impacts (Chapter 407, Statutes of 1998).

Safe Drinking Water Act (1976)

California enacted its own Safe Drinking Water Act in 1976. The California Department of Public Health (CDPH) [formerly the California Department of Health Services (CDHS)] has been granted primary enforcement responsibility for the SDWA. Title 22 of the California Administrative Code establishes CDPH authority and stipulates drinking water quality and monitoring standards. These standards are equal to or more stringent than the Federal standards.

Title 22 of the California Water Code

The California Water Code requires the CDPH to establish water reclamation criteria. In 1975, the former CDHS prepared Title 22 to fulfill this requirement. Title 22 regulates production

and use of reclaimed water in California by establishing three categories of reclaimed water: primary effluent, which typically includes grit removal and initial sedimentation or settling tanks; adequately disinfected, oxidized effluent (secondary effluent) which typically involves aeration and additional settling basins; and adequately disinfected, oxidized, coagulated, clarified, filtered effluent (tertiary effluent) which typically involves filtration and chlorination. In addition to defining reclaimed water uses, Title 22 defines requirements for sampling and analysis of effluent and requires specific design requirements for facilities.

Water Supply Planning

SB 610 (Chapter 643, Statutes of 2001) and Senate Bill 221 (Chapter 642, Statutes of 2001) amended state law to improve the link between information on water supply availability and certain land use decisions made by cities and counties. The intent of SB 610 is to ensure that sufficient water supplies are available for growing communities. SB 610 requires local public water providers with more than 3,000 service connections to prepare a Water Supply Assessment (WSA) for any project that is subject to CEQA and meets specified minimum size criteria.

The WSA must document sources of water supply, quantify water demands, and compare future water supply and demand to show that sufficient water will be available to serve the project. Water supply must be assessed for normal, single dry, and multiple dry water years during a 20-year forecast. If supplies are found to be insufficient to serve the project, the WSA must include plans for acquiring sufficient supplies.

SB 221 (Chapter 642, Statutes of 2001)

SB 221 (Chapter 642, Statutes of 2001) applies to subdivisions of more than 500 dwelling units. Like SB 610, it is intended to ensure an adequate water supply for new development. SB 221 requires that approval of a tentative map include a requirement that a sufficient water supply is available.

Urban Water Management Planning Act

In 1983, the California Legislature enacted the Urban Water Management Planning Act (Water Code, Section 10610 et seq.), which requires urban water suppliers to develop water management plans to actively pursue the efficient use of available supplies. Every five years, water suppliers are required to develop UWMPs to identify short-term and long-term water demand management measures to meet growing water demands.

Urban Water Management Plans (UWMP) in the AMBAG region include, but are not limited to, the California American Water – Monterey County District UWMP (June 2021); California Water Service: Salinas District UWMP (June 2021); City of Santa Cruz 2020 Urban Water Management Plan (October 2021); Scotts Valley and San Lorenzo Valley Water District 2020 Urban Water Management Plan (June 2021); and the Hollister Urban Area UWMP (July 2016). Brief descriptions of some of the UWMPs in the AMBAG region are provided below. The descriptions include a portion of the total UWMPs in the region as examples.

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The 2020 UWMP for the California-American Water Company's Salinas District covers northern Monterey County. The District includes several public water systems including Salinas, Las Lomas, Oak Hills, Salinas Hills, and Country Meadows Mutual (California American Water Company 2020). Total water use in the plan region is anticipated to be 16,988 AFY in 2030, the supply for which would be met from five groundwater subbasins. The 2020 UWMP includes conservation measures and BMPs that are currently being implemented or are in the process of being implemented to reduce water demand in the area as well as water supply reliability and water shortage contingency planning.

SVWD and SLVWD prepared a draft 2020 UWMP (SVWD and SLVWD 2021). The two districts are adjacent and prepared a joint plan for the first time. SVWD is approximately 4.8 square miles and includes most of the City of Scotts Valley as well as some unincorporated areas north of the City. SLVWD is approximately 98 square miles and includes the remainder of Scotts Valley, Felton, and unincorporated communities. Water demand in 2045 in SVWD is projected to be 1,144 AFY and water supply is estimated at 1,454 AFY including recycled water. Water demand in 2045 in SLVWD is projected to be 2,277 AFY and water supply is estimated at 2,325 AFY including recycled water (SVWD 2021, SLVWD 2021).

The Soquel Creek Water District (SqCWD) is a nonprofit, local government agency that provides potable water service and groundwater resource management within its service area. Founded in 1961 under the County Water District Law (Water Code, Division 12, Section 30000 et. seq.), SqCWD's original purpose was to provide flood control and water conservation services. SqCWD adopted its 2020 UWMP on June 15, 2021. The SqCWD's service area includes seven miles of shoreline along Monterey Bay, and extends one to three miles inland into the foothills of the Santa Cruz Mountains, essentially following the County Urban Services Line. The City of Capitola is the only incorporated area within the SqCWD service area. Unincorporated communities include Aptos, La Selva Beach, Rio Del Mar, Seascapes, Seacliff Beach, and Soquel. Projected demand for potable water in 2040 is 3,655 acre feet per year (AFY) and the projected supply is 3,655 AFY (SqCWD 2021).

The City of Santa Cruz UWMP was prepared by the City of Santa Cruz Water Department in August 2016 (City of Santa Cruz 2016). The UWMP covers approximately 20 square miles including the City of Santa Cruz, a small part of the City of Capitola, adjoining unincorporated areas in Santa Cruz County, and coastal agricultural lands north of the city. Projected demand for potable water in 2035 is 3,220 million gallons per year (MGY) and the projected supply is 3,180 MGY. Therefore, there is not enough supply to meet the projected demand (City of Santa Cruz 2016).

Senate Bill 610 and 221

Senate Bill (SB) 610 and SB 221 of 2001 improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and 221 promote more collaborative planning between local water suppliers and cities and counties. Under SB 610, water supply assessments (WSAs) must be prepared by local public water providers for certain city and county land use projects subject to CEQA. Under SB 221, approval by a city or county of certain residential subdivisions requires an affirmative written

verification of sufficient water supply. SB 221 is intended as a “fail safe” mechanism to ensure that collaboration on finding the need for water supplies to serve new large subdivision occurs before construction begins.

State Water Conservation Requirements

Executive Order B-37-16 established a new water use efficiency framework for California. The order bolstered the state’s drought resilience and preparedness by establishing longer-term water conservation measures that include permanent monthly water use reporting, new urban water use targets, reducing system leaks and eliminating clearly wasteful practices, strengthening urban drought contingency plans, and improving agricultural water management and drought plans. Based on monthly water use reporting, most urban water suppliers reported sufficient supplies to meet demand in three additional dry years and are not subject to state conservation mandates. On February 8, 2017, SWRCB adopted an emergency water conservation regulation to amend and extend the May 2016 regulation.

Water Efficiency Legislation

Legislation passed in 2018 (AB 1668 and SB 606) directed the State Water Board to adopt long-term standards for the efficient use of water by June 30, 2022.

California Department of Resources Recycling and Recovery (CalRecycle)

CalRecycle (formerly the California Integrated Waste Management Board) oversees, manages, and monitors waste generated in California. It provides limited grants and loans to help California cities, counties, businesses, and organizations meet the State waste reduction, reuse, and recycling goals. It also provides funds to clean up solid waste disposal sites and co-disposal sites, including facilities that accept hazardous waste substances and non-hazardous waste. CalRecycle develops, manages, and enforces waste disposal and recycling regulations, including AB 939 and SB 1016, both of which are described below.

Integrated Waste Management Act – Assembly Bill 939

AB 939 (Public Resources Code 41780) requires cities and counties to prepare integrated waste management plans (IWMPs) and to divert 50 percent of solid waste from landfills beginning in calendar year 2000 and each year thereafter. AB 939 also requires cities and counties to prepare Source Reduction and Recycling Elements (SRRE) as part of the IWMP. These elements are designed to develop recycling services to achieve diversion goals, stimulate local recycling in manufacturing and stimulate the purchase of recycled products.

California State Recycling Law – Assembly Bill 341

AB 341 is California’s Mandatory Recycling Law for commercial businesses, multifamily complexes, and public entities. AB 341 went into effect on July 1, 2012, and requires all businesses that generate four or more cubic yards of garbage per week and multifamily dwellings with five or more units to recycle. AB 341 also sets a statewide goal of 75 percent waste diversion.

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California Mandatory Organics Recycling Law – Assembly Bill 1826

AB 1826 is California's Mandatory Organics Recycling Law for commercial businesses and multifamily complexes. AB 1826 requires businesses to recycle organic waste on and after April 1, 2016. By January 1, 2016, local jurisdictions are required to implement an organic waste recycling program that diverts organic waste generated by businesses and multifamily residential dwellings consisting of five or more units. AB 1826 phases the mandatory recycling of commercial organic waste over time based on volume of waste generated by businesses. In April 2016, businesses generating over eight cubic yards of organic waste per week are required to arrange for organic waste recycling services; in January 2017, businesses generating over four cubic yards of organic waste per week will do the same. Additionally, jurisdictions are required to submit annual reports. In 2020, CalRecycle will conduct a formal review to determine if statewide organic waste disposal has been reduced by 50 percent of 2014 levels. If not, the mandate will expand to include businesses that generate over two cubic yards of organic waste per week.

Senate Bill 1383

In September 2016, the Governor signed into law SB 1383 which establishes methane emissions reduction targets in a statewide effort to reduce emissions of short-lived climate pollutants (SLCP) in various sectors of California's economy. 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 bill builds upon California's leading commitments to reduce greenhouse gas emissions and air pollution statewide. The Governor identified reductions of short-lived climate pollutant emissions, including methane emissions, as one of five key climate change strategy pillars necessary to meet California's target to reduce GHG emissions 40 percent below 1990 levels by 2030 as established in SB 32 (Pavley, Chapter 249, Statutes of 2016).

Senate Bill 1016

SB 1016 requires that the 50 percent solid waste diversion requirement established by AB 939 be expressed in pounds per person per day. SB 1016 changed the CalRecycle review process for each municipality's integrated waste management plan. After an initial determination of diversion requirements in 2006 and establishing diversion rates for subsequent calendar years, the Board reviews a jurisdiction's diversion rate compliance in accordance with a specified schedule. Beginning January 1, 2018, the Board will be required to review a jurisdiction's source reduction and recycling element and hazardous waste element once every two years.

c. Regional and Local Laws, Regulations, and Policies

Planning for water management, wastewater and stormwater management, and solid waste disposal is conducted by local agencies to support their long-term resource planning and ensure adequate service to meet existing and future demands. In addition to federal and State regulations governing these planning efforts, cities, counties, and water districts may

provide regulatory advisement on water resources, water treatment, and solid waste disposal. Many jurisdictions incorporate goals and policies relating to these topic areas in their municipal codes, general plans, development standards, or other regulations (e.g., utility master plans, solid waste management plans).

City and County General Plans

State law requires every city and county to adopt a general plan that expresses the community's development goals and embodies public policy relative to the distribution of future land uses, both public and private (OPR 2017). Included in the general plan are potential hazards, policies, and mitigation measures related to recreation, as well as public services and safety. The elements contained in the general plan are intended to promote the highest quality of life in a given jurisdiction.

Each general plan is required to have an open space element that guides the comprehensive and long range preservation and conservation of "open space land." A wide range of topics are addressed in the open space element, including open space for the preservation of natural resources, open space used for the managed production of resources, open space for outdoor recreation, open space for public health and safety, demands for trail oriented recreational use, the retention of all publicly owned corridors for future use, and the feasibility of integrating city and county trail routes with appropriate segments of the California Recreational Trails System. Policies and strategies for parks and recreation may include standards for park acreage and requirements for the provision of parks in new residential developments.

Each general plan is also required to have a safety element, which describes plans to promote safety within the jurisdiction, as well as the services available to maintain safety. The purpose of the safety element is to reduce the possible risks related to death, injuries, property damage, and economic and social dislocation resulting from fires, floods, earthquakes, landslides, and other hazards. Included in the safety element is the emergency response section, which describes the service areas of emergency services, including fire, police, and medical, and an evaluation of the adequacy of the existing service and the demand for additional emergency services.

In addition, CCR Section 65302(g) states that a city may adopt a county's safety element "to the extent that the county's safety element is sufficiently detailed and contains appropriate programs and policies for adoption by a city."

General plan policies relating to library services may involve the library level of service, capital facility funding, and library siting. In addition, general plans can evaluate proposed library facilities for consistency with library master plans and explore methods for financing new, expanded, or upgraded library facilities.

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Monterey County

Monterey County General Plan

The Monterey County General Plan (Monterey County 2010a) includes 12 planning areas. Example policies within the General Plan that are relevant to public services, recreation and open space, and utilities are listed below:

- **Policy PS-1.1.** Adequate Public Facilities and Services (APFS) requirements shall:
 - a. Ensure that APFS needed to support new development are available to meet or exceed the level of service of “Infrastructure and Service Standards” (Table PS-1) concurrent with the impacts of such development;
 - b. Encourage development in infill areas where APFS are available, while acknowledging the rights of property owners to economically viable use of existing legal lots of record throughout the county; and
 - c. Seek to achieve acceptable level of service (LOS) standards through improvements funded by fair share impact fees and planned capital improvements (CIFPs).
- **Policy PS-13.1.** The County shall, when planning for development, require utility corridor rights-of-way or other easements of sufficient size to accommodate current and future needs.
- **Policy OS-1.2.** Development in designated visually sensitive areas shall be subordinate to the natural features of the area.

City of Carmel-by-the-Sea General Plan

The City of Carmel-by-the-Sea adopted its General Plan in 2003 (City of Carmel-by-the-Sea 2003). Example policies within the General Plan that are relevant to public services, recreation and open space, and utilities are listed below:

- **Policy P6-15.** Based on identified housing, parking, recreation public and cultural facilities, parks and open space needs, develop, maintain, and periodically review a list of property within the City and its Sphere of Influence suitable for acquisition and/or disposition by the City-and establish priorities for potential actions.
- **Policy P6-19.** Maintain the City’s roadways, storm drains, and other public infrastructure to ensure they are safe and functioning adequately.
- **Policy P7-2.** Encourage the full utilization and opportunities within permanent open space areas for such uses as pedestrian paths and scenic viewpoints that would provide for public enjoyment of these areas.

City of Gonzales General Plan

The City of Gonzales adopted the Gonzales 2010 General Plan in 2011 (City of Gonzales 2010). Example policies within the General Plan that are relevant to public services, recreation and open space, and utilities are listed below:

- **Policy HS-4.1.** Establish and maintain levels of service for police and fire that meet national and/or regional standards. Proposals for new development shall be evaluated against these service levels to determine the extent of improvements needed.
- **Policy COS-4.3.** Maintain agricultural open space around Gonzales as a means of giving form and definition to the City. To this end, permit urban development only within the areas designated for urban uses on the Land Use Diagram. Land immediately beyond this boundary should remain in agricultural use utilizing agricultural easement funds outlines in Implementing Action COS-4.3.3 (Agricultural Impact Fund), other mitigation measures that may arise as a result of project level CEQA review, and any other feasible methods to preserve agricultural lands and define the limits of urban expansion for the City.
- **Policy COS-6.2.** Provide a sufficient mix of park environments to meet both passive and active recreational needs, including: community parks, neighborhood parks, mini parks, and bicycle and pedestrian facilities.

City of Marina General Plan

The City of Marina General Plan (City of Marina 2000) was adopted by the City in 2000. Example policies within the General Plan that are relevant to public services, recreation and open space, and utilities are listed below:

- **Policy 2.106.** As the population of Marina grows, the policy force should be sufficiently staffed and deployed to maintain an average emergency response time of four minutes. Similarly, a maximum response time for fire protection of three to four minutes should be maintained. Where new development would be located beyond a three-to-four-minute response time, consideration should be given to the need for Class A fire-resistant roofing.
- **Policy 3.3.14.** Support water resource programs, including desalinization and reclamation efforts, to provide an adequate water supply to accommodate General Plan-permitted growth.
- **Policy 4.17.1.** Within built-up areas, existing topography shall be retained to make natural landforms more evident. This requirement of the General Plan may be fulfilled by minimizing grading and cutting filling for roadways, by providing public space with outlooks at the higher elevations, and by locating taller structures on the upper slopes of hills.

City of Monterey General Plan

The City of Monterey adopted the General Plan in 2005 (City of Monterey 2005). Example policies within the General Plan that are relevant to public services, recreation and open space, and utilities are listed below:

- **Policy f.6.** Provide ongoing efficient and effective design, development, renovation, and management of visually aesthetic and functional park areas and facilities.
- **Policy f.3.** Continue to cooperate and coordinate with county and state agencies in providing police services within the community.

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- **Policy a.3.** Encourage infill development within the City where it can efficiently be provided with public facilities and utilities.

Goal i. of the City of Monterey's General Plan contains programs that coordinate with the Water Management District, the California American Water Company, and Monterey Peninsula Water Supply Project to ensure adequate water supply for any new housing goals (Programs i.1.3, i.1.4, i.1.5). Goal a. in the Conservation Element recognizes the lack of available water supply and calls for obtaining a long-term and sustainable water supply.

City of Salinas General Plan

The City of Salinas General Plan (City of Salinas 2002) was adopted in 2002. The City is currently updating the Plan. Since the last comprehensive update in 1988, the city grew substantially and is now the largest city in Monterey County. The major focus of this General Plan is how to protect valuable agricultural resources while promoting a diversified economy. This General Plan includes the following elements: Land Use, Community Design, Housing, Conservation/Open Space, Circulation, Safety and Noise (City of Salinas 2002).

- **Policy LU-4.1.** Provide an effective and responsive level of fire protection, public education and emergency response service (including facilities, personnel, and equipment) through the Salinas Fire Department.
- **Policy COS-7.1.** Develop a high-quality public park system that provides adequate space and facilities for a variety of recreational opportunities conveniently accessible to all Salinas residents.
- **Policy COS-7.11.** Develop and maintain an integrated system of open-space corridors and trails along utility easements, power-transmission-line right-of-way, the reclamation ditch, stream banks, drainageways, slopes, and other natural features.

The City of Salinas General Plan also addresses water supply and water use. The General Plan includes Policy H-2.7 that supports public education programs around water conservation and provides homeowners with low cost or free water efficiency improvements for existing housing units.

City of Soledad General Plan

The City of Soledad adopted its General Plan in 2005 (City of Soledad 2005). Example policies within the General Plan that are relevant to public services, recreation and open space, and utilities are listed below:

- **Policy PR-2.** The City will pursue the development of parks, open space and trails in areas subject to natural or human caused hazards such as natural or developed flood channels, hillsides, and sensitive resource areas.
- **Policy S-1.** The City shall ensure through the development review process that adequate public facilities and services are available to serve new development. New development shall not be allowed until adequate public services and facilities to serve such

development are provided. Where existing facilities are inadequate, new development may only be approved when the following conditions are met:

- a. The developer and/or City can demonstrate that all necessary public facilities will be adequately financed and installed in time (through fees and other means); and
 - b. The facilities improvements are consistent with applicable facility plans approved by the City or other agencies in which the City is a participant.
- **Policy C/OS-11.** The City shall require that significant natural, open space, and cultural resources be identified in advance of development and incorporated into site specific development project design to the extent feasible.

San Benito County

San Benito County General Plan

The San Benito County 2035 General Plan (San Benito County, 2015a) sets a clear direction for the future of the county and includes goals, policies, and programs necessary to achieve the community's vision and guiding principles. Example policies within the General Plan that are relevant to public services, recreation and open space, and utilities are listed below:

- **Policy PFS-1.1.** The County shall ensure that adequate public facilities and services essential for public health and safety are provided to all county residents and businesses and maintained at acceptable service levels. Where public facilities and services are provided by other agencies, the County shall encourage similar service level goals.
- **Policy PSF-7.1.** The County shall ensure that there is adequate capacity within the solid waste system for the collections, transportation, processing, recycling, and disposal of solid waste to meet the needs of existing and projected development.
- **Policy NCR-1.1.** The County shall support and encourage maintenance of open space lands that support natural resources, agricultural resources, recreation, tribal resources, wildlife habitat, water management, scenic quality, and other beneficial uses.

The County's General Plan also contains goals pertaining to water supply. General Plan Goal PFS-3 is to "ensure reliable supplies of water for unincorporated areas to meet the needs of existing and future agriculture and development, while promoting water conservation and the use of sustainable water supply sources." Related policies under Goal PFS-3 include water district support (PFS-3.1), water rights protection (PFS-3.3), drought response (PFS-3.5), groundwater management (PFS-3.7) and integrated management (PFS-3.8).

City of Hollister General Plan

The City of Hollister General Plan adopted its General Plan in 2005 (City of Hollister 2005). Example policies within the General Plan that are relevant to public services, recreation and open space, and utilities are listed below:

- **Policy CSF1.1.** Ensure that future growth does not exceed the capabilities and capacity of local public services such as wastewater collection and treatment, local water supply

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systems, fire and police protection, maintenance of streets and roads, local school systems, parks and recreational facilities, and landfill capacity, and ensure that public services meet Federal and State standards and are available in a timely fashion.

- **Policy CSF2.4.** Encourage development in those portions of the Hollister Planning Area which are already served by the local water supply systems or to which water supply systems can reasonably be extended.
- **Policy OS1.3.** Hollister shall consider the use of creative site planning in a way that is responsive to open space values. Require those proposing new development to design open spaces to minimize paved areas and to maximize landscaping to reduce outdoor air temperatures around buildings in warm weather.

Santa Cruz County

Santa Cruz County General Plan

The Santa Cruz County Board of Supervisors adopted the 1994 General Plan and Local Coastal Program in 1994 (Santa Cruz County 1994). Example policies within the General Plan that are relevant to public services, recreation and open space, and utilities are listed below:

- **Policy 5.11.3.** Require full mitigation of all potential adverse impacts associated with developments located in Urban Open Space areas.
- **Policy 7.4.1.** Establish local rural parks in the rural portions of the County, typically servicing within 4-5 miles radius and consisting of varying sizes depending on the recreational opportunities and resources available. Facilities could include open turf, sport fields, tennis courts, basketball courts, picnic areas, parking, restrooms, tot lot, equestrian facilities, and a building for community meetings and recreational programs.
- **Policy 7.7.22.** Obtain controlled public access to environmentally sensitive habitats through grants, dedication of easements or other means, including as a condition of new development approval, subject to policy 7.6.2. Open the access only for education or nature study purposes, and only when improvements and management are adequate to protect resources.

City of Scotts Valley General Plan

The City of Scotts Valley adopted its General Plan in 1994 (City of Scotts Valley 1994). Example policies within the General Plan that are relevant to public services, recreation and open space, and utilities are listed below:

- **Policy OSP-366.** The City should identify accessible scenic, riparian and other corridors and establish a budget and funding sources for the acquisition of these corridors.
- **Policy PSP-537.** The City shall encourage public and private health care providers to expand their services or to locate in the City consistent with environmental constraints and the needs of local residents.
- **Policy PRP-618.** The City shall encourage schools to make recreational areas and facilities available for use during non-school hours.

City of Santa Cruz General Plan

The City of Santa Cruz 2030 General Plan (City of Santa Cruz 2012b) was adopted in 2012. Example policies within the General Plan that are relevant to public services, recreation and open space, and utilities are listed below:

- **Policy CC7.6.** Coordinate law enforcement planning with local, regional, State, and federal agencies and private security companies.
 - a. Participate in multijurisdictional crime suppression units with emphasis on career criminal apprehension and reducing the number of victims.
 - b. Maintain mutual aid agreements and train in mutual procedures.
- **Policy PR1.1.** Provide and manage a system of parks and recreation related facilities that serve the needs of residents and visitors.
 - a. Update and modify the park system and services to accommodate changes in the population and recreational needs.
 - b. Develop and maintain a citywide Parks Master Plan that sets service standards and strategic goals for the development and maintenance of parks and related facilities.
 - c. Plan for expansion of concessions in parks and recreation facilities.
 - d. Fund and staff regularly scheduled preventative maintenance.
- **Policy PR3.1.** Enhance the outdoor educational and recreational experience in appropriate open space lands and coastline.
 - a. Provide recreational and educational opportunities within the open space lands and coastline consisted with adopted master or management plans.

City of Capitola General Plan

The City of Capitola adopted the General Plan in 2014 (City of Capitola, 2014). Example policies within the General Plan that are relevant to public services, recreation and open space, and utilities are listed below:

- **Policy LU-13.1.** Provide a diversity of park types, including active low investment (e.g., playfields and picnic facilities), and passive recreational facilities (e.g., natural areas suitable for quiet reflection).
- **Policy OSC-6.1.** Promote the preservation of native species, habitat, and vegetation types and overall natural diversity in Capitola.
- **Policy OSC-11.2.** Increase the City government waste diversion rate to 75 percent by expanding reduction, recycling, and composting programs; practicing reuse; conducting waste audits; and promoting the purchase of environmentally friendly office products.

City of Watsonville General Plan

The City adopted the existing Watsonville 2005 General Plan in 1994 (City of Watsonville 1994). Example policies within the General Plan that are relevant to public services, recreation and open space, and utilities are listed below:

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- **Policy 8.A.** The City shall plan for park and recreation needs in coordination with the Pajaro Valley Unified School District, Santa Cruz County, and other groups to meet the demands of the growing population.
- **Policy 9.F.** The City shall designate for open space and environmental management those areas rich in wildlife species and fragile in ecological make-up. These habitat zones shall be made part of the greenbelt where appropriate.
- **Policy 11.C.** The water system shall be designed, constructed and managed to provide a sufficient quantity of appropriate-quality water for the existing and planned community.

Groundwater Sustainability Plans

As discussed in Section 4.10, *Hydrology and Water Quality*, there are multiple groundwater subbasins in the AMBAG region, each of which has a designated GSP responsible for developing and implementing a GSA for the respective basin. The Salinas Valley Basin GSA is responsible for developing and implementing a GSP for the greater Salinas Valley Groundwater Basin, which is comprised of multiple subbasins. In January 2020, the California DWR approved the Salinas Valley Basin GSA's Final GSP for the Salinas Valley 180/400-ft. Aquifer Subbasin, which covers 89,700 acres and was identified by the California DWR as being a High Priority basin. The GSP reports a general decline in groundwater elevations, annual loss of groundwater storage, threat of seawater intrusion, and elevated nitrate concentrations. Considering these threats, the GSP projects that pumping would need to be lowered by about seven percent to meet the long-term sustainable yield for the Salinas Valley 180/400-ft. Aquifer Subbasin. The GSP identifies actions to encourage groundwater recharge, which focus on agriculture (Salinas Valley Basin Groundwater Sustainability Agency 2020).

In addition to the Salinas Valley Basin GSA, other GSAs within the AMBAG region include the Santa Cruz Mid-County Groundwater Agency (MGA), which developed a GSP for the Santa Cruz Mid-County Groundwater Basin, also identified by the DWR as a High Priority basin. The Santa Cruz Mid-County Basin GSP was approved by the California DWR on June 3, 2021. The GSP addressed, among other topics, seawater intrusion which is actively affecting this basin due to over-pumping that has lowered groundwater elevations in the coastal portion of the basin, and is the main threat to the sustainability of the basin. Lower water demand since 1995 has reduced groundwater pumping, but modeling indicates that supplemental water supply is still needed to achieve groundwater sustainability. To prevent additional seawater intrusion, the GSP recommends continuing to conserve water and manage demand and redistribute municipal groundwater pumping, while adding efforts to improve aquifer storage and recovery, increase water transfers, add distributed stormwater managed aquifer recharge, and use advanced purified wastewater (Santa Cruz Mid-County Groundwater Agency 2019).

As shown in Section 4.10, *Hydrology and Water Quality*, Table 4.10-2, GSPs are currently under development for most groundwater subbasins in the AMBAG region. The Salinas Valley Basin GSA is preparing a comprehensive GSP for the Salinas Valley Groundwater Basin, and will also address other High Priority basins in accordance with the SGMA-required timeline. These High Priority basins include the Salinas Valley-Langley Area Subbasin and the Salinas

Valley-East Side Aquifer Subbasin, which are required to have a DWR-approved GSP in place by 2022. Similarly, the DWR-designated Medium Priority basins will also be addressed by a GSP in accordance with the SGMA-required timeline, including the Monterey, Carmel Valley, Forebay Aquifer, and Upper Valley Aquifer Subbasins. San Benito County Water District will complete a GSP for the three Medium Priority basins within the county by 2022, including the Bolsa, Hollister, and San Juan Bautista Subbasins. In addition, Santa Cruz County will be responsible for implementing a GSP for the Santa Margarita and Corralitos-Pajaro Valley Subbasins by 2022.

In accordance with SGMA, the purpose of a GSP is to facilitate the attainment and maintenance of sustainable groundwater conditions within the respective basin. Within the 2045 MTP/SCS area, there are multiple groundwater subbasins, several of which are currently being managed in accordance with a DWR-approved GSP, and most of which currently have a GSP in development by the respective GSA. Each GSP identifies measures to encourage groundwater recharge and improve sustainable conditions, including with respect to seawater intrusion and associated effects on water supply availability. To characterize appropriate actions required to achieve and maintain sustainable conditions in a given groundwater basin, the GSA considers the approved and planned development types and intensities within the GSP study area, to anticipate how water demands may fluctuate in the future.

Emergency Response and Evacuation Plans

Emergency response plans include elements to maintain continuity of government, emergency functions of governmental agencies, mobilization and application of resources, mutual aid, and public information. Emergency response plans are maintained at the federal, state, and local levels for all types of disasters, human-made and natural. Local governments have the primary responsibility for preparedness and response activities.

The Monterey County OES alerts and notifies appropriate agencies when disaster strikes, coordinates all responding agencies, ensures resources are available and mobilized, develops plans and procedures for response and recovery, and develops and provides preparedness materials for the public.

The County of San Benito adopted its emergency operations plan in October 2015 (San Benito County 2015b). The emergency operations plan addresses the County's response to extraordinary emergency situations associated with natural disasters or human-caused emergencies. The emergency operations plan describes the methods for carrying out emergency operations, the process for rendering mutual aid, the emergency services of governmental agencies, how resources are mobilized, how the public will be informed, and the process to ensure continuity of government during an emergency or disaster.

The County of Santa Cruz currently has a draft version of an emergency management plan (Santa Cruz County 2015). The plan establishes a comprehensive, all-hazards approach to incident management across a spectrum of activities including prevention, preparedness, response, and recovery. It addresses the planned response to extraordinary situations associated with large-scale emergency incidents in or affecting Santa Cruz County.

Recreation and Park Master Plans

Recreation and park master plans outline projected recreation facility needs and strategies for fulfilling those needs. The main purpose of the plans is to provide guidance for addressing preservation, use, development, and administration of recreation facilities. These policy and action documents ensure the preservation of the naturalistic environment while providing developments to facilitate human enjoyment of the parks and recreation areas. Plans can target goals and future actions for a specific park or be generalized to a collection of parks in a larger system.

Stormwater Discharges from Municipal Sources (MS4)

As described in Section 4.10, *Hydrology and Water Quality*, to prevent harmful pollutants from being washed or dumped into MS4s, certain operators are required to obtain NPDES permits and develop stormwater management programs (SWMPs). The SWMP describes the stormwater control practices that will be implemented consistent with permit requirements to minimize the discharge of pollutants from the sewer system. There are many MS4 permittees in the AMBAG region. Some examples of MS4 permittees in the region including the City of Santa Cruz, City of Capitola, City of Hollister, City of Monterey, and County of Monterey. Cities and counties within the AMBAG region are in charge of regulating and permitting stormwater permits within their respective jurisdictions. Examples of local regulations for stormwater permits are provided in Section 4.10, *Hydrology and Water Quality*.

Solid Waste Plans

There are various plans and ordinances in effect within the AMBAG region that are intended to reduce the amount or types of solid waste that goes to landfills. For example, each county in the AMBAG region, as well as most of the cities within the counties have a variation of a reusable bag ordinance. These ordinances are intended to reduce the number of plastic shopping bags that are disposed in landfills. There are also adopted solid waste plans applicable to the AMBAG region. For example, the County of Santa Cruz has its *Zero Waste Plan for Santa Cruz County* (County of Santa Cruz 2015). The Zero Waste Plan is a long-term goal for the County and set a 75 percent diversion rate by the year 2010, and additional diversion goals for future years.

4.14.3 Impact Analysis

a. Methodology and Significance Thresholds

Appendix G of the *State CEQA Guidelines* identifies the following criteria for determining whether a project's impacts would have a significant impact on public services, recreation, and utilities and service systems:

1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
 - a. Fire protection;
 - b. Police services;
 - c. Schools;
 - d. Parks; or
 - e. Other public facilities.
2. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
3. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.
4. Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects;
5. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
6. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or
7. Not comply with federal, state and local management and reduction statutes and regulations related to solid waste.
8. Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years

Refer to Section 4.10, *Hydrology, Water Quality, and Water Supply*, for a discussion of the potential for the 2045 MTP/SCS to substantially decrease groundwater supplies or interfere substantially with groundwater recharge, or to conflict with or obstruct implementation of a sustainable groundwater management plan.

This analysis includes a program-level, qualitative assessment of impacts related to public services, recreation, and utilities. Impacts related to these resource areas are more localized in nature, and therefore the analysis is qualitative and focuses on the existing regulations, standards, and policy measures to address these localized impacts. This evaluation of public utilities, facilities, and services impacts assumes that construction and development under the 2045 MTP/SCS would adhere to applicable federal, State, and local regulations and would conform to appropriate standards in the industry, as relevant for individual projects. Where

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existing regulatory requirements or permitting requirements exist that are law and binding on responsible agencies and project sponsors, it is reasonable to assume that they would be implemented, thereby reducing impacts.

b. Project Impacts and Mitigation Measures

The following section describes public services, recreation, and utilities impacts associated with the transportation improvements and future land use scenario included in the 2045 MTP/SCS. Due to the programmatic nature of the 2045 MTP/SCS, a precise, project level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2045 MTP/SCS could result in the impacts as described in the following section.

Threshold 1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- a. Fire protection,
- b. Police services,
- d. Parks, or
- e. Other public facilities

Impact PSU-1 THE 2045 MTP/SCS WOULD RESULT IN NEW OR EXPANDED GOVERNMENTAL FACILITIES, THE IMPLEMENTATION OF WHICH WOULD RESULT IN SUBSTANTIAL PHYSICAL IMPACTS. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

As described in Section 4.13, *Population and Housing*, between 2020 and 2045, the AMBAG region is forecasted to grow by 95,047 people; 37,088 housing units; and 36,544 jobs. The 2045 MTP/SCS designates growth geographies and identifies a set of land use strategies to accommodate the projected growth that results in focused housing and job growth concentrated primarily in or adjacent to already developed areas and along existing transit corridors. The 2045 MTP/SCS was designed to accommodate the people, households, and jobs identified in the regional growth forecast. The overall growth would result in increased demand for services. As the number of households grows, demand for fire protection and police services, parks, and other general government services and facilities (e.g., libraries) would increase.

The 2045 MTP/SCS includes land use strategies that would allow for denser or more compact development in designated growth geographies. Implementation of the proposed Plan would result in more dense and intense development than existing conditions, largely as infill development. Therefore, service areas for existing service providers may not substantially

expand. This type of growth pattern would allow jurisdictions to leverage existing facilities and absorb some of the increased demand more efficiently than if new development were more dispersed.

Overall, with implementation of the 2045 MTP/SCS, the higher density and intensity of new growth in the AMBAG region, particularly in developed areas, would limit the need to expand service boundaries for law enforcement and fire protection. As a function of distance, these services would not need to expand. However, as function of response time, implementation of the 2045 MTP/SCS could result in the need to construct new or expanded facilities. In order to maintain adequate response times, existing emergency service providers may need to expand their facilities if additional population growth results in substantial increases in the volume of requests for services or a decrease in response times. In cases where future demand exceeds capacity, new facilities may be required.

The general plans for each county in the AMBAG region include goals, policies, and programs which intend to ensure the protection and that supply of services meets local demand. Cities have similar general plan policies. The Monterey County General Plan Public Service Element Goal PS-1 intends to ensure that adequate public facilities and services and the infrastructure to support new development are provided over the life of the General Plan (Monterey County, 2010a). Policies PS-1.1 and PS-1.2 are designed to ensure that improvement and financing is designed to accommodate new services, provide adequate public facilities and maintain acceptable levels of service. The San Benito County 2035 General Plan Public Facilities and Services Element Goal PFS-1 intends to provide residents and businesses quality, cost, effective and sustainable public facilities and services (San Benito County, 2015a). Policies PFS-1.1, PFS-1.2 and PFS-1.4 are designed to ensure that the County maintains adequate public facilities, identifies and finds solutions to support key public facility infrastructure, and to preserve, improve and replace facilities to maintain adequate levels of service for existing and future development. The Parks, Recreation and Public Facilities Element of the Santa Cruz County General Plan and Local Coastal Program (Santa Cruz County, 1994) contains objectives related to Fire, Police and Public Services and Facilities which are designed to provide high levels of protection services, and promote the improvement of public services and facilities (Objectives 7.16, 7.17 and 7.27).

However, at the regional scale, the addition of 95,047 people; 37,088 housing units; and 36,544 jobs would place increased demand on existing resources to the extent that the construction of new or expanded facilities would be required, the construction of which would cause significant environmental impacts. Impacts to fire protection, police services, parks, and other public service facilities resulting from land use development envisioned in the 2045 MTP/SCS would be significant.

Transportation projects included in the 2045 MTP/SCS would not generate substantial demand for public services, such a fire protection, police, parks, or other public facilities requiring new or expanded facilities. Transportation projects would not generate substantial demand for these services because transportation projects do not increase the population of the AMBAG region, either directly or indirectly. Transportation projects would also not require the removal and replacement of existing public services, such as police stations or

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fire departments. Therefore, transportation projects included in the 2045 MTP/SCS would result in less than significant impacts to fire protection, police services, parks, and other public service facilities.

Mitigation Measures

Cities and counties in the AMBAG region, as well as other public service providers, can and should implement this measure, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

PSU-1 Increased Public Service Demand

During the CEQA review process for individual facilities, the implementing agency with responsibility for construction of new public service facilities or the expansion of existing facilities, including those of fire and police services, parks, and other public facilities, can and should apply necessary mitigation measures to avoid or reduce significant environmental impacts associated with the construction or expansion of such facilities. The environmental impacts associated with such construction or expansion should be avoided or reduced through the imposition of conditions required to be followed by those directly involved in the construction or expansion activities. Such conditions should include those necessary to avoid or reduce significant impacts associated with air quality, noise, transportation, biological resources, cultural resources, greenhouse gas emissions, hydrology and water quality, and others that apply to specific construction or expansion of new public or expanded public service facilities.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies are cities, counties, and/or implementing agencies for land use projects, and other public service providers. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

Significance After Mitigation

Mitigation Measure PSU-1 would reduce impacts related to the provision of new or physically altered governmental facilities to less than significant with mitigation because it would require implementing agencies to apply necessary mitigation measures to avoid or reduce significant environmental impacts associated with the construction or expansion of such facilities. However, these mitigation measures may not be feasible or effective for every project. Therefore, this impact would be significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

c. Schools

Impact PSU-2 THE 2045 MTP/SCS WOULD REQUIRE THE PROVISION OF NEW SCHOOLS, THE CONSTRUCTION OF WHICH WOULD RESULT IN SUBSTANTIAL PHYSICAL IMPACTS. IMPACTS WOULD BE LESS THAN SIGNIFICANT BECAUSE OF STATE REGULATIONS MANDATING DEVELOPMENT IMPACT FEES.

As discussed above, the 2045 MTP/SCS would accommodate the people, households, and jobs identified in the regional growth forecast. The overall growth would result in increased demand for services, including school services. The proposed composition of residential land uses would vary as future development occurs and the total number of households would increase. Alongside this, the projected population growth in the region would result in more school-age children brought into school districts within each county. The generation of additional primary and secondary school-age children and the ability of individual schools to accommodate them is dependent on the type of housing, demographics, and the available capacity of the elementary, middle, and high schools that would accommodate them. This is a dynamic condition that changes over time as population characteristics and other variables change. In the cases where increased growth exceeds the capacity of schools and other government-related services and facilities, implementation of the 2045 MTP/SCS would require additional or modified facilities to ensure acceptable levels of service.

Future project sponsors would be required by law to pay development impact fees at the time building permits are issued. These fees are used by the applicable school district to mitigate impacts associated with long-term operation and maintenance of school facilities. The fees would be determined at the time of the building permit issuance and would reflect the most current fee amount requested by the school district. Pursuant to Section 65996(3)(h) of the California Government Code (SB 50), payment of these fees “is deemed to be full and complete mitigation of impacts of any legislative or adjudicative act, or both, involving but not limited to, the planning, use, or development of real property, or any change in government organization or reorganization.” Impacts of the 2045 MTP/SCS on schools would therefore be less than significant.

Mitigation Measures

None required.

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Threshold 2: Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated

Threshold 3: Include recreational facilities or require construction or expansion of recreational facilities which might have an adverse physical effect on the environment

Impact PSU-3 THE 2045 MTP/SCS WOULD INCREASE THE USE OF EXISTING PARKS AND RECREATIONAL FACILITIES, RESULTING IN SUBSTANTIAL PHYSICAL DETERIORATION, AND WOULD INCLUDE RECREATIONAL FACILITIES THAT WOULD HAVE AN ADVERSE PHYSICAL EFFECT ON THE ENVIRONMENT. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Implementation of the 2045 MTP/SCS would increase demand on existing public parks and other recreational facilities in the region and could cause accelerated physical deterioration of parks, trails, and recreational facilities as a result.

The 2045 MTP/SCS would accommodate the people, households, and jobs identified in the regional growth forecast. The overall growth would result in increased demand for services, including recreational facilities. Implementation of the 2045 MTP/SCS would potentially result in an increased use of existing recreational facilities associated with increases in regional growth. Transportation projects would improve access to recreational facilities, which would result in additional use. Combined, the land use growth and transportation projects included in the 2045 MTP/SCS would likely increase use of existing facilities, which would result in a substantial physical deterioration of the facilities or require expanded or new recreational facilities.

However, it should also be noted that some of the active transportation projects included in the 2045 MTP/SCS would provide new recreational opportunities such as new Class I-III bike lanes, hiking trails, and improve access to recreational facilities. The provision of new recreational opportunities could decrease use of existing recreation facilities as residents and visitors to the AMBAG region would have more options and destinations for recreation. Because use of existing facilities could decrease with the provision of new facilities, the rate or deterioration of existing facilities would also correspondingly decrease. The construction of active transportation projects that could also be used for recreation would have the potential to result in environmental impacts. The significant environmental impacts of these active transportation projects, as well as any new or expanded recreational facilities to serve land use development under the SCS, have already been disclosed previously in Chapter 4, *Environmental Impact Analysis*.

Development of the individual projects in the 2045 MTP/SCS would be required on a project by project basis to pay development fees towards to the applicable jurisdiction. Since the passage of the 1975 Quimby Act (Government Code § 66477 *et seq.*), cities and counties have been authorized to adopt ordinances requiring that developers set aside land, donate conservation easements, or pay fees that can be used for purposes of acquiring parkland. In accordance with this regulation, each county in the AMBAG region requires that new residential development provide parkland and/or pay in lieu fees for the provision of

parkland. Cities also typically have similar types of policies in their general plans and/or Code of Ordinances. All future development included in the 2045 MTP/SCS would be required to comply with these regulations. The payment of these fees would go toward maintaining parks or providing new park space, which would also reduce use of existing recreational facilities. Reduced use of existing facilities would result in a corresponding decrease in deterioration of existing facilities. However, payment and utilization of Quimby Act fees would not entirely prevent or remediate deterioration of parks and recreational facilities. While land use development could increase demand on recreational services, existing State requirements regarding development of a complete general plan, including Open Space and Conservation Elements, require local jurisdictions to address impacts on recreational facilities. Compliance with State requirements, which would result in long-range planning for recreation facilities, would help ensure that existing facilities are properly maintained, despite regional growth. As such, substantial physical deterioration of existing facilities and/or accelerated deterioration would not occur. Thus, land use development under the proposed 2045 MTP/SCS would not have a significant impact on deterioration of recreational resources.

Although impacts related to substantial physical deterioration would be less than significant, the construction of new or expanded recreational facilities itself would result in significant environmental impacts. Therefore, this impact is significant.

Mitigation Measures

Cities and counties in the AMBAG region, and recreation agencies, can and should implement the following measures, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

PSU-3 Impact Reduction from New Recreational Facilities

During project specific design and CEQA review, the cities and counties in the AMBAG region, and other agencies with responsibility for the construction of new or expanded recreation facilities, can and should apply necessary mitigation measures to avoid or reduce significant environmental impacts associated with the construction of such facilities. The environmental impacts associated with such construction should be avoided or reduced through the imposition of conditions required to be followed by those directly involved in the construction or expansion activities. Such conditions should include those necessary to avoid or reduce significant impacts associated with air quality, noise, transportation, biological resources, cultural resources, greenhouse gas emissions, hydrology and water quality, and others that apply to specific construction of new or expanded recreation facilities, including recreational trails.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects, including recreation trails, are cities, counties, and recreation agencies. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

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Significance After Mitigation

Implementation of Mitigation Measure PSU-3 would reduce impacts associated with the construction of additional parks and recreation facilities because it would require implementing agencies to apply necessary mitigation measures to avoid or reduce significant environmental impacts associated with the construction or expansion of such facilities. However, these mitigation measures may not be feasible or effective for every project. Therefore, this impact would be significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 4: Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects

Threshold 5: Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments

Impact PSU-4 PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE 2045 MTP/SCS WOULD REQUIRE OR RESULT IN THE RELOCATION OR CONSTRUCTION OF NEW OR EXPANDED WATER, WASTEWATER TREATMENT, OR STORMWATER DRAINAGE, ELECTRIC POWER, NATURAL GAS, OR TELECOMMUNICATIONS FACILITIES, THE CONSTRUCTION OF WHICH WOULD CAUSE SIGNIFICANT ENVIRONMENTAL EFFECTS. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Envisioned 2045 MTP/SCS land use development would result in a need for new or expanded water and wastewater treatment facilities to accommodate demand in specific areas that exceeds the capacity at existing facilities. Transportation improvements would not lead to the construction of projects that include habitable residences or commercial buildings, but projects implemented under the 2045 MTP/SCS would introduce additional water demands to the AMBAG region. Most transportation improvements involve modification of existing facilities and would not result in a substantial increase in landscaped areas that require irrigation. However, future transit projects with restrooms envisioned by the 2045 MTP/SCS would require potable water, such as the Passenger Rail to Santa Clara County (SB-LTA-A53) or King City Multimodal Transit Station (MON-KCY053-CK). As described below in Impact PSU-7, water supply could be insufficient for meeting demand. In some instances, wastewater treatment capacity may need to be expanded along with the use of advanced treatment technology, reclaimed water distribution, or groundwater recharge. In combination, proposed transportation improvements and land use projects envisioned by the 2045 MTP/SCS would require construction or expansion of water or wastewater treatment facilities or result in the determination by a wastewater treatment provider that it has inadequate capacity to serve future demand. Depending on the exact timing and location of future development, it may become necessary to construct new water and wastewater treatment facilities or expand existing facilities to maintain adequate water supply and wastewater treatment capacity. The construction of new or expanded water and wastewater

treatment facilities could result in potentially significant impacts, depending on their location and design and the environmental resources present where the facilities are located.

The proposed 2045 MTP/SCS would result in an increase of approximately 37,088 new housing units through this horizon year. Development of the remaining acres outside of existing urban areas could be composed of a variety of land uses and impervious surfaces (e.g., paved areas, building rooftops, parking lots) that would result in incremental increases in the volume and rate of stormwater runoff, and possibly require the expansion or construction of new stormwater drainage facilities. Urban infill can also increase impervious surfaces by converting permeable vacant or underused parcels into land with more paving or structures. Some redevelopment can reduce the amount of impervious surface, however, by converting pavement or buildings into permeable paving or landscape. Redevelopment can also increase the amount and rate of runoff by discharging greater amounts of water on a site than before development, typically because of excessive landscape irrigation. Infrastructure upgrades would accommodate the stormwater and water quality treatment needs of the individual development. As described in Section 4.10, *Hydrology and Water Quality*, the CWA NPDES MS4 Phase I and Phase II requirements compel agencies and developments to implement SWMPs, which in turn require the implementation of source and treatment control measures. NPDES MS4 permittees are also required to develop and enforce ordinances and regulations to reduce the discharge of sediments and other pollutants in runoff and must verify compliance. New development that would introduce 10,000 or more square feet of new impervious surfaces would be required under Provision C.3 of the NPDES to incorporate LID strategies such as stormwater reuse, onsite infiltration, and evapotranspiration. Some typical BMPs to meet regulatory standards for project operation include erosion control and revegetation programs, LID, alternative discharge options and integrated pest management techniques in landscaped areas. During operations and maintenance of envisioned projects, operational BMPs would result in compliance with applicable stormwater runoff discharge permits. In addition, consistent with the Post-Construction Stormwater Management Requirements for development projects in the central coast region (February 2013), post project stormwater flows from a project site are required to be the same or less than pre-project stormwater flows.

The infill nature of the 2045 MTP/SCS development pattern, combined with compliance with existing stormwater regulations that mitigate runoff flows, would result in less than significant impacts on the stormwater capacity of existing systems because much of the growth would occur on already impervious land built to lower standards and the slight increase of urbanized land would have to comply with current standards. However, it can reasonably be assumed that development outside of urbanized areas would require the construction of new stormwater drainage systems that may create adverse environmental effects.

Likewise, some transportation projects would also increase impervious surface area compared to existing conditions, such as transportation projects that involve adding new or additional travel lanes to paved roads. Depending on the location and design specific to transportation projects included in the 2045 MTP/SCS, stormwater runoff may be captured in existing storm drain systems and conveyed to local or regional wastewater treatment

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facilities. Additionally, roadways, such as state highways, are often adjacent to pervious surfaces, such as gravel shoulders, agricultural fields, or other unpaved surfaces. Runoff from the roadway surface is able to flow overland into these pervious areas and infiltrate the ground, reducing impacts to the local stormwater system. For other transportation projects, additional drainage infrastructure that results in additional ground disturbance would be required.

Additionally, implementation of the 2045 MTP/SCS land use development pattern could result in the demand for new energy and telecommunication infrastructure. The specific nature of the infrastructure is difficult to predict because both the energy and telecommunication fields are evolving rapidly with new technologies. As communities continue to implement strategies to electrify their communities and transition to a less carbon intensive electric system, upgrades to existing distribution systems would be expected. Where existing electric, natural gas, and telecommunications infrastructure cannot accommodate demand generated from increased land development and densities associated with implementation of the 2045 MTP/SCS, and where the capacity of existing infrastructure is exceeded, new or expanded infrastructure that may create adverse environmental effects, including electric power, natural gas, and telecommunications may be required.

Overall, implementation of the 2045 MTP/SCS may require new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities or the relocation of existing facilities. The construction or relocation of these facilities may have effects related to construction and to conversion of undeveloped land. Therefore, these impacts would be significant.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the 2045 MTP/SCS program where applicable for transportation projects that require new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, and where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region, and other utility providers, can and should implement these measures, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

PSU-4(a) Water and Wastewater Treatment Facilities

During the CEQA review process for individual facilities, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies, and cities and counties in the AMBAG region and other utility providers with responsibility for the construction of new water or wastewater treatment and collection facilities or the expansion of existing facilities can and should apply necessary mitigation measures to reduce significant environmental impacts associated with the construction or expansion of such facilities. The environmental

impacts associated with such construction or expansion should be avoided or reduced through the imposition of conditions required to be followed by those directly involved in the construction or expansion activities. Such conditions should include those necessary to avoid or reduce impacts associated with air quality, noise, traffic, biological resources, cultural resources, greenhouse gas emissions, hydrology and water quality and others that apply to specific construction or expansion of water or wastewater treatment and collection facilities projects.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies are cities, counties, and utility agencies for land use projects. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

PSU-4(b) Stormwater Facilities

During the CEQA review process for individual facilities, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies, and cities and counties in the AMBAG region and special districts with responsibility for the construction of new stormwater drainage facilities or the expansion of existing facilities to adequately meet projected capacity needs can and should apply necessary mitigation measures to avoid or reduce significant environmental impacts associated with the construction or expansion of such facilities. The environmental impacts associated with such construction or expansion should be avoided or reduced through the imposition of conditions required to be followed by those directly involved in the construction or expansion activities. Such conditions should include those necessary to avoid or reduce impacts associated with air quality, noise, traffic, biological resources, cultural resources, greenhouse gas emissions, hydrology and water quality, and others that apply to specific construction or expansion of storm water drainage facilities projects.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies are cities, counties, and utility agencies for land use projects. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

PSU-4(c) Stormwater Control Methods

During the CEQA review process for individual facilities, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following measures where feasible:

- For transportation projects, incorporate stormwater control, retention, and infiltration features, such as detention basins, bioswales, vegetated median strips, and permeable paving, early into the design process to ensure such features are analyzed during

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environmental review. Implement mitigation measures identified for such features on a project specific basis, where feasible and necessary based on project and site specific considerations.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

PSU-4(d) Electric Power, Natural Gas, or Telecommunications Facilities

During the CEQA review process, cities, counties, and AMBAG region energy and telecommunications providers and regulatory agencies with responsibility for the construction or approval of new electric power, natural gas, or telecommunications facilities or the expansion of existing facilities to adequately meet projected capacity needs can and should apply necessary mitigation measures to avoid or reduce significant environmental impacts associated with the construction or expansion of such facilities. The environmental impacts associated with such construction or expansion should be avoided or reduced through the imposition of conditions required to be followed by those directly involved in the construction or expansion activities. Such conditions should include those necessary to avoid or reduce impacts associated with air quality, noise, traffic, biological resources, cultural resources, greenhouse gas emissions, hydrology and water quality, and others that apply to specific construction or expansion of natural gas and electric facilities projects.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies are cities, counties, and utility agencies for land use projects. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

Significance After Mitigation

Implementation of Mitigation Measure PSU-4(a) through PSU-4(d) would reduce impacts associated with the construction of additional water and wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities because it would require implementing agencies to apply necessary mitigation measures to avoid or reduce significant environmental impacts associated with the construction or expansion of such facilities. However, these mitigation measures may not be feasible or effective for every project. Therefore, this impact would be significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 6: Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals

Impact PSU-5 PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE 2045 MTP/SCS WOULD GENERATE SOLID WASTE IN EXCESS OF THE CAPACITY OF LOCAL INFRASTRUCTURE. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Construction activities would generate solid waste that would need to be disposed at local landfills, and individual contributions on a project by project basis would be analyzed under planning review prior to project implementation. Impacts associated with transportation infrastructure projects would be temporary and reduced by compliance with the California Green Building Code and Senate Bill 1016, which require that construction operations recycle a minimum of 50 percent of waste generated. Similarly, land use development projects would also be required to comply with a 50 percent diversion rate, as required by California's Integrated Waste Management Act of 1989 (State Assembly Bill [AB] 939) and a future 75 percent diversion pursuant to AB 341. Compliance with these requirements would ensure that solid waste generated from land use development would be minimized the extent practical, and that diversion rates would increase into the future, as development included in the 2045 MTP/SCS is built out.

For the non-diverted waste generated by projects included in the 2045 MTP/SCS, solid waste would require disposal in area landfills. As shown in Table 4.14-5, there are six active landfills in the AMBAG region. Between 2020 and 2045, the AMBAG region is projected to grow by 95,047 people; 37,088 housing units; and 36,544 jobs. This increase in population would result in increased generation of solid waste and would potentially exceed local landfill capacity.

Land use development projects undertaken with implementation of the 2045 MTP/SCS would be required to comply with federal, State, and local statutes and regulations related to solid waste, including County and City General Plans. Local jurisdictions also have goals and policies for recycling and diversion of solid waste to ensure compliance such as AB 939 which requires that all California counties provide at least 15 years of ongoing landfill capacity.

While there are regulations in place intended to reduce solid waste generation, implementation of the 2045 MTP/SCS would result land use development that would not occur evenly around the region. Areas with the most growth would generate waste that could exceed the current permitted capacity at local landfills. Implementation of the 2045 MTP/SCS land use development pattern and transportation projects would reduce the capacity of existing landfills, leading to earlier closure dates than currently anticipated and a need for increased landfill capacity. Therefore, this impact would be significant.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the 2045 MTP/SCS program where applicable

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for transportation projects that result in impacts related to solid waste, and where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

PSU-5 Solid Waste Generation and Disposal

During the CEQA review process for individual facilities, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies, and cities and counties in the AMBAG region can and should implement, the following measures where feasible:

- Provide an easily accessible area that is dedicated to the collection and storage of non-hazardous recycling materials.
- Maintain or reuse existing building structures and materials during building renovations and redevelopment.
- Use salvaged, refurbished, or reused materials to help divert such items from landfills.
- Divert construction waste from landfills, where feasible, through means such as:
 - Submitting and implementing a construction waste management plan that identifies materials to be diverted from disposal;
 - Establishing diversion targets, possibly with different targets for different types and scales of development;
 - Helping project sponsors and implementing agencies share information on available materials with one another, to aid in the transfer and use of salvaged materials.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies are cities, counties, and utility agencies for land use projects. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

Significance After Mitigation

Implementation of Mitigation Measure PSU-5 would reduce impacts associated with solid waste generation because it would require that land use and transportation projects apply landfill diversion strategies including reusing building materials, maintaining structures where applicable, and developing construction waste management plans. However, these mitigation measures may not be feasible or effective for every project. Therefore, this impact would remain significant and unavoidable.

Threshold 7: Not comply with federal, state and local statutes and regulations related to solid waste

Impact PSU-6 PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE DEVELOPMENT PROJECTS ENVISIONED BY THE 2045 MTP/SCS WOULD BE REQUIRED TO COMPLY WITH ALL RELEVANT STATUTES AND REGULATIONS RELATED TO SOLID WASTE. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

As discussed under Impact PSU-4, transportation improvements and land use development projects envisioned by the 2045 MTP/SCS would be required to comply with the California Green Building Code and SB 1016, which require that construction operations recycle a minimum of 50 percent of waste generated. Similarly, land use development projects would also be required to comply with federal, State, and local statutes and regulations related to solid waste, including a 50 percent diversion rate pursuant to AB 939 and a future 75 percent diversion pursuant to AB 341, as well as local jurisdiction goals and policies for recycling and diversion of solid waste. Therefore, the 2045 MTP/SCS would comply with relevant federal, state, and local statutes and regulations related to solid waste. This impact would be less than significant.

Mitigation Measures

None required.

Threshold 8: Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years

Impact PSU-7 IMPLEMENTATION OF PROPOSED TRANSPORTATION IMPROVEMENTS AND FUTURE PROJECTS INCLUDED IN THE LAND USE SCENARIO ENVISIONED IN THE 2045 MTP/SCS WOULD INCREASE WATER DEMAND IN THE AMBAG REGION SUCH THAT WATER SUPPLIES MAY BE INSUFFICIENT TO SERVE ENVISIONED DEVELOPMENT. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Water supply in the AMBAG region consists primarily of imported surface water supply and locally produced groundwater supply. In addition, alternative and expanded water supplies include recycled water, groundwater recharge, and water conservation. Projects implemented under the 2045 MTP/SCS would introduce additional water demands to the AMBAG region. Most transportation improvements involve modification of existing facilities and would not result in a substantial increase in landscaped areas that require irrigation. However, streetscaping projects proposed in the 2045 MTP/SCS, such as the San Carlos Streetscaping (MON-CAR007-CM) in Monterey County and the West Gateway Improvement Project (SB-COH-A13) in San Benito County, could require water for landscaping. Furthermore, new and extended roadways could include tree and shrub plantings. In addition, future transit projects with restrooms envisioned by the 2045 MTP/SCS would require potable water, such as the Passenger Rail to Santa Clara County (SB-LTA-A53) or King City Multimodal Transit Station (MON-KCY053-CK).

Major 2045 MTP/SCS projects, particularly new and extended roadways, and parking facilities could affect groundwater supplies by incrementally reducing groundwater recharge potential. Increased impermeable surfaces associated with proposed improvements could

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negatively impact natural infiltration within existing rights-of-way, however, there would be no effect on groundwater recharge if potential sites are already paved. Also, during grading and general construction activities for projects under the 2045 MTP/SCS, water supply would be needed to provide fugitive dust management. Given the current state of overdraft of many groundwater basins in the study area, and the likelihood that more than one project would be constructed simultaneously in areas with overdrafted basins, the short-term water supply impact during construction of 2045 MTP/SCS transportation projects would be significant.

It is likely that many projects involving landscaping and infill development near transit would be located in urban areas served by overdrafted groundwater basins, including the City of Watsonville and the City of Santa Cruz. Development associated with the land use scenario envisioned in the 2045 MTP/SCS may also impact water supplies requiring additional water for mixed use development and infill, as well as outlying, development. Future development envisioned under the 2045 land use scenario would increase the demand on the region's water supply. Further, increased demand on water supply driven by the increase in population coupled with increasingly common drought conditions would result in insufficient supply. Population within the AMBAG region is expected to increase from about 775,000 in 2020 to nearly 870,000 by 2045 (AMBAG 2020). Given existing reliance on and over-drafting of groundwater and anticipated continued drought it is possible that there would be insufficient water without new or expanded supply. Therefore, the impact from land use projects would be significant.

As discussed in Section 4.10.2, *Regulatory Setting*, UWMPs for the AMBAG area estimate and pursue the efficient use of available water supplies identifying short-term and long-term water demand management measures. UWMPs are generally updated every five years to account for water demand resulting from the growth envisioned in general plan updates and updated population growth forecasts. Therefore, the current UWMPs applicable to the AMBAG region generally account for the land development envisioned in the 2045 MTP/SCS because it is largely consistent with applicable general plans. In addition, SB 610/221 amended State law to improve the link between information on water supply availability and certain land use decisions made by cities and counties. Further, GSPs prepared under SGMA would be implemented to protect and regulate groundwater in the AMBAG area. These regulatory and planning programs encourage planning for anticipated water usage and thus conservation in the AMBAG area and would include consideration for the water demand anticipated by the 2045 MTP/SCS.

The forecasted AMBAG population growth, land use and transportation projects, although completed in compliance with existing regulations, would generate considerable water demand. Groundwater subbasins are already being overdrawn to support the existing population and California entered a new drought in 2020 after sustaining a five year drought from 2012 to 2016. In addition, although existing regulations would reduce groundwater impacts, some jurisdictions may not have local regulations or the regulations may not apply to all projects. Therefore, the region may have insufficient water supplies available to serve MTP/SCS demands and reasonably foreseeable future development during normal, dry, and multiple dry years, and this impact would be significant.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the 2045 MTP/SCS program where applicable for transportation projects that have water supply impacts, where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

PSU-7(a) General Conservation Measures

Agencies implementing land use and transportation projects that could increase water demand shall, or can and should, coordinate with relevant water services to ensure demand can be accommodated and identify a water consumption budget. Any existing water conservation measures that reduce demand for potable water, such as reducing water use for landscape irrigation for transportation projects or use of water-conserving fixtures in envisioned land use projects, should be employed. Reclaimed water should be used when possible.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies are cities and counties for land use projects. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

PSU-7(b) Construction Dust Suppression Water Supply

Implementing agencies shall, or can and should, ensure that for all 2045 MTP/SCS projects, where feasible, reclaimed and/or desalinated water is used for dust suppression during construction activities. This measure shall, or can and should, be noted on construction plans and shall be spot checked by the implementing agency.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation and land use projects are RTPAs, transportation project sponsor agencies, and Metropolitan Planning Organizations. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

PSU-7(c) Landscape Watering

In jurisdictions that do not already have an applicable local regulatory program related to landscape watering, implementing agencies shall, or can and should, design 2045 MTP/SCS projects that would include landscaping shall be designed with drought tolerant plants and drip irrigation. When feasible, native plant species shall be used. In addition, landscaping associated with proposed improvements shall be maintained using reclaimed and/or desalinated water when feasible.

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IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

PSU-7(d) Porous Pavement and Bioswale Installation

In jurisdictions that do not already have an appropriate local regulatory program related to porous pavement, implementing agencies for a 2045 MTP/SCS project that involves streetscaping, parking, transit and/or land use improvements shall, or can and should, ensure that porous pavement materials are utilized, where feasible, to allow for groundwater percolation. Additionally, if a project would substantially increase impervious surfaces the sponsor shall ensure that bioswales are installed, where feasible, to facilitate groundwater recharge using stormwater runoff from the project site while improving water quality if not already required by the appropriate jurisdiction's local regulatory programs.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

Significance After Mitigation

Implementation of the above measures would reduce impacts from water supply in the AMBAG region. However, the population growth forecast coupled with existing groundwater over-drafting and regular droughts indicate that demand may outpace supply in certain areas. The land use scenario envisioned by the 2045 MTP/SCS along with 2045 MTP/SCS transportation projects would result in the need for additional water supply, even with the implementation of mitigation measures listed above. Given the overdraft conditions of area groundwater basins and other regional water supply concerns, impacts would remain significant and unavoidable. No additional feasible mitigation measures to reduce this impact to less than significant levels are available.

c. Specific MTP/SCS Projects That May Result in Impacts

Some transportation network improvements, such as road widening, extension, or signalization projects, would require increases in utility usage such as water and electricity, while others could indirectly induce growth that would generate demand for police, fire, schools, and other public services. Public service standards, performance measures, and policies related to public services, recreation, and utilities are established by local jurisdictions and regulatory agencies. At a regional scale, it is not feasible to quantify separate effects of specific projects on each type of public service or utility in separate jurisdictions, each with a different standard for service. Therefore, it cannot feasibly be determined which

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of the 2045 MTP/SCS transportation projects would potentially result in impacts to public services, recreation, or utilities without project specific design details.

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4.15 Transportation

This section examines the effects of the changes in projected land use and transportation projects included in the 2045 MTP/SCS on transportation conditions in 2045.

4.15.1 Setting

The existing transportation system in the region consists of a complex network of State and federal highways, local streets, and local roads; transit services; a series of bicycle paths and pedestrian walkways; railroad lines; and a number of aviation and marine facilities.

a. Roadway Transportation

Roadway Network

The regional roadway network consists of several thousand miles of roadways, including highways, regional arterial roads and other collector and local streets. Within the region, the designated routes in the national highway system are all State or federal highways, including: U.S. 101 for its entire length through the region, Highway 156 from U.S. 101 to Highway 1, and Highway 1 from Highway 17 in Santa Cruz to Highway 68 in Monterey. Vehicle travel served by these highways includes all trip lengths and purposes, ranging from external trips to and from the region, external trips traveling through the region (e.g., from San Jose to Los Angeles on U.S. 101), and internal travel between points within the region.

The three counties and 18 incorporated cities in the region are responsible for an extensive network of city and county roads. Major highway routes through the region include:

- U.S. 101, a north-south route primarily serving Monterey County, and connecting through San Benito County and the San Jose/San Francisco Bay area;
- Highway 1, which closely follows the Pacific coastline and is the single longest highway in the region, attracting substantial recreational and tourist traffic;
- Highway 17, which connects Santa Cruz and the San Jose Area, carrying a high volume of both commuter and recreational traffic;
- Highway 68 and Highway 183 in Monterey County;
- Highway 25 and Highway 156 in San Benito County; and
- Highway 9 and Highway 129 in Santa Cruz County.

These highways and other expressways, arterials and collectors not only serve local traffic, but provide access and mobility for trips beginning and/or ending outside the region. Table 4.15-1 identifies the major roadways in the region and respective roadway conditions that reflect baseline (2020) conditions, unless a more recent date is noted.

Table 4.15-1 AMBAG Region Highway Descriptions

Highway	Length within AMBAG Region	Description
State Highway 1	139.8 miles	<p>Highway 1 is one of two routes that traverse the entire region, connecting the AMBAG region to Northern and Southern California. This important highway provides the primary access to the region's coastal areas, as well as serving the needs of residents and visitors to much of the region's urbanized areas, and assisting with agricultural commodity movement.</p> <p>Highway 1 is designated a California State Scenic Highway from the intersection with State Highway 68 south to the San Luis Obispo County line, a distance of approximately 78 miles. At the Santa Cruz and San Mateo County border, Highway 1 is designated a California State Scenic Highway as it travels north towards San Francisco. Highway 1 changes in character as it moves down the Pacific Coast, from a rural, undivided two-lane highway, to a four-lane arterial, to a four-lane divided highway, and finally to a six-lane divided highway.</p> <p>Congestion issues include commuter traffic around and through the cities of Monterey and Santa Cruz and tourism traffic along its entire length, but especially in the Big Sur and Carmel-by-the-Sea areas.</p> <p>Portions of Highway 1 have been periodically closed in Monterey County due to mudslides or collapsed bridges in the past. Most recently, a segment of Highway 1 in the Big Sur area was closed for three months in early 2021. At the time this EIR was published, Highway 1 has no closures due to mudslides or collapsed bridges.</p>
State Highway 9	25.7 miles	<p>Highway 9 is a two-lane rural highway as it enters the region from San Mateo County in the Santa Cruz Mountains. It is a 27-mile route between the cities of the Santa Clara Valley and Santa Cruz at its junction with Highway 1. It is considerably curvy and traverses forested areas, which limit travel speeds. Highway 9 serves communities in the San Lorenzo Valley, including Boulder Creek, Ben Lomond, and Felton, and is a heavily used commuter and recreational travel route.</p>
State Highway 17	12.5 miles	<p>Highway 17 is a four-lane freeway/expressway providing the shortest travel distance between the Santa Clara Valley and Santa Cruz County. Travelers to and from the San Francisco Bay area and Santa Cruz County use Highway 17. The route is heavily used for recreational travel on weekends and for commuter travel on weekdays and is therefore subject to delay.</p> <p>Starting at the Santa Clara/Santa Cruz County line near Summit Road, Highway 17 is a rolling to mountainous road, with slopes from four percent to six percent. Segments along this route are narrow, do not have shoulders, or have a narrow median with guard rail. Highway 17 reached its design capacity of 40,000 vehicles per day in 1968. Although this road does not have signalized intersections, there are several unsignalized intersections with acceleration/deceleration lanes as well as t-intersections with local roads. Just south of Scotts Valley, Highway 17 becomes a freeway with shoulders. The freeway portion terminates at the interchange with Highway 1 in the City</p>

Highway	Length within AMBAG Region	Description
		of Santa Cruz. The program Safe on 17 has been an effective collaboration between SCCRTC, Caltrans, the California Highway Patrol, and local and elected officials to encourage motorists to travel at safe speeds and use caution on Highway 17.
State Highway 25	72.1 miles	<p>Highway 25 enters the region in the north about two miles south of its interchange with U.S. 101 in Santa Clara County. Although only a two-lane undivided highway, it provides the most direct connection between U.S. 101 and the City of Hollister, as well as being the sole north-south highway for the rest of San Benito County.</p> <p>Highway 25 is primarily a two-lane undivided roadway from the Santa Clara/San Benito County line and the intersection with Highway 198 in southern Monterey County. In this section, Highway 25 provides direct access to the East Entrance to Pinnacles National Park.</p> <p>Due, in part, to both differences between housing market costs and a jobs/housing imbalance, increasing commute travel from residents from San Benito County to Santa Clara County has substantially affected the operation of Highway 25, especially from Hollister to the Santa Clara County line.</p>
State Highway 68	22 miles	<p>Highway 68 begins at Asilomar State Beach in the City of Pacific Grove and is the only highway access from Pacific Grove to Highway 1. At Highway 1, the roads merge for about three miles, then Highway 68 continues east past the Laguna Seca Recreation Area and Monterey County's Toro Regional Park and on into Salinas, where it connects to U.S. 101.</p> <p>Highway 68 is the most direct highway link between the Monterey Peninsula and the City of Salinas and is heavily used by commuters and visitors.</p> <p>State Highway 68 is a designated California State Scenic Highway from its intersection with State Highway 1 in Monterey to the Salinas River. From Asilomar State Beach to State Highway 1, Highway 68 is a steep two-lane highway with narrow shoulders, many curves and signalized intersections. From Highway 1 eastbound, Highway 68 is a four-lane divided road for less than a mile before narrowing to a two-lane undivided rural highway (with signalized intersections) to Toro Park, where it becomes a four-lane freeway to the Spreckels interchange. From here to Blanco Road in the City of Salinas it is a four-lane expressway, and then it becomes a signalized arterial (South Main Street and John Street) through Salinas to U.S. 101. Motorists experience substantial delay on Highway 68 due to its heavy use and signalized intersections.</p>

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Highway	Length within	
U.S. 101	107.6 miles	<p>U.S. 101 is the only federal highway in the region. U.S. 101 enters the region at the northwest corner of San Benito County as a four-lane freeway/expressway.</p> <p>U.S. 101 is the main north-south route for the region, used heavily by residents of the region, and for external trips to and through the region. It is an important truck route along its entire length. Near Prunedale travel demand significantly outpaces capacity. This section is characterized by at-grade intersections that serve increasing commuter, recreational and truck traffic.</p> <p>At the northern boundary of the City of Salinas, U.S. 101 has been improved to a freeway through the urbanized area, and then it continues as an expressway southward toward the Monterey/San Luis Obispo County line, with alternating segments of four-lane divided expressway and freeway.</p>
State Highway 129	14.1 miles	<p>Highway 129 connects Highway 1 in Watsonville and U.S. 101 in San Benito County, east of Watsonville. Highway 129 traverses hilly terrain with sharp curves and steep grades. It provides the shortest route between the agriculture center of Watsonville and U.S. 101. It therefore carries a large volume of heavy trucks, especially since semitrailer trucks over 45 feet in length are not allowed on Highway 152, which is another connection between Watsonville and U.S. 101.</p> <p>Highway 129 is a four-lane road from Highway 1 to the Watsonville City limits, where it narrows to a two-lane rural road with narrow or no shoulders. The terrain it traverses, and the resulting roadway characteristics place severe limits on traffic speeds and volume.</p>
State Highway 146	18.3 miles	<p>Highway 146 is two separate rural two-lane roads, one from U.S. 101 in Monterey County east, and the other from Highway 25 in San Benito County west. These roads do not connect for travel across the Gabilan Mountains, but do provide access to Pinnacles National Park via its western and eastern entrances, respectively.</p>
State Highway 152	11.4 miles	<p>Highway 152 connects the City of Watsonville to Gilroy, northeast of Watsonville in Santa Clara County. In Watsonville, Highway 152 begins at its intersection with Highway 1. It traverses Hecker Pass between Watsonville and Gilroy, before ultimately ending at its junction with U.S. 101 in Gilroy.</p> <p>Highway 152 is primarily a two-lane undivided highway along most of its length, but the segment between Highway 1 and Elkhorn Road in Pajaro is a four-lane divided expressway. As the road crosses Mt. Madonna via Hecker Pass, it becomes hilly with many curves. Due to safety concerns, trucks over 45 feet in length are prohibited on travelling on Highway 152 over Hecker Pass. These trucks are diverted to Highway 129 and other routes.</p>

Highway	Length within AMBAG Region	Description
State Highway 156	23.9 miles	<p>Highway 156, like Highway 129 and Highway 152, is a major route connecting U.S. 101 and Highway 1. Starting from its interchange with Highway 1 and Highway 183 in Castroville, the highway merges with U.S. 101 in Prunedale and then becomes a separate route again near San Juan Bautista. At San Juan Bautista, the highway continues easterly north of Hollister to the Santa Clara County line just south of its terminus with Highway 152. Highway 156 is a California State Scenic Highway from one mile east of Castroville to its intersection with U.S. 101 near Prunedale. At San Juan Bautista, Highway 156 begins as a four-lane divided expressway, but after three miles becomes a two-lane, undivided highway to approximately one mile east of Hollister. Highway 156 is a two-lane expressway as it bypasses Hollister and maintains that configuration to the Santa Clara County line. The reduction in travel lanes can be a traffic bottleneck between Highway 1 and U.S. 101 during peak periods and weekends.</p>
State Highway 183	10.1 miles	<p>Highway 183 is a rural two-lane highway connecting Castroville and Salinas. In Castroville, Highway 183 is also known as Merritt Street and begins at an at-grade interchange with Highway 1. The highway is congested between Highway 1 to Davis Road in the City of Salinas, particularly during commute hours on weekdays. It also experiences high rates of agricultural truck traffic movement.</p> <p>In the City of Salinas, the highway becomes two four-lane divided arterials on Market and North Main Streets. Highway 183 terminates at the U.S. 101 on-ramp south of Bernal Drive/North Main Street.</p>
State Highway 198	26.2 miles	<p>Highway 198 is a two-lane conventional highway beginning at U.S. 101 just west of San Lucas in southern Monterey County and continuing east to the Fresno County line. Traffic volumes are low and are primarily interregional.</p>
State Highway 218	2.85 miles	<p>Highway 218 is a small highway connecting Highway 1 and Highway 68 in Monterey County. The route begins in Seaside as 3 to 4-lane city street then exits in Del Rey Oaks at the east end near State Highway 68.</p>
State Highway 236	16.4 miles	<p>Highway 236 is a two-lane rural road that provides access from Highway 9 at Boulder Creek west to Big Basin Redwoods State Park. Passing through the park, Highway 236 first heads north and then east to reconnect with Highway 9 approximately eight miles north of Boulder Creek. The highway generally is not congested, but does contain narrow to no shoulders, sharp curves and hilly terrain.</p> <p>The segment of Highway 236 generally within Big Basin Redwoods State Park was closed during the CZU Lightning Complex Fire that ignited in August 2020. The segment of the highway remains closed as of the time of preparation of this EIR.</p>

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Operations

A variety of performance measures are used to assess transportation systems. Depending on the type of performance evaluation required, performance measures may be very specific and focus on intersections or roadway segments, or performance measures may be aggregated to evaluate the overall operation of a regional transportation system. A regional travel model typically only contains information on the number of lanes, posted speed and link capacity on roadway segments and lacks information detailed enough to calculate accurate intersection information.

Because of the programmatic nature of the 2045 MTP/SCS, the performance measures discussed herein are aggregated by county and as a region to evaluate the overall performance of the transportation system. Transportation performance measures were used as planning metrics in creating the 2045 MTP/SCS. Roadway transportation performance measures that address performance goals include:

- Total vehicle miles traveled (VMT);
- VMT per capita; and
- Average work trip travel time during peak period.

The basic measure of the amount of roadway transportation generated is vehicle miles traveled (VMT). One vehicle traveling one mile constitutes one vehicle mile, regardless of the size of the vehicle or the number of passengers in the vehicle. Increases in VMT are associated with regional growth that would occur with or without the 2045 MTP/SCS. Thus, VMT data may not reflect deficient traffic operations,¹ although VMT does have a strong correlation with congestion.

An area's per capita (or per person) VMT as applied in this EIR is the total VMT divided by the population of that area and is a measure of the average vehicle miles each person travels on a typical weekday. Per capita VMT tends to increase as a result of greater overall economic activity in the region, higher levels of per-household automobile ownership, and/or a jobs-housing imbalance that contributes to longer average commute distances.

Baseline VMT data for the AMBAG region is shown in Table 4.15-2.

Table 4.15-2 Baseline VMT (2020) for AMBAG Region

Type	Daily VMT
Light Trucks and Cars Only	15,612,061
Total	17,331,954
Total per Capita ¹	22.4

Source: AMBAG RTDM Data for 2045 MTP/SCS, 2021

¹ Total VMT per capita is based on a population size of 774,729 persons (see Section 4.13, *Population and Housing*)

¹ Traffic operational measures such as roadway congestion and delay are not considered for purposes of roadway transportation environmental impact analysis under CEQA.

Comprehensive documentation of the modeling methodology, assumptions, calibration, and inputs used for the RTDM is provided in Appendix F of the 2045 MTP/SCS.

b. Public Transit Transportation

Transit Service Network

Monterey-Salinas Transit (MST) provides fixed route transit service in Monterey County. The fixed route service includes 54 routes and consists of a fleet of 115 vehicles, mostly buses (MST 2020). MST bus stations are located in the cities of Carmel-by-the-Sea, Del Rey Oaks, Greenfield, Gonzales, King City, Marina, Monterey, Pacific Grove, Salinas, Seaside and Soledad, as well as the community of Chualar. MST also provides public transit service in areas of unincorporated Monterey County, including the communities of Castroville, Pajaro, Prunedale, Moss Landing, Toro Park, Carmel Valley, Carmel Highlands and Big Sur. To assist inter-regional connections, MST also provides service to the Watsonville Transit Center in Santa Cruz County and the North County Transportation Center in San Luis Obispo County. MST had 3.08 million passenger trips on its fixed route system in Fiscal Year 2020 (MST 2020).

The Santa Cruz Metropolitan Transit District (METRO) provides fixed route transit service in Santa Cruz County. METRO provides essential bus transit services for all local residents, including students, Highway 17 commuters, transit dependent and choice riders. The county's network for local and express bus routes includes transit centers in Felton, Scotts Valley, Santa Cruz, Capitola and Watsonville. METRO buses serve approximately 479 miles of road throughout the County and cover the majority of arterial and collector routes. Transit to Monterey County is provided at the Watsonville Transit Center via connections with MST. Greyhound provides service from Santa Cruz to surrounding regions. Santa Cruz METRO had approximately 3.3 million passenger trips on its fixed route system in Fiscal Year 2020 (AMBAG 2021).

San Benito County Express is the primary transit provider in the County of San Benito with service in Hollister and countywide via intercounty connections. The County Express system currently provides an On Demand and Tripper services in the City of Hollister, complementary Americans with Disabilities Act (ADA) Paratransit service and a general public Dial-A-Ride.

Operations

Public transit transportation performance measures that address performance goals include:

- Percent of work trips that are 30 minutes or less by transit during peak period; and
- Percent of jobs within 0.5 mile of a high-quality transit stop.

A high quality transit corridor is defined as a corridor that contains transit service with 15-minute frequencies during peak period or a corridor that contains a rail stop. Currently, 12 percent of jobs in the AMBAG region are within 0.5 mile of a high-quality transit stop.² According to AMBAG's Regional Travel Demand Model (RTDM), baseline conditions show

² RTDM (AMBAG 2021) and Geographic Information System analysis (see Appendix G of the MTP/SCS)

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that the percent of work trips that are 30 minutes or less ranges from approximately 58 percent to 85 percent, depending on transportation mode.

c. Active (Bicycle and Pedestrian) Transportation

Bikeways

Bikeways are facilities that provide primarily for, and promote, bicycle travel. There are four types of bikeway classifications identified by the California Department of Transportation (Caltrans) (Caltrans 2017a). These classes are as follows:

- **Class I.** Paths or trails, separated from roadways, for the exclusive use of bicycle and pedestrian modes of travel
- **Class II.** Designated lanes for bicycles on roadways
- **Class III.** Roads where bicycles and vehicles share the travel lanes of the roadway
- **Class IV.** Designated lanes for bicycles on roadways, but which are also separated from the roadway traffic by barricades, such as bollards.

There are several major bike routes through the region, including the Monterey Bay Sanctuary Scenic Trail (MBSST). Although not yet fully constructed, the MBSST is a bicycle and pedestrian pathway network that is envisioned to run from the Santa Cruz/San Mateo County line to Pacific Grove in Monterey County. In addition, some of the abandoned rail lines in the region have been converted to bicycle/pedestrian trail use.

Monterey County

Monterey County has 213 miles of bikeways (TAMC 2018). One of the major continuous bikeways in the county is the Monterey Bay Coastal Bike Trail, which is approximately 29 miles long stretching from Castroville to the Monterey Peninsula and parts of Pebble Beach. The Monterey Bay Coastal Bike Path runs adjacent to the Fort Ord Dunes State Park located between the cities of Seaside and Marina. The state park also has its own bike path that is accessible on both ends of the Fort Ord Dunes Park from the Monterey Coastal Bike Path. Sections of the MBSST have been completed in Monterey County between Pacific Grove and Monterey, between Sand City and Seaside and between Marina and Castroville. Most of these sections are Class I bikeways, but short sections are Class II and Class III (TAMC 2008).

Santa Cruz County

Santa Cruz County has approximately 218 miles of bikeways (SCCRTC 2021). It is likely that additional bikeways have been constructed since the 2014 adoption of the most recent MTP/SCS. Many of the county's major collector and arterial roadways have been established as Class II bikeways (bike lanes), providing an extensive network of resources linking cities throughout the county. For example, Class II bikeways are provided on Bay Drive and High Street in the City of Santa Cruz, providing a bicycle connection between the downtown area of the city and the University of California at Santa Cruz. There are few Class I bikeways (bike

paths) in the County. The Wilder Ranch Bike Path, which is a Class I bikeway located just west of the City of Santa Cruz is part of the Monterey Bay Sanctuary Scenic Trail.

San Benito County

Bicycle facilities in San Benito County are generally concentrated in and around Hollister. A Class I bikeway is located approximately parallel with State Highway 25 from near the southern limits of Hollister to near the center of the city, north of Rancho San Justo Park. Class II bikeways are provided on several streets in Hollister, including State Highway 25 Bypass, Westside Boulevard, Southside Road and Union Road. A Class I bikeway extends between Tres Pinos School and the community of Tres Pinos, south of the City of Hollister. Within the City of San Juan Bautista, a short section of San Juan Highway is in the northern part of town has designated bike lanes. Additionally, Class II bike lanes extend north of San Juan Bautista to Anzar High School on either side of San Juan Highway. The Juan Bautista de Anza National Historic Trail traverses San Juan Bautista and the western part of the county.

d. Rail Transportation

The rail network within the region includes all rail lines or other facilities currently served by a railroad for passenger or freight movement, rail lines used for recreational service, rail lines not currently in use, and abandoned rail lines or facilities (either with or without track). With the exception of Watsonville Junction, all of the region's rail lines are single track. Some of the abandoned rail lines have been converted to bicycle/pedestrian trail use.

Passenger Rail

The only regular passenger rail transportation currently operating in the region is provided by Amtrak. Amtrak trains share the Union Pacific Railroad main line tracks. There is one passenger rail station located in the City of Salinas at 30 Railroad Avenue, in the downtown area. This stop services Amtrak's Coast Starlight train, which connects Los Angeles to Seattle.

Monterey County

Both passenger and freight rail service are available in Monterey County. Amtrak provides rail service for its Coast Starlight train twice daily via a station stop in Salinas.

Santa Cruz County

There is currently no passenger rail service in Santa Cruz County. In 2015 the RTC completed the Santa Cruz Rail Transit Feasibility Study which evaluated the feasibility of adding rail transit service on the Santa Cruz Branch Rail Line between Santa Cruz and Watsonville. In 2019, the RTC accepted the Transit Corridor Alternatives Analysis and Rail Network Integration Study (TCAA/RNIS) which selects electric passenger rail as the locally preferred alternative for the Santa Cruz Branch Rail Line. The TCAA/RNIS was prepared to evaluate high-capacity transit investment options and identify a locally preferred transit system that utilizes the Santa Cruz Branch Rail Line Right-of-Way (SCBRL ROW).

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San Benito County

There is currently no passenger rail service in San Benito County.

Freight Rail

The majority of rail freight service in the region is provided by the Union Pacific Railroad Company and by Saint Paul & Pacific Railroad (SPPR). Agricultural produce and construction materials are the principal rail freight shipments in the region.

Monterey County

Both freight and passenger rail service are available in Monterey County. Four freight stations are located in Castroville, Gonzales, Salinas and Watsonville Junction (Pajaro Community Area).

Santa Cruz County

Freight rail service, once operated by Southern Pacific Railroad and then by Union Pacific and now SPPR, has been a historically important form of transportation within Santa Cruz County. There are currently three rail lines in or adjacent to Santa Cruz County that are also occasionally used for freight.

San Benito County

Rail freight service to Hollister and northern San Benito County is provided by the Union Pacific Hollister Branch line (Union Pacific 2016). Union Pacific Railroad retains an exclusive easement to operate freight rail service on the line.

e. Air Transportation

The AMBAG region has six publicly-owned civil aviation airports, which include the following:

- Monterey Regional
- Salinas Municipal
- King City Municipal (Mesa Del Rey)
- Marina Municipal
- Watsonville Municipal
- Hollister Municipal

Of these airports, only the Monterey Regional Airport provides scheduled air carrier service. There are also several private airports in the region that are used primarily for agricultural or business purposes, but one of these, the Frazier Lake Airpark, also allows public use.

In addition, several civil aviation helipads are maintained for helicopter use in the region, including the Mee Hospital helipad in King City, a Texaco helipad in San Ardo, the Soledad Correctional Training Facility helipad, the Watsonville Community Hospital helipad, the Alta Vista helipad near Watsonville, the Dominican Hospital helipad, the Hollister Municipal

Airport helipad, the Natividad Medical Center helipad in Salinas, and the Hazel Hawkins Memorial Hospital helipad in Hollister.

Currently, there are two operational military airfields in the region: Camp Roberts Army Airfield and Heliport and the Hunter-Liggett Army Airfield.

f. Marine Transportation

Marine transportation activities along the coastal land areas are related to recreation and commercial fishing. There are no general cargo or passenger ship terminals in the AMBAG region. Public use marine facilities on the Monterey Bay include the Monterey Harbor and the Moss Landing Harbor in Monterey County and the Santa Cruz Harbor in Santa Cruz County.

g. Emerging Transportation Technology

New transportation technologies can have an important influence on regional and national transportation systems, and some have already started to change longstanding transportation behaviors. Transportation innovations include the following: on-demand ridesharing; connected and autonomous vehicles; mobility aggregation applications that provide users with one source for mobility services (e.g., Moovel, CityMapper); transportation network companies (TNCs) (i.e., Lyft, Uber); coordinated and adaptive traffic signals; active traffic management, which provides the ability to dynamically manage traffic through use of strategies such as adaptive ramp metering and adaptive traffic signal control; and unmanned aircraft systems. These and other emerging technologies have the potential to transform mobility choices and alter the transportation landscape. For example, a company called Joby Aviation currently leases space at the Marina Airport and is developing unmanned aircraft that will operate as on-demand personal taxi service. The effect these technologies will have on the transportation system is uncertain and will be shaped by regulations and policies surrounding their use.

h. Transportation Demand Management/Transportation System Management

Transportation Demand Management (TDM) refers to all programs and strategies that are intended to reduce the number of vehicle trips required over the transportation network or shift the distribution of trips between time periods across the network (FHWA 2012). Transportation System Management (TSM) represents a variety of management techniques designed to improve the efficiency and effectiveness of the transportation system. These techniques improve operations and/or services of existing and future transportation networks (FHWA 2012).

Vehicle Flow Management

The Department of Energy's Fuel Efficient Traffic Signal Management Program has assisted in increasing the number of synchronized traffic signals within the region to promote free flowing vehicle transportation conditions, less use of vehicle fuel, and decreased pollution due to less vehicle miles traveled. In the past, some jurisdictions within the region have

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implemented minor design improvements to the existing transportation infrastructure in lieu of costly capital construction or reconstruction. In the future, signalization, channelization, and the construction of acceleration and deceleration lanes with ramp metering at key interchanges are expected to achieve roadway vehicle flow improvements.

Intermodal Transportation

Transportation engineers and planners in the AMBAG region have employed one or more of the following methods of enhancing intermodality to increase the use of the existing transportation capacity more efficiently:

- Coordinate transit routes and schedules with those of inter-city rail and bus service;
- Provide amenities and facilities for bicycle and pedestrian access to transit stops;
- Facilitate and encourage access to the regional air carrier airport by paratransit, transit, taxi, transportation network companies and bicycle; and
- Provide park and ride facilities with bicycle, pedestrian and transit access amenities.

Ridesharing

Rideshare programs help reduce congestion and improve traffic flow. AMBAG, with grant assistance from the Monterey Bay Air Resources District (MBARD), has successfully implemented a subsidized vanpool program, which reduced vehicles trips associated with agricultural activities and production in the region. Rideshare and carpool programs exist throughout Monterey Bay to facilitate ridesharing.

Preferential Transit/Carpool Treatment/Electric Vehicle Charging

Methods employed by local jurisdictions to encourage people to reduce their use of single-occupant vehicles include preferential parking for carpools and vanpools; subsidized transit passes; use of agency vans for vanpooling; and provision of an on-site transportation coordinator. Regional transit agencies strive to ensure that major developments within their service areas are transit accessible and that transit stops are located to promote transit use.

Shared Parking Facilities

Parking management refers to programs that result in more efficient use of parking resources and can either provide an incentive or disincentive to single occupant vehicle use. Parking facilities that are shared between multiple users and destinations are found within the region. Park and ride lots are a form of off-site shared parking facilities and facilitate ridesharing. Park and ride lots within the region have been placed in locations where people can easily meet and form carpool trips. In an effort to encourage ridesharing, there are fifteen formal, informal and joint use park and ride lots in the AMBAG region. Of the six park and ride lots that serve Santa Cruz County commuters, four are publicly owned and two are shared use by agreement with local churches (Caltrans 2014). San Benito County has two formal park and ride lots (Caltrans 2014). Monterey County commuters have five formal park and ride lots from which to choose (MST 2017; Caltrans 2014). Parking garages are frequently

associated with shared parking in the AMBAG region and are located near destinations attracting a large number of visitors. Parking regulations which control when and how long vehicles may park and the cost of the parking in a location is another form of parking management in the region.

4.15.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

Moving Ahead for Progress in the 21st Century Act

The Moving Ahead for Progress in the 21st Century Act (MAP-21), was enacted in 2012. Through the MTP development process, MAP-21 encourages Metropolitan Planning Organizations (MPOs), such as AMBAG, to:

Consult with officials responsible for other types of planning activities that are affected by transportation in the area (including State and local planned growth, economic development, environmental protection, airport operations and freight movements) or to coordinate its planning process, to the maximum extent practicable, with such planning activities (23 U.S.C. §134(g)(3)(A)).

Specifically, MAP-21 requires that the MTP planning process provide for consideration of projects and strategies that will:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency;
- Increase the safety of the transportation system for motorized and non-motorized users;
- Increase the security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility of people and for freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation; and
- Emphasize the preservation of the existing transportation system (23 U.S.C. §134(h)(1)).

Fixing America's Surface Transportation Act

Fixing America's Surface Transportation (FAST) Act builds on the changes made by MAP-21, and was signed into law in December 2015 (Public Law 114-94). The FAST Act authorizes \$305 billion through fiscal year 2020 for highways, highway and motor vehicle safety, public transportation, rail and research and technology programs and provides a dedicated source of federal funds for freight projects. The FAST Act expands the scope of consideration of the metropolitan planning process to include: consideration of intercity transportation, including

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intercity buses, intercity bus facilities and commuter vanpool providers; improving transportation system resiliency and reliability; reducing or mitigating the stormwater impacts of surface transportation; and enhancing travel and tourism. In addition, it requires strategies to reduce the vulnerability of existing transportation infrastructure to natural disasters.

Under the FAST Act, the U.S. Department of Transportation requires that MPOs, such as AMBAG, prepare long-range transportation plans and update them every four years if they are in areas designated as “nonattainment” or “maintenance” for federal air quality standards. Before enactment of the FAST Act and its predecessor, MAP-21, the primary federal requirements regarding long-range transportation plans were included in the metropolitan transportation planning rules (23 CFR Part 450 and 49 CFR Part 613). The FAST Act makes a number of changes to the statutes that underpin these regulations. Per federal requirements, long-range transportation plans must:

- Be developed through an open and inclusive process that ensures public input; seeks out and considers the needs of those traditionally under served by existing transportation systems; and consults with resource agencies to ensure potential problems are discovered early in the planning process;
- Be developed for a period of not less than 20 years into the future; long-range transportation plans must reflect the most recent assumptions for population, travel, land use, congestion, employment and economic activity;
- Have a financially constrained element, transportation revenue assumptions must be reasonable, and the long-range financial estimate must take into account construction-related inflation costs;
- Include a description of the performance measures and performance targets used in assessing the performance of the transportation system;
- Include a system performance report evaluating the condition and performance of the system with respect to performance targets adopted by the state that detail progress over time;
- Include multiple scenarios for consideration and evaluation relative to the state performance targets as well as locally-developed measures.
- Conform to the applicable federal air quality plan, called the State Implementation Plan, for ozone and other pollutants for which an area is not in attainment; and
- Consider planning factors and strategies in the local context (California Transportation Commission, 2010)

On September 30, 2020, the United States Senate approved H.R. 8337, which provides fiscal-year 2021 appropriations to federal agencies for continuing projects and activities of the federal government. Included in this act is a 1-year, \$13.6 billion extension of the FAST Act.

b. State Laws, Regulations, and Policies

California Transportation Plan

The California Transportation Plan is prepared by the California State Transportation Agency every five years to provide a long-range policy framework to meet the State's future mobility needs and reduce greenhouse gas emissions to goals set by the California Global Warming Solutions Act of 2006 (AB 32, discussed in Section 4.8, *Greenhouse Gas Emissions/Climate Change*) and implementing legislation SB 375 (discussed below). The most recent California Transportation Plan was adopted in 2021 (Caltrans 2021). The California Transportation Plan defines goals, performance-based policies, and strategies to achieve the State's collective vision for California's future statewide, integrated, multimodal transportation system by envisioning a sustainable system that improves mobility and enhances quality of life. The California Transportation Plan is developed in collaboration with transportation stakeholders such as AMBAG. Through ongoing engagement, the California Transportation Plan is intended to provide goals and visions to support a fully integrated, multimodal, sustainable transportation system that supports the quality of life, prosperous economy, human and environmental health and social equity.

Climate Action Plan for Transportation Infrastructure

The Climate Action Plan for Transportation Infrastructure (CAPTI) was adopted on July 12th, 2021. CAPTI details how the state recommends investing billions of discretionary transportation dollars annually to aggressively combat and adapt to climate change while supporting public health, safety and equity. CAPTI builds on executive orders signed by Governor Gavin Newsom in 2019 and 2020 targeted at reducing greenhouse gas (GHG) emissions in transportation, which account for more than 40 percent of all emissions, to reach the state's ambitious climate goals (CalSTA 2021).

State Regional Transportation Plan Requirements

Government Code Sections 65080 et seq. state that MPOs must prepare and adopt a long-range transportation plan, such as a RTP or MTP, directed at achieving a coordinated and balanced regional transportation system, including, but not limited to, mass transportation, highway, railroad, maritime, bicycle, pedestrian, goods movement and aviation facilities and services. The plan must be action-oriented and pragmatic, considering both the short-term and long-term planning, and shall present clear, concise policy guidance to local and state officials. The transportation plan must consider factors specified in the FAST Act metropolitan transportation planning rules (23 CFR Part 450 and 49 CFR Part 613), and each transportation planning agency must consider and incorporate, as appropriate, the transportation plans of cities, counties, districts, private organizations and state and federal agencies.

Pursuant to Government Code section 65080(d), MPOs, such as AMBAG, that are located in nonattainment and monitoring areas must update their long-range transportation plans at least every four years.

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The California Transportation Commission has developed RTP guidelines to assist MPOs with developing their RTPs so that they are consistent with federal and state transportation planning requirements. The guidelines are updated and adopted periodically, as needed. For the first time, two separate guidelines were adopted in January 2017 to guide RTP development in MPOs and RTPAs. Both documents incorporate new legislation and the associated goals, particularly related to reducing GHG emissions and improving air quality. Both the 2017 RTP Guidelines for MPOs (California Transportation Commission, 2017a) and the 2017 RTP Guidelines for RTPAs (California Transportation Commission, 2017b) specify that the requirements outlined in the documents apply to all RTP updates begun following adoption. Since the 2045 MTP/SCS and RTPs were started after the January 2017 adoption date of the 2017 RTP Guidelines, AMBAG has used the 2017 RTP Guidelines for the 2045 MTP/SCS and the RTPAs have used the 2017 RTP Guidelines for the RTPs.

The 2017 RTP Guidelines include guidelines for regional travel demand modeling. The regional travel demand model guidelines are “scaled” to different sizes of MPOs. The guidelines also describe the methods for projecting of future travel demand, as well as the key assumptions typical of transportation demand models. In addition, the guidelines describe the consultation and coordination process, which are designed to foster involvement by all interested parties including air quality agencies, discuss the environmental considerations of an RTP, and list the general contents of an RTP document.

Senate Bill 375

The Sustainable Communities and Climate Protection Act of 2008 (Chapter 728, Statutes of 2008) (SB 375) diversified the areas of study from past MTPs and RTPs to include land use impacts and climate change issues. Specifically, SB 375 requires MPOs to prepare a Sustainable Communities Strategy (SCS) that demonstrates how the region will meet its greenhouse gas (GHG) reduction targets through integrated land use, housing and transportation planning. The SCS must identify a transportation network that, when integrated with the forecasted development pattern for the AMBAG region, will reduce GHG emissions from automobiles and light trucks in accordance with targets set by CARB. See Section 4.8, *Greenhouse Gas Emissions/Climate Change*, for a more in-depth discussion of SB 375 and its implications for the proposed 2045 MTP/SCS.

Under SB 375, some development and transportation projects assumed as a part of the 2045 MTP/SCS may be eligible to use a streamlined version of the environmental review process. Among other criteria, these projects must be consistent with the land use designation, density, intensity, and policies of the 2045 MTP/SCS, and fall within the identified criteria for development and transportation projects. Streamlining under SB 375 is described in more detail in Section 1.4.1, *CEQA Streamlining Opportunities*.

Senate Bill 743

SB 743 (2013) changed the way that public agencies evaluate the transportation impacts of projects under CEQA, recognizing that roadway congestion, while an inconvenience to drivers, is not itself an environmental impact. (See PRC Section 21099(b)(2) [“automobile

delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to [CEQA]”).)

Under SB 743, the Governor’s Office of Planning and Research (OPR) established VMT as the preferred metric for measuring transportation impacts of most projects in place of vehicle level of service (LOS) or related measures of congestion as the primary metric. The use of VMT for determining significance of transportation impacts has become commonplace since the certification of this provision and the release of OPR’s Technical Advisory on Evaluating Transportation Impacts in CEQA in December 2018 and, as of July 1, 2020, is the required metric statewide.

For land use projects, SB 743 provides opportunities to streamline transportation analysis under CEQA for qualifying urban infill development near major transit stops in metropolitan regions statewide, as described in more detail in Section 1.4.1, *CEQA Streamlining Opportunities*. Additionally, the legislation establishes that aesthetic and parking impacts of these projects are not considered significant impacts on the environment.

SB 743 can also substantially affect the review of transportation projects under CEQA. Some projects, such as expanding facilities for bicycle, pedestrian, or transit only use, will not result in adverse transportation impacts because they are assumed not to substantially increase automobile trips. However, for roadway capacity projects, the CEQA guidelines (Section 15064.3) give lead agencies some discretion over what metric is used to evaluate transportation impacts, as some roadway expansion projects can induce vehicle travel. If using a metric besides VMT, however, the change in vehicle travel should still be reported. A program-level assessment of roadway projects in a regional plan may also be used to streamline project level analysis (OPR 2018).

Caltrans has provided two guidance documents to address VMT impacts on the state highway system consistent with the requirements of SB 743 and the OPR Technical Advisory:

- The Transportation Analysis under CEQA (TAC) provides information to support CEQA practitioners in making CEQA significance determinations for transportation impacts of projects on the state highway system. These could include land use projects or transportation projects (Caltrans 2020).
- The Transportation Analysis Framework (TAF) guides the preferred approach for analyzing the VMT attributable to proposed projects (induced travel) in various project settings, with particular focus on the analysis of induced travel associated with transportation projects which would add road capacity to the transportation system (Caltrans 2020).

State CEQA Guidelines Section 15064.3 and OPR Technical Advisory

State CEQA Guidelines Section 15064.3 implements SB 743 and establishes VMT as the most appropriate measure of transportation impacts. The primary components of Section 15064.3 include:

- Identifies VMT as the most appropriate measure of transportation impacts;

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- Declares that a project's effect on automobile delay shall not constitute a significant environmental impact (except for projects increasing roadway capacity);
- Creates a rebuttable presumption of no significant transportation impacts for (a) land use projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor, (b) land use projects that reduce VMT below existing conditions, and (c) transportation projects that reduce or have no impact on VMT;
- Allows a lead agency to qualitatively evaluate VMT if existing models are not available; and
- Gives lead agencies discretion to select a methodology to evaluate a project's VMT, but requires lead agencies to document that methodology in the environmental document prepared for the project.

CEQA lead agencies were required to comply with the State Guideline Section 15064.3 no later than July 1, 2020. Some municipalities in the AMBAG region either adopted thresholds before July 2020 or since July 2020 for purposes of evaluating VMT impacts of projects within their jurisdiction. For example, the County of Santa Cruz Board of Supervisors adopted Resolution 146-2020 on June 16, 2020, effectively establishing significance thresholds for VMT impacts in the unincorporated areas of Santa Cruz County. Other municipalities and agencies in the AMBAG region have not formally adopted thresholds for evaluating VMT impacts, but instead generally use a threshold of 15 percent less VMT per capita than existing average VMT for the area. The 15 percent below existing VMT threshold for land use projects is based on guidance provided by the OPR in its *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR 2018), specifically, the following language:

Based on OPR's extensive review of the applicable research, and in light of an assessment by the CARB quantifying the need for VMT reduction in order to meet the State's long-term climate goals, OPR recommends that a per capita or per employee VMT that is 15 percent below that of existing development may be a reasonable threshold. Fifteen percent reductions in VMT are achievable at the project level in a variety of place types. Moreover, a 15 percent reduction is consistent with SB 743's direction to OPR to select a threshold that will help the State achieve its climate goals. As described above, section 21099 states that the criteria for determining significance must "promote the reduction in greenhouse gas emissions." In its document the CARB 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals, CARB assesses VMT reduction per capita consistent with its evidence-based modeling scenario that would achieve State climate goals of 40 percent GHG emissions reduction from 1990 levels by 2030 and 80 percent GHG emissions reduction levels from 1990 by 2050. Applying California Department of Finance population forecasts, CARB finds per capita light-duty vehicle miles travel would need to be approximately 16.8 percent lower than existing, and overall per-capita vehicle travel would need to be approximately 14.3 percent lower than existing levels under that scenario. Below these levels, a project could be considered low VMT and would, on that metric, be consistent with 2017 Scoping Plan Update assumptions that achieve climate state climate goals... In summary, achieving 15 percent lower per capita

(residential) or per employee (office) VMT than existing development is both generally achievable and is supported by evidence that connects this level of reduction to the State's emissions goals (OPR 2018).

Assembly Bill 1358

AB 1358, also known as the Complete Streets Act of 2008, amended the California Government Code Section 65302 to require that any substantive revisions to a city or county's Circulation Element include provisions for accommodations of all roadway users, including bicyclists and pedestrians.

California Bicycle Transportation Act

The California Bicycle Transportation Act of 1994 requires all cities and counties to have an adopted bicycle master plan to apply for Bicycle Transportation Account funding source.

c. Regional and Local Laws, Regulations, and Policies

Regional Transportation Planning Agency Transportation Plans

As described in Section 1.2, *Project Background*, there are three RTPAs that oversee some planning, programming and administration functions related to transportation projects and coordinating directly with local agencies in their part of the AMBAG region. These RTPAs are TAMC for Monterey County, SBtCOG for San Benito County, and SCCRTC for Santa Cruz County. Each RTPA prepares a county-level long-range RTP. Under federal regulations (23 CFR 450.322(c)) and State law (Government Code 65080(d)), the RTPAs must update their RTPs every four years. RTPs must be consistent with the California Transportation Plan.

General Plans

State law requires cities and counties to adopt general plans, which must incorporate a circulation element, also often called a transportation element. A general plan's transportation element is an infrastructure plan and policy document used to determine the needed expansion or modification of the transportation network (including services) to accommodate planned population and employment growth. The elements generally address expectations for transportation network operations and safety based on goals and policies of the city or county. Transportation elements typically address the roadway network and its traffic operations, goods movement, public transit, bicycle facilities and pedestrian facilities.

Applicable county general plans and examples of city general plans in the AMBAG region are discussed below.

Monterey County

The Monterey County General Plan (Monterey County 2010a) contains various goals and policies that pertain to transportation and circulation within Monterey County. Some applicable policies include protecting public transportation facilities from the encroachment of incompatible land uses; encouraging a reduction in the number of vehicle miles traveled

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per person; encouraging land use patterns that reduce the need to travel by automobile; and locating and designing new development with convenient access and efficient transportation. Additionally, the County's General Plan includes policies encouraging new development to be concentrated along major transportation corridors and near cities to make transit services to these areas more feasible; encouraging the use of public transit and alternative modes of transportation through land use designations and zoning which cluster employment centers with a mix of other land uses; and endorsing efforts to accommodate mobility-impaired persons on regularly scheduled public transit operations.

Cities in Monterey County also have general plans with goals and policies pertaining to transportation. For example, the City of Seaside's General Plan contains Policy C-2.2, which directs the City to support programs that help reduce congestion and encourage alternative modes of transportation. Policy C-3.1 encourages the City to support the provision and expansion of regional transit services and support facilities, and Policy C-3.4 encourages the City to support alternative modes of transportation, such as biking and walking (City of Seaside 2004).

San Benito County

The San Benito County 2035 General Plan (San Benito County 2015) contains various goals and policies that pertain to transportation and circulation within San Benito County. Some applicable policies include ensuring that, whenever possible, roadway, highway, public transit systems and pedestrian and bicycle trails are interconnected with other modes of transportation; encouraging development project applicants to provide sidewalks or pedestrian paths, or other safe and convenient accommodations for pedestrians; encouraging transit lines, stops and facilities in locations where land uses and density would support transit use; encouraging major employment centers to work with the Local Transportation Authority to facilitate the provision of adequate public transit facilities; and encouraging employers to provide transit subsidies, bicycle facilities, alternative work schedules, ridesharing, telecommuting, employee education and preferential parking for carpools/vanpools.

Cities in San Benito County also have general plans with goals and policies pertaining to transportation. For example, the City of Hollister's General Plan contains policies encouraging the City to provide a variety of pedestrian and bicycle facilities to promote safe and efficient non-motorized vehicle circulation in Downtown and throughout Hollister; and to cooperate with Caltrans, the SBtCOG, the County of San Benito, and any other regional transportation authorities to ensure the funding and implementation of the transportation improvements specified in the San Benito County RTP (City of Hollister 2005).

Santa Cruz County

The Santa Cruz County General Plan and Local Coastal Program (Santa Cruz County 1994) contains goals and policies pertaining to transportation. It is the goal of the County General Plan to reduce automobile trips and congestion by improving alternative transportation modes, developing effective travel demand management strategies and whenever possible

improving the efficiency rather than increasing the size of the existing road system. Policies to achieve this goal include reducing VMT by encouraging concentrated commercial centers with mixed residential and commercial uses; and encouraging use of bicycles, public transit and other modes of transportation besides single-occupancy vehicles.

Cities in Santa Cruz County also have general plans with goals and policies pertaining to transportation. For example, the City of Capitola's General Plan (2014) contains goals to provide "Complete Streets" that serve all modes of transportation, including vehicles, public transit, bicyclists, and pedestrians; to provide balanced multi-modal transportation system that enhances mobility in a safe and sustainable manner; to improve and expand public transportation services for residents, workers, and visitors; to provide a complete network of bikeways and bicycle facilities in Capitola; and to provide high quality pedestrian facilities that support walking and the enjoyment of the outdoors in Capitola.

Bicycle Master Plans and Other Modal Plans

City- and countywide bicycle and pedestrian master plans, active transportation plans and other mode-specific plans serve as policy documents to guide the development and maintenance of the transportation network, support facilities and non-infrastructure programs. These plans describe the acceptable operating service standards, facility classifications, opportunity sites, and mode-specific goals and policies of a given city or county.

Numerous existing bicycle and other modal plans have been adopted for the AMBAG region. For example, TAMC adopted the Monterey County Active Transportation Plan in June 2018. The plan focuses on analyzing key gaps from the existing and proposed bicycle and pedestrian networks, identifying opportunity sites for innovative bicycle facility design, and identified areas for enhanced regional and local connectivity (TAMC 2018). Other examples of applicable plans in the AMBAG region include the San Benito County Bikeway and Pedestrian Master Plan (SBtCOG 2009) and the Santa Cruz County Bicycle Plan (Santa Cruz County 2011). This EIR does not explicitly identify localized transportation issues that might be the focus of a city- or countywide modal plan; rather, it addresses issues of overall transportation system performance from a regional perspective.

4.15.3 Impact Analysis

a. Methodology and Significance Thresholds

The criteria for determining whether the 2045 MTP/SCS would have significant environmental impacts related to transportation and traffic were based in part on the environmental checklist in Appendix G of the *State CEQA Guidelines* (14 CCR 15000 et seq.) and performance measures established by AMBAG. Significant impacts to transportation would occur if the plan would:

1. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Any increase in the following performance indicators would be considered a significant impact:

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- a. Percent of jobs outside ½ mile of a high quality transit stop; or
 - b. Substantially disrupt transit service; or
 - c. Result in inconsistencies with adopted bicycle and pedestrian facilities plans.
2. Would the project conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?
 - a. A change in VMT per capita in the region that fails to reach 15 percent below existing VMT per capita conditions would be considered a significant impact; or
 - b. A substantial increase in induced travel due to roadway capacity expansions would be considered a significant impact;
3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
4. Result in inadequate emergency access.

AMBAG utilized its regional travel demand model (RTDM) to compare the 2045 conditions under the 2045 MTP/SCS to the 2020 baseline conditions using a range of performance metrics (see Appendix C). The AMBAG RTDM is a trip-based platform that includes Monterey, San Benito, and Santa Cruz counties. The RTDM allows AMBAG to obtain an understanding of the transportation network performance characteristics (e.g., vehicle speeds, volume to capacity relationships, travel time, VMT) and estimate how socioeconomic changes (e.g., population increases, land use development) will impact travel demand. The RTDM allows for comparisons of different scenarios, including consequences of future changes or absence of change to the transportation system (e.g., building new facilities, improving existing facilities, or doing nothing at all).

The AMBAG RTDM has been peer reviewed and meets best practice standards. A Federal Highway Administration (FHWA) sponsored TMIP peer review was conducted in 2013 to review the AMBAG model and discuss future model needs and improvements. The Metropolitan Transportation Plan (MTP) determines what transportation projects are programmed into the RTDM. The existing RTDM reflects transportation projects adopted by the AMBAG Board of Directors in June 2018.

The 2022 AMBAG RTDM is an updated travel demand model estimated and calibrated to 2015 conditions. The model updates and improves upon the 2015 base year update performed in 2018. The 2022 RTDM is estimated and calibrated using survey data from the 2012 California Household Travel Survey (CHTS) and the 2017 National Household Transportation Survey (NHTS), Census, employment, and traffic data for the 2015 base year utilized for the 2045 MTP/SCS.

This EIR analysis utilizes a 2020 baseline. Because the pandemic orders began in early March 2020, there is insufficient transportation data to accurately establish measured or observed conditions for VMT and other transportation metrics, such as transit use, for EIR baseline year 2020. Therefore, the 2022 RTDM was utilized to model 2020 baseline conditions for these

transportation metrics, as the model reflects more typical transportation patterns in the AMBAG region that would otherwise exist had the pandemic never occurred.

The model utilizes advance techniques to capture travel behavior at a more individual level and incorporates disaggregate level data into some of the modeling stages. The primary reasons for introducing more disaggregate level data into the model was to assist in addressing elements of SB 375, and to pave the way for a possible transition to a tour-based modeling approach in the future. This updated model is a traditional four-step trip-based approach, and as such includes models for Trip Generation, Trip Distribution, Mode Choice, and Trip Assignment. Specific differences compared with traditional approaches include a population synthesis to drive the trip generation socioeconomic variables, calculation of the 4D variables (Density, Diversity, Design, and Destinations) using GIS techniques to support inputs to various model stages, the use of person-based trip rates, destination choice model for the trip distribution, and a mode choice component designed and estimated entirely from the survey.

b. Project Impacts and Mitigation Measures

The following section describes transportation impacts associated with the transportation projects and land use scenario included in the 2045 MTP/SCS. Due to the programmatic nature of the 2045 MTP/SCS, a precise, project level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2045 MTP/SCS could result in the transportation impacts as described in the following sections.

Threshold 1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Any increase in the following performance indicators would be considered a significant impact:

- a. Percent of jobs outside of ½ mile of a high-quality transit stop;
- b. Substantially disrupt transit service; or
- c. Result in inconsistencies with adopted bicycle and pedestrian facilities plans

Impact T-1 THE 2045 MTP/SCS WOULD NOT RESULT IN A SIGNIFICANT IMPACT DUE TO CONFLICTS WITH ANY PROGRAMS ADDRESSING THE CIRCULATION SYSTEM. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Job Proximity to Transit Stops

Table 4.15-3 compares the percent of jobs that are within 0.5 mile of a high-quality transit stop under 2020 and 2045 conditions with implementation of the 2045 MTP/SCS. Conditions in 2045 without implementation of the 2045 MTP/SCS are also provided for informational purposes.

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Table 4.15-3 Percent of Jobs Within 0.5 Mile of a High-Quality Transit Stop

County	Baseline Conditions (2020)	2045 Conditions with 2045 MTP/SCS	2045 Conditions without 2045 MTP/SCS
AMBAG Region	12.0%	24.8%	11.8%

Source: RTDM (AMBAG 2021) and Geographic Information System analysis (see Appendix G of the MTP/SCS)

As shown in Table 4.15-3, the 2045 MTP/SCS would increase the percentage of jobs that are within 0.5 mile of a high-quality transit stop by 12.8 percentage points compared to baseline 2020 conditions. Thus, the 2045 MTP/SCS would have a beneficial impact by increasing the percentage of jobs within 0.5 mile of a high-quality transit stop. Therefore, impacts would be less than significant under this threshold.

Transit Service

The 2045 MTP/SCS transit projects include increasing bus capacity and lanes such as along E. Alisal Street in the City of Salinas and increasing the frequency of some bus line services. The 2045 MTP/SCS projects also include bus maintenance and preventative maintenance, which would help ensure reliability of the bus fleets of the MST, Santa Cruz METRO, and San Benito County Express, and minimize the potential for transit disruptions due to equipment failure. These types of projects and improvements would improve conditions for bus operations in the region.

As indicated in Table 4.15-4, between 2020 and 2045 the amount of transit trips would increase by 36,713 trips and the percent of peak hour transit trips that are 30 minutes or less in duration would increase by 3.2 percentage points with implementation of the 2045 MTP/SCS. This suggests that bus line service would move more efficiently within the roadway network of the AMBAG region. Thus, the increase in the percentage of transit trips that are less than 30 minutes during peak period can be attributed to infill development included in the 2045 MTP/SCS land use scenario. Infill development would position the workforce and places of employment closer together, essentially creating shorter commute distances and bus trips. This concept is reflected in the 12.8 percentage-point increase in the percent of jobs within 0.5 mile of a high quality transit stop that would occur in the future under the 2045 MTP/SCS, as shown in Table 4.15-3. An increase in the percentage of transit trips that are less than 30 minutes during peak period in 2045 with implementation of the 2045 MTP/SCS would be an improvement compared to baseline conditions.

Table 4.15-4 General Transit Use Indicators

Indicator	Baseline Conditions (2020)	2045 Conditions with 2045 MTP/SCS	2045 Conditions without 2045 MTP/SCS
Transit Trips*	345,346	382,059	378,437
Percent of Peak Hour Work Trips by Transit that are 30 Minutes or Less	57.6%	60.8%	59.5%

* The transit trips shown in this table include bicycle and pedestrian trips, as well as transit trips.
Source: RTDM (AMBAG 2021) and Geographic Information System analysis (see Appendix G of the MTP/SCS)

The transit use indicator values for the 2045 MTP/SCS shown in Table 4.15-4 are likely low given the lack of sensitivity to transit within the RTDM. It is common practice to calibrate models to observe conditions within the region. Currently the region has relatively low transit ridership; however, it also has very few passenger rail services. Further, the region does not have a wide-spread practice of transit oriented development (TOD). Thus, the RTDM is not sensitive to premium transit service³ or land use changes near those services and underestimates the total ridership gains that would be realized with the introduction of new types of infrastructure. Improvements would result from both the SCS land use scenario emphasis on infill and TOD and implementation of additional transit services and facilities. These improvements would be beneficial for MST, Santa Cruz METRO, and San Benito County Express transit services. Impacts would be less than significant, since transit service would not be substantially disrupted.

Bicycle and Pedestrian Facilities

The 2045 MTP/SCS is intended to improve the system for all modes of transportation so that motor vehicles and non-motorized vehicles can use the streets simultaneously and safely. The 2045 MTP/SCS includes goals and policies to support bicycle and pedestrian facilities. Projects within the 2045 MTP/SCS would add new pedestrian and bicycle facilities, including sidewalks, cross walks, trails and bike lanes, bicycle/pedestrian bridges parallel to existing overpasses and over railways, upgrading ramps to be ADA compliant, as well as safety measures such as intersection crosswalks and safety programs related to schools, repairing failing sections of recreational trails, and installing protected bicycle lanes, traffic-calming measures, and rapid-flashing beacons and streetlights. Bicycle and pedestrian improvement projects identified in the 2045 MTP/SCS are aimed primarily at improving bicycle and pedestrian safety and expanding facilities such as bike lanes. The 2045 MTP/SCS includes projects that would result in the addition of more Class I and Class II bike lanes to the AMBAG region by 2045. Pedestrian and bicycle facilities would be designed and constructed in compliance with applicable safety regulations, such as the California Manual of Uniform Traffic Control Devices.

³ Premium transit service typically means a high-quality transit, either bus or rail, that reduces transit travel times, enhances regional connectivity, and provides improved vehicle and transit amenities to attract new customers.

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As shown in Table 4.15-4 above, the 2045 MTP/SCS projects would also increase transit trips, which includes pedestrian and bicycle trips, in the AMBAG region in 2045 compared to 2020. Specifically, between 2020 and 2045, daily trips by bicycle mode would increase by 770 trips and trips by walk mode would increase by 3,970 trips with implementation of the 2045 MTP/SCS. Furthermore, the 2045 MTP/SCS goals, policies, and projects would be consistent with the bicycle and pedestrian mode encouragement, provision, convenience, and safety goals included in the County and City General Plans that are discussed above under Regulatory Framework. Since the 2045 MTP/SCS would result in additional and improved facilities to accommodate pedestrian and bicycle travel modes, there would not be substantial disruption of bicycle and pedestrian facilities, and impacts would be less than significant.

Mitigation Measures

None required.

Threshold 2: Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b) in either of the following manners:

- a. A change in VMT per capita in the region that fails to reach 15 percent below existing VMT per capita conditions would be considered a significant impact; or
- b. A substantial increase in induced travel due to roadway capacity expansions would be considered a significant impact

Impact T-2 THE 2045 MTP/SCS WOULD RESULT IN AN INCREASE TO DAILY VMT PER CAPITA BETWEEN THE BASELINE 2020 CONDITIONS AND 2045 CONDITIONS. PER CAPITA VMT IMPACTS FROM IMPLEMENTATION OF THE 2045 MTP/SCS WOULD BE SIGNIFICANT AND UNAVOIDABLE. THE INDUCED TRAVEL IMPACT AT THE REGIONAL LEVEL WOULD BE LESS THAN SIGNIFICANT.

Per Capita Vehicle Miles Traveled

As shown in Table 4.15-5, total 2045 VMT would increase above 2020 baseline conditions in all three counties, as well as the AMBAG region as a whole. As the table shows, at the regional level, total VMT would increase by 2,700,188 miles, which would be a 15.6 percent increase from baseline 2020 conditions. Per capita VMT would increase between baseline 2020 conditions and 2045 conditions.

The 2045 MTP/SCS does not reduce VMT due to the nature of the AMBAG region, which makes certain aggressive VMT reducing measures are infeasible. For example, the region has a high variability in residential density and has a large rural component, with substantially longer trip lengths and therefore higher VMT for those in rural areas. These commuter trips are not easily replaced by transit, as longer transit trip lengths typically require multiple stops and/or transfers, making commuting via transit less attractive. The rural areas of the AMBAG region are also experiencing higher growth in housing and employment than urban areas. Such growth is particularly evident in the eastern and southern sections of the AMBAG

region, with employment in the agriculture and service industries. These industries require a high level of in-person work and are therefore not conducive to telecommuting. Other factors limiting the applicability of VMT reduction measures are discussed in Section 7.2.1, Aggressive VMT Reduction Alternative, in Section 7, *Alternatives*.

Table 4.15-5 compares the daily VMT and VMT per capita for baseline conditions in 2020 and 2045 conditions with implementation of the 2045 MTP/SCS on all roadways for the AMBAG region as a whole. The daily per capita VMT in 2045 without implementation of the 2045 MTP/SCS is provided in the table for informational purposes.

Table 4.15-5 Daily Vehicle Miles Travelled

County/Region	Baseline Conditions (2020)	2045 Conditions with 2045 MTP/SCS	2045 Conditions without 2045 MTP/SCS
AMBAG Region Total	17,331,954	20,032,142	20,041,051
AMBAG Region Total Per Capita	22.4	23.0	23.0

Source: RTDM (AMBAG, 2021) and Geographic Information System analysis (see Appendix G of the MTP/SCS)

Table 4.15-5 shows that daily VMT per capita would increase from 22.4 to 23 miles by 2045, with or without implementation of the MTP/SCS. As previously discussed, population growth in the region would increase daily total VMT, regardless of the potential implementation of the 2045 MTP/SCS. Compared to baseline conditions, the daily total VMT per capita in the region would increase by the year 2045 under implementation of the 2045 MTP/SCS, and this impact would be significant.

Induced Travel

It should be noted that although this is a program-level analysis, and not project specific, some of the 2045 MTP/SCS projects include expanding the capacity of highways in the region, such as adding additional travel lanes to U.S. 101 near Salinas. Numerous studies and research suggest that an expansion of highway capacity may induce travel (Governor's Office of Planning and Research 2016; Handy 2015; Duranton & Turner 2011). According to the Governor's Office of Planning and Research (2016), the initial reduction in traffic congestion and travel times from increased capacity is attractive to travelers, resulting in more trips on the facility and increasing the total VMT. These types of projects may result in the following trip-making changes, which have implications for total VMT, according to Governor's Office of Planning and Research:

- **Longer Trips.** The ability to travel a long distance in a shorter time increases the attractiveness of destinations that are further away, increasing trip length and VMT.
- **Changes in Mode Choice.** When transportation investments are devoted to reducing automobile travel time, travelers tend to shift toward automobile use from other modes, which increases VMT.

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- **Route Changes.** Faster travel times on a route attract more drivers to that route from other routes, which can increase or decrease VMT depending on whether it shortens or lengthens trips.
- **Newly Generated Trips.** Increasing travel speeds can induce additional trips, which increases VMT. For example, an individual who previously telecommuted or purchased goods on the internet might choose to accomplish those ends via automobile trips as a result of increased speeds.
- **Land Use Changes.** Faster travel times along a corridor lead to land development further along that corridor; that development generates and attracts longer trips, which increases VMT. Over several years, this component of induced VMT can be substantial, e.g., approximately half of the total effect on VMT.

The 2045 MTP/SCS coordinates land use and transportation projects through the 2045 horizon year. The SCS is intended to identify a land use strategy that supports the objectives of SB 375 to achieve, among other things: increased roadway optimization, increased modes of travel other than single occupancy automobiles, increased access to jobs and amenities, minimized increases in VMT and reduced GHG emissions. Among the strategies to meet these goals is a mix of land uses balanced to minimize VMT and maximize the ability for residents and visitors of the region to conduct everyday activities without the need to travel by car. As a consequence, the RTDM and associated transportation system performance results discussed in this analysis capture the effects of land use changes on overall travel demand in the region. Although the AMBAG RTDM does not specifically evaluate induced travel from the perspective of longer trips, changes in mode choice, route changes or newly generated induced trips, at the regional level these effects may be negligible compared to the overall amount of travel. As discussed in the Federal Highway Administration's "HERS-ST Highway Economic Requirements System - State Version: Technical Report - Appendix B: Induced Traffic and Induced Demand" (August 2005), "If the demand is for a single facility, then induced traffic will appear large relative to previous volumes, because most of the change in trips will be from diverted trips. At the regional level, induced traffic would be a smaller share of total traffic growth, because only trips diverted from other regions, plus substitutions between transportation and other goods, make up the induced share." Therefore, additional VMT resulting specifically from induced travel demand would not be substantial, and the induced travel impact at the regional level would be less than significant.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the 2045 MTP/SCS program where applicable for transportation projects that would increase the capacity of a roadway, and where feasible and necessary based on project and site specific considerations. For land use projects under their jurisdiction, the cities and counties in the AMBAG region shall implement the following mitigation measure. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

T-2(a) Land Use Project VMT Analysis and Reduction

Regionally, implementing agencies shall require implementation of VMT reduction strategies through transportation demand management (TDM) programs, impact fee programs, mitigation banks or exchange programs, in-lieu fee programs, and other land use project conditions that reduce VMT. Programs shall be designed to reduce VMT from existing land uses, where feasible, and from new discretionary residential or employment land use projects. The design of programs shall focus on VMT reduction strategies that increase travel choices and improve the comfort and convenience of sharing rides in private vehicles, using public transit, biking, or walking.

At a project level, implementing agencies shall evaluate VMT as part of project specific CEQA review and discretionary approval decisions for land use projects. Where project level significant impacts are identified, implementing agencies shall identify and implement measures that reduce VMT. Examples include but are not limited to:

- Provide car-sharing, vanpool, bike sharing, and ride-sharing programs
- Implement or provide access to commute reduction programs
- Encourage telecommute programs
- Incorporate affordable housing into the project
- Increase density, infill, and transit oriented development
- Increase mixed uses within the project area
- Incorporate improved pedestrian connections within the project/neighborhood
- Incentivize development in low VMT communities
- Incentivize housing near commercial and offices
- Increase access to goods and services, such as groceries, schools, and daycare
- Orient the project toward transit, bicycle, and pedestrian facilities
- Implement complete streets
- Provide traffic calming
- Provide bicycle parking
- Reduce parking requirements
- Separate out parking costs
- Provide parking cash-out programs

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for land use projects are cities and counties. Mitigation shall, or can and should, be applied during project permitting and environmental review and implemented during project operation, as applicable.

T-2(b) Transportation Project VMT Analysis and Reduction

Transportation project sponsor agencies shall evaluate transportation projects that involve increasing roadway capacity for their potential to increase VMT. Where project level

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increases are found to be potentially significant, implementing agencies shall, or can and should, identify and implement measures that reduce VMT. Examples of measures that reduce the VMT associated with increases in roadway capacity include, but are not limited to:

- Tolling new lanes to encourage carpools and fund transit improvements
- Converting existing general purpose lanes to high occupancy vehicle lanes
- VMT banks
- Implementing or funding offsite travel demand management
- Providing a bus rapid transit system
- Improving pedestrian or bicycle networks, or transit service
- Providing transit passes
- Incorporating neighborhood electric vehicle network

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Mitigation shall, or can and should, be applied during project permitting and environmental review and implemented during project operation, as applicable.

Significance After Mitigation

If implementing agencies adopt and require this mitigation, impacts would be reduced because less VMT would be added to the AMBAG region. However, the implementation of project level VMT-reducing measures such as mixed uses and TOD may not be feasible and cannot be guaranteed on a project by project basis. Regional VMT-reduction programs, such as VMT banks, may also not be feasible as there are no procedures or policies in place to establish such facilities. Therefore, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)

Impact T-3 THE 2045 MTP/SCS WOULD NOT SUBSTANTIALLY INCREASE HAZARDS DUE TO GEOMETRIC DESIGN FEATURES OR INCOMPATIBLE USES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Transportation Design Features

The regional growth pattern of the 2045 MTP/SCS does not define design level features of roadways. While the 2045 MTP/SCS expands development and increases density in growth geographies, this growth would not impact geometric design features or roadway uses in a consistent way, as those design standards and uses are established and enforced at the local jurisdictional level. Specific transportation projects under the 2045 MTP/SCS would be subject to and expected to follow the design guidelines established by the State or the local

jurisdiction with authority over the project, including curve radii on curving road segments, maximum road grade/slope, and minimum separating distance between intersections and driveways.

Construction activities from implementation of the 2045 MTP/SCS would be short term, intermittent, and geographically dispersed. At the regional level, these disruptions would be localized, and impacts would be limited and would not represent a significant impact to the operations of the regional transportation system. At the local level, construction activities could increase travel on local roads and result in detours or increased congestion in certain locations. The actual construction details of land use development projects and proposed transportation projects are not known, because the projects are in the early stages of planning. Construction impacts would be evaluated at the project level as more information about the timing, design, scope, and construction program are available. Generally, construction activities for land use development and transportation projects would be required to be conducted in accordance with, and subject to review by, all applicable State and/or local jurisdictions with authority over the project; thus, ensuring projects would be designed to minimize the potential for hazardous conditions and to ensure safe travel by all modes.

The transportation projects would be required to conform to the design standards of the public agency responsible for implementation, and such standards include safety standards. Complete Streets policies and programs, included as part of the 2045 MTP/SCS, also support reducing hazards on roadways and preventing incompatible uses by designing roads for all trip purposes, including for more vulnerable users such as cyclists and pedestrians. As such, the 2045 MTP/SCS is not expected to negatively impact the design of transportation facilities. Rather, investments are expected to incentivize design improvements to make roadways safer. Therefore, the potential of the 2045 MTP/SCS to substantially increase hazards due to geometric design features or incompatible land uses would be less than significant.

Incompatible Uses

The 2045 MTP/SCS would not adversely impact the compatible use of transportation facilities. Rather, investments are expected to incentivize design improvements to make roadways safer. The SCS does not create new agricultural uses or other similar uses that would result in increased incompatible vehicle uses on roadways in the region, such as slow-moving farm equipment. In addition, specific transportation projects under the 2045 MTP/SCS would be subject to and follow the allowable uses established by the State or the local jurisdiction with authority over the project. Therefore, the potential of the 2045 MTP/SCS to substantially increase hazards due to incompatible uses would be less than significant.

Mitigation Measures

None required.

Threshold 4: Result in inadequate emergency access

Impact T-4 THE 2045 MTP/SCS WOULD NOT RESULT IN INADEQUATE EMERGENCY VEHICLE ACCESS.
IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Emergency Vehicle Access

The 2045 MTP/SCS would entail upgrades and improvements to existing transportation infrastructure as well as “focused growth” in existing communities along the existing transportation network encouraging more dense development in developed areas. The Highway 1 infrastructure upgrades included in the 2045 MTP/SCS would be anticipated to benefit emergency vehicle access by protecting areas from potential hazards, including flooding or erosion, that could otherwise impair emergency access using transportation facilities. In addition, all transportation projects under the proposed Plan would comply with State, regional, and local regulations regarding the provision of at least two emergency vehicle access points during both operation and construction.

Construction activities could temporarily impair emergency access points used for emergency vehicle access. However, standard construction procedures for development of a construction management plan would address these conditions and would require provision of alternative emergency vehicle access points. Specifically, per Caltrans permitting requirements, a traffic control plan would be required that adheres to the standards set forth in the California Manual of Uniform Traffic Control Devices. In addition, while implementation of 2045 MTP/SCS land use development pattern and transportation projects could temporarily impede emergency access at project locations during construction periods, construction projects would conform to State, regional, and local regulations requiring maintenance of emergency access during construction. Therefore, the impact of the 2045 MTP/SCS on emergency access would be less than significant.

Emergency Vehicle Requirements

Transportation infrastructure plays a key role in providing access to destinations during emergencies. These systems must be able to accommodate emergency response vehicles, personnel, and equipment. In widespread disasters, the AMBAG area’s roads and other transportation networks can determine the success or failure of the region during the emergency and in the recovery. The 2045 MTP/SCS would entail upgrades and improvements to existing transportation infrastructure as well as “focused growth” in existing communities along the existing transportation network encouraging more dense development in developed areas. Dense development in existing developed areas is generally more efficient at serving the public for emergency response. This is often because existing developed areas tend to be well served with these facilities and also because the denser land use pattern better facilitates access to specific sites.

The actual design details of land use development projects and proposed transportation projects are not known, because the projects are in the early stages of planning. However, local jurisdictions have design standards for new and existing development and roadways to

ensure adequate passage of emergency vehicles. Standards include specifications related to clear width, effective turning radius and turnouts, curve radii on curving road segments, maximum road grade/slope, and minimum separating distance between intersections and driveways. Transportation projects would be subject to review with regard to emergency vehicle requirements by State and/or local jurisdictions with authority over the project as well as responsible emergency service agencies; thus, ensuring projects would be designed to meet all applicable emergency design standards. Therefore, the impacts of the 2045 MTP/SCS on emergency vehicle requirements would be less than significant.

Mitigation Measures

None required.

c. Specific 2045 MTP/SCS Project That May Result in Impacts

The analysis within this section discusses the potential transportation impacts associated with the transportation improvement projects included in the 2045 MTP/SCS. The projects within the 2045 MTP/SCS are evaluated herein in their entirety and are intended to improve circulation rather than cause adverse impacts. However, as described above, the 2045 MTP/SCS would increase baseline 2020 daily VMT per capita by approximately 0.6 mile in 2045. This effect has been found to be a significant and unavoidable impact, as described above. The RTDM data does not have the capability to distinguish which project or projects would specifically result in increased daily VMT per capita. However, any number of the 2045 MTP/SCS projects that expand roadway capacity or improve traffic flow and circulation could presumably increase VMT. Thus, there are no specific transportation projects that can be listed in this section related to the adverse impacts of increased daily VMT per capita in the AMBAG region.

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4.16 Tribal Cultural Resources

This section evaluates effects on tribal cultural resources related to implementation of the 2045 MTP/SCS.

4.16.1 Setting

Historically, the Costanoans, or coast people, Esselen, Salinan and the Northern Valley Yokuts occupied the AMBAG region. Monterey County was occupied by the Esselen in the west, the Costanoan in the north, and the Salinan to the south. The Costanoan occupied the northwestern portion of San Benito County; the Northern Valley Yokuts were in the southeastern part of the county, and the Salinan occupied the southwestern area of San Benito County. The Costanoan also occupied Santa Cruz County.

The Costanoans occupied permanent village sites in the valleys and maintained numerous hunting camps in the mountain terrain that they occupied seasonally. The subsistence for the Costanoan depended heavily on acorns and plant species during the various seasons (San Benito County 2015). Costanoan territory extended from the point where the San Joaquin and Sacramento rivers issue into the San Francisco Bay to Point Sur, 135 miles south of San Francisco, with the interior Coast Ranges likely constituting their inland boundary (Kroeber 1925). The Costanoan were semi-sedentary with a settlement system characterized by base camps of tule reed houses and seasonal specialized camps (Skowronek 1998). Subsistence was based on hunting, gathering, and fishing. Mussels and acorns were particularly important food resources (Kroeber 1925, Skowronek 1998).

The Costanoans, like most Native California groups, were organized according to politically independent land-holding groups referred to by anthropologists as tribelets. There were approximately 40 Costanoan tribelets. The basic Ohlone social unit was the family household of about 15 individuals, which was extended patrilineally (Broadbent 1972; Harrington 1933). Households grouped together to form villages and villages combined to form tribelets. Tribelets exchanged trade goods such as obsidian, shell beads and baskets; participated in ceremonial and religious activities together; intermarried; and could have extensive reciprocal obligations to one another involving resource collection.

Contact was established in the Costanoan territory with the founding of the Mission Nuestra Señora de la Soledad in 1791. The Costanoans suffered disenfranchisement and cultural collapse during the post-contact period and by 1810 the traditional lifeway of the Costanoans had virtually ceased. In 1971 descendants of the Costanoans united as a corporation, the Ohlone Indian tribe (San Benito County 2015).

The Esselen inhabited the upper Carmel Valley in the Santa Lucia Mountains between Point Sur and Lopez Point, with the inland boundary just east of the Salinas River. The Esselen occupied seasonal villages depending on resource availability (Breschini and Haversat 2001).

Salinan territory ranged from Carmel Valley south to Morro Bay. They occupied permanent villages. Salinan subsistence was centered on the gathering of acorns and other edible plants and the hunting of animals such as dove, quail, rabbit, and deer (Taylor 2013).

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Northern Valley Yokuts populations were concentrated along waterways in the San Joaquin River. Settlements were typically composed of single-family dwellings, sweathouses, and ceremonial structures. Subsistence revolved around water resources in the San Joaquin Valley, with a focus on salmon and acorns.

Tribal cultural resources that could be present within the AMBAG region include but are not limited to Native American burial sites, village or occupation sites, traditional resource gathering locations and natural landforms such as mountain peaks, ridge tops, or rivers. Such resources are present throughout the AMBAG region, including known and documented sites as well as undocumented sites that will be identified through cultural resources survey or ground disturbance.

4.16.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

The Department of Transportation Act

Passed in 1966, the Department of Transportation Act (49 United States Code 303, formerly 49 United States Code 1651(b)(2) and 49 United States Code 1653(f) includes Section 4(f), which states that the Federal Highway Administration and other U.S. Department of Transportation agencies cannot approve the use of land from public and private historical sites unless certain conditions apply. These conditions are the following: If there is no feasible and prudent avoidance alternative to the use of land, and if the action includes all possible planning to minimize harm to the property resulting from such use; or if the Federal Highway Administration determines the use of the property will have a *de minimis* impact.

Archaeological Resources Protection Act of 1979 (ARPA)

This regulation was enacted to protect archaeological resources and sites that are on public lands and tribal lands, to foster increased cooperation and exchange of information between government representatives, the professional archaeological community, and private individuals. Section 4 of the statute and Sections 16.5-16.12 of the uniform regulations describe the requirements that must be met before federal authorities can issue a permit to excavate or remove any archaeological resource on federal or tribal lands. The curation requirements of artifacts, other materials excavated or removed, and the records related to the artifacts and materials are described in Section 5 of the ARPA. This section also authorizes the Secretary of the Interior to issue regulations describing in more detail the requirements regarding these collections.

American Indian Religious Freedom Act of 1978

The American Indian Religious Freedom Act of 1978 (AIRFA) (42 U.S. Code Section 1996) pledges to protect and preserve the traditional religious rights of American Indians, Aleuts, Eskimos, and Native Hawaiians. It establishes a national policy that traditional Native American practices and beliefs, sites (and right of access to those sites), and the use of sacred

objects shall be protected and preserved. If a place of religious importance to American Indians could be affected by a federal undertaking, AIRFA promotes consultation with Indian religious practitioners, which could be coordinated with Section 106 consultation. Amendments to Section 106 of the NHPA in 1992 strengthened the interface between AIRFA and the NHPA by clarifying the following: (1) properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization could be determined to be eligible for inclusion in the NRHP; and (2) in carrying out its responsibilities under Section 106, a federal agency shall consult with any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to properties described under (1).

Archeological Resources Protection Act of 1979

The Archeological Resources Protection Act of 1979 (ARPA) (43 CFR Section 7) establishes uniform definitions, standards, and procedures to be followed by all federal land managers in providing protection for archaeological resources located on public lands and Native American lands. Under ARPA, additional requirements could apply to agency action if federal or Indian lands are involved. ARPA (1) prohibits unauthorized excavation on federal and Indian lands, (2) establishes standards for permissible excavation, (3) prescribes civil and criminal penalties, (4) requires agencies to identify archeological sites, and (5) encourages cooperation between federal agencies and private individuals.

Native American Graves Protection and Repatriation Act of 1990

The intent of the Native American Graves Protection and Repatriation Act of 1990 (25 U.S. Code Section 3001) is to identify Native American affiliation or lineal descent and ensure the rightful disposition, or repatriation, of Native American human remains, funerary objects, sacred objects, and items of cultural patrimony that are in federal possession or control. The regulations implementing the requirements of Native American Graves Protection and Repatriation Act relating to the inadvertent discovery of human remains and objects of cultural patrimony of Native American origin on federal or tribal lands are described in 43 CFR Section 10.4.

b. State Laws, Regulations, and Policies

Assembly Bill 52

California Assembly Bill 52 of 2014 (AB 52) expanded CEQA by defining a new resource category, “tribal cultural resources.” AB 52 establishes that “A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment” (PRC Section 21084.2). It further states that the lead agency avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3). PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources:

1. Sites, features, places, cultural landscapes, sacred places and objects with cultural value to a California Native American tribe” and meets either of the following criteria: Listed or

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eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)

2. A cultural resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. AB 52 requires that lead agencies “begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project.” Native American tribes to be included in the formal consultation process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

Public Resources Code Section 21080.3

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 Section 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 EIR, negative declaration, or mitigated negative declaration. PRC Section 21080.3.2 states:

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

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

- (1) Avoiding and preserving the resources in place, including, but not limited to, planning and constructing to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria

- (2) Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
 - (A) protecting the cultural character and integrity of the resource
 - (B) protecting the traditional use of the resource
 - (C) protecting the confidentiality of the resource
- (3) Establishing permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places
- (4) Protecting the resource

4.16.3 Impact Analysis

a. Methodology and Significance Thresholds

In accordance with the requirements of AB 52, AMBAG conducted AB 52 consultation for the 2045 MTP/RTP, which consisted of written communication with the Esselen Tribe of Monterey County, Chairperson Tom Little Bear Nason and Sue Morley, Cultural Resources Consultant for the Esselen Tribe of Monterey County. Copies of these letters are included in Appendix F. An emailed response to the letter was received on August 13, 2020 asking for a printed copy of the map, which was mailed on August 26, 2020. On August 6, 2021, AMBAG contacted Mr. Nason of the Esselen Tribe of Monterey County via email to enquire about a meeting to discuss the environmental analysis. No response was received. On October 13, 2021, AMBAG sent Mr. Nason of the Esselen Tribe of Monterey County a letter indicating that AB 52 consultation has concluded.

Appendix G of the *State CEQA Guidelines* identifies the following criteria for determining whether a project's impacts would have a significant impact to tribal cultural resources:

1. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is one of the following:
 - a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).
 - b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

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b. Project Impacts and Mitigation Measures

The following section describes tribal cultural resource impacts associated with the transportation improvements and future land use scenario included in the 2045 MTP/SCS. Due to the programmatic nature of the 2045 MTP/SCS, a precise, project level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2045 MTP/SCS could result in the impacts as described in the following section.

Threshold 1: Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)

Threshold 2: Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1

Impact TCR-1 IMPLEMENTATION OF PROPOSED TRANSPORTATION IMPROVEMENTS AND FUTURE PROJECTS INCLUDED IN THE LAND USE SCENARIO ENVISIONED IN THE 2045 MTP/SCS WOULD CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A TRIBAL CULTURAL RESOURCE. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

As stated above, AB 52 consultation did not result in the identification of any tribal cultural resources. However, it is possible that Native American burial sites, village or occupation sites, traditional resource gathering locations, and natural landforms of importance to the Esselen peoples could exist in the AMBAG planning area. Thus, tribal cultural resources could be encountered during implementation of the transportation improvement projects listed in the 2045 MTP/SCS and the land use scenario envisioned by the 2045 MTP/SCS. Effects on tribal cultural resources depend highly on the individual project site conditions and the characteristics of the proposed project. Impacts may include damage or destruction of the tribal cultural resources. Adherence to the requirements of AB 52 would encourage tribal consultation with local California Native American tribes and require the identification of project specific substantial adverse effects on tribal cultural resources and appropriate project specific mitigation measures. If the implementing agency determines that a specific transportation or land use project could cause a substantial adverse change in the significance of a tribal cultural resource, the impact would be significant.

Mitigation Measures

Tor transportation projects under their jurisdiction, TAMC, SBtCOG, and SCCRTC shall, and transportation project sponsor agencies can and should, implement the following mitigation

developed for the 2045 MTP/SCS program where applicable for transportation projects that result in impacts to tribal cultural resources, and where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

TCR-1 Tribal Cultural Resources Impact Minimization

Implementing agencies shall, or can and should, comply with AB 52, which may require formal tribal consultation. If the implementing agency determines that a project may cause a substantial adverse change to a tribal cultural resource, they shall, or can and should, implement mitigation measures identified in the consultation process required under PRC Section 21080.3.2, or shall, or can and should, implement the following measures where feasible to avoid or minimize the project specific significant adverse impacts:

- Avoidance and preservation of the resources in place, including, but not limited to planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
- Treating the resource with culturally appropriate dignity considering the tribal cultural values and meaning of the resource, including, but not limited to, the following:
 - Protecting the cultural character and integrity of the resource
 - Protecting the traditional use of the resource
 - Protecting the confidentiality of the resource
 - Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places
- Native American monitoring by the appropriate tribe for all projects in areas identified as sensitive for potential tribal cultural resources and/or in the vicinity (within 100 feet) of known tribal cultural resources
- If potential tribal cultural resources are encountered during ground-disturbing activities; work in the immediate area must halt and the appropriate tribal representative(s), the implementing agency, and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the find and determine the proper course of action

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

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Significance After Mitigation

Mitigation Measure TCR-1 would require AB 52 compliance and would result in necessary mitigation being identified through tribal consultation to avoid impacts to tribal cultural resources. These measures would protect the resource's character, traditional use, and confidentiality. With such protection, implementation of the above measure would reduce impacts to tribal cultural resources. However, it cannot be guaranteed that all future project-level impacts can be mitigated and as such, impacts would be significant and unavoidable.

c. Specific MTP/SCS Projects that May Result in Impacts

All 2045 MTP/SCS transportation projects that require construction may result in impacts as discussed above; and therefore, are not specifically identified in table format. All 2045 MTP/SCS transportation projects are referenced in Appendix B. Additional analysis and AB 52 consultation with local tribes would be needed as the individual projects are implemented to determine the project specific impact. The mitigation measure provided above and potentially others requested by tribal representatives on a project by project basis would apply to these specific projects.

4.17 Wildfire

This section analyzes impacts related to wildfires in the AMBAG planning region.

4.17.1 Setting

In California, responsibility for wildfire prevention and suppression is shared by federal, State, and local agencies. Federal agencies are responsible for lands in Federal Responsibility Areas. California has identified State Responsibility Areas (SRA) where the state has financial responsibility for wildland fire protection and prevention; incorporated cities and federal ownership are not included. These are managed by the California Department of Forestry and Fire Protection (CAL FIRE). All incorporated areas and other unincorporated lands are classified as Local Responsibility Areas (LRA).

a. Wildfire Behavior and Controlling Factors

Human influence on wildfire includes direct influences, such as the ignition and suppression of fires, and indirect influence through climate change, the alteration of native vegetation, fire suppression, and development patterns. Human-induced wildfire ignitions can change fire regime characteristics in two ways: (1) changing the distribution and density of ignitions and (2) changing the seasonality of burning activity. Human-induced ignition sources include escapes from debris and brush-clearing fires, electrical equipment malfunctions, campfires, smoking, fire play (e.g., fireworks), vehicles, and arson. Consequently, areas near human development more frequently experience fires than very remote or urban areas.

Once a fire is started, the spread and behavior of a fire become a function of fuel characteristics, terrain, and weather conditions. People have intervened deliberately and dramatically in the natural fire regime through fire suppression and, more recently, actions that affect fuel connectivity. Historically, fire suppression was used to prevent and limit wildfires. Over time, this land management practice (combined with forest regrowth after extensive logging in the late 19th century) has led to a buildup of forest fuels and an increase in the occurrence and threat of large, severe fires. Contemporary fire management practices include fuel management activities that are intended to reduce the intensity and severity of wildfires. Reducing fuels through mechanical treatments and prescribed fire have been found to be effective at reducing fire frequency, fire severity, and annual area burned when applied at the landscape scale over an extended period of time.

Wildfire activity is closely related to temperature and drought conditions, and in recent decades, increasing drought frequency and warming temperatures have resulted in increased fire activity and the largest, most destructive, and deadliest wildfires in California history. 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 2018), if greenhouse gas emissions continue to rise, the frequency of extreme wildfires burning over 25,000 acres

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could increase by 50 percent by 2100, and the average area burned Statewide could increase by 77 percent by the end of the century.

b. California Wildfire Hazards

While all of California is subject to some degree of wildfire hazard, specific features make certain areas more hazardous. CAL FIRE is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors (Public Resources Code [PRC] 4201-4204 and California Government Code 51175-89). Factors that increase an area's susceptibility to fire hazards include slope, vegetation type and condition and atmospheric conditions. CAL FIRE has identified two types of wildfire risk areas: 1) wildland areas that may contain substantial forest fire risks and hazards and 2) very high fire hazard severity zones (VHFHSZ). Each risk area carries with it code requirements to reduce the potential risk of wildfires. Under State regulations, areas in very high FHSZs must comply with specific building and vegetation management requirements intended to reduce property damage and loss of life in these areas.

Development that has spread into less densely populated, often hilly areas has increased the number of people living in heavily vegetated regions that are prone to wildfire. The area where wildlands meet urban development is referred to as the wildland-urban interface (WUI) and is subject to urban wildfire. In recent years some of the deadliest and most extensive fires in the history of the state have ignited in the WUI and spread to suburban and even urban areas (CAL FIRE 2021). In August 2020, a lightning storm ignited the River Fire in Monterey County and the CZU Lightning Complex Fire in San Mateo and Santa Cruz counties, spreading rapidly toward nearby populations, requiring extensive evacuation orders. The River Fire burned approximately 40,090 acres and destroyed 30 structures, with another 13 damaged (CAL FIRE 2020a). The 2020 CZU Lightning Complex Fire burned approximately 86,510 acres across San Mateo County and Santa Cruz County; destroying 490 structures and damaging 140 others and resulted in one fatality (CAL FIRE 2020b). Two days later, on August 18, 2020, the Dolan Fire ignited in Monterey County and went on to burn approximately 124,924 acres, destroy 14 structures, and injure 19 people (CAL FIRE 2020c). These fires are an example of the major losses that can result from a fire in the WUI.

Throughout the AMBAG region, there is a full range of conditions and fire hazards as indicated in the applicable Fire Hazard Severity Zone Maps for the region.

Monterey County

According to the Monterey County Fire Hazard Severity Zones in SRA (CAL FIRE 2007a), nearly the entire county within CAL FIRE responsibility is mapped as either high or very high fire hazard. Monterey County has very high FHSZs in the northwestern and coastal areas, throughout the central county, the northeastern half of the county, and areas along the southern county boundary, adjacent to San Luis Obispo County (CAL FIRE 2007; Figure 4.17-2 and Figure 4.17-3). The rest of the Monterey County SRA is high or moderate FHSZ, throughout the central and eastern parts of the county. The urbanized areas in and around cities are mostly LRAs, including the U.S. 101 corridor, although portions of the highway pass

through high and moderate FHSZs south of San Lucas and to the area just north of Nacimiento, and including the unincorporated community of Wunpost.

San Benito County

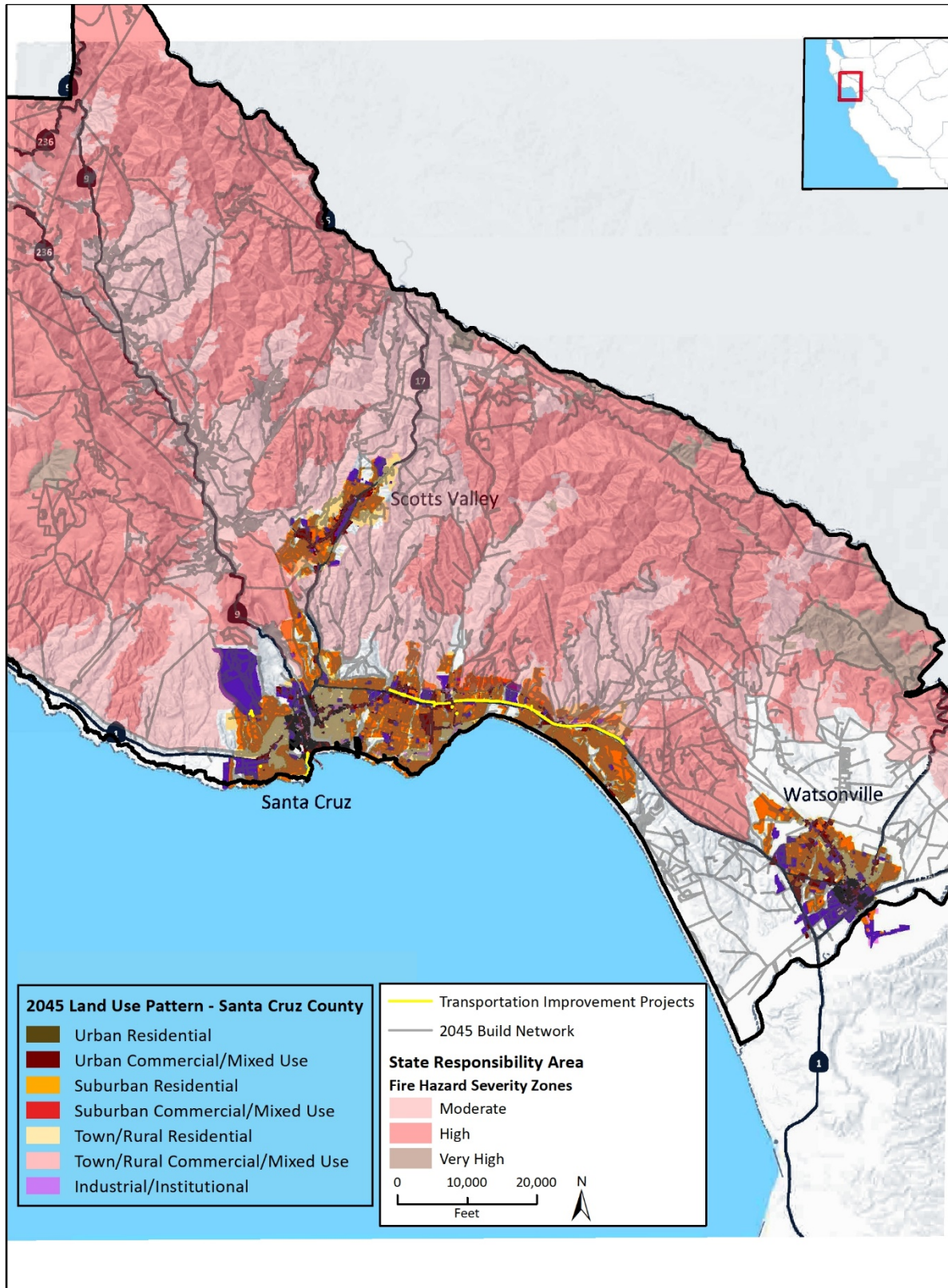
The western edge of San Benito County is very high FHSZ, with much of the county in the SRA. Throughout the county high and moderate FHSZs encompass very high FHSZs, with some of the county being in a Federal Responsibility Area, as they fall within nation forest lands. This is the case along the extent of Highway 25 except where it traverses the city of Hollister and the northern portion of San Benito County. The areas around Highway 156 are largely LRAs, except where the highway leaves San Benito County at the northern border with Santa Clara County, and from west of San Juan Bautista to where it joins U.S. 101. For the short extent of U.S. 101 in San Benito County, most of which is in or adjacent to a very high or high FHSZ (Figure 4.17-4).

Santa Cruz County

According to the CAL FIRE “Fire Hazard Severity Zones” in SRA mapping, most of Santa Cruz County is in an SRA, with the urbanized areas being LRAs (CAL FIRE 2007). The very high FHSZs are along the eastern county boundary with Santa Clara County, in the mountainous areas, and in the area between Highway 1 and Highway 9 west of Ben Lomond and east of Swanton. The rest of the SRA is designated a high FHSZ, with pockets of moderate FHSZ at the lower elevations (Figure 4.17-1).

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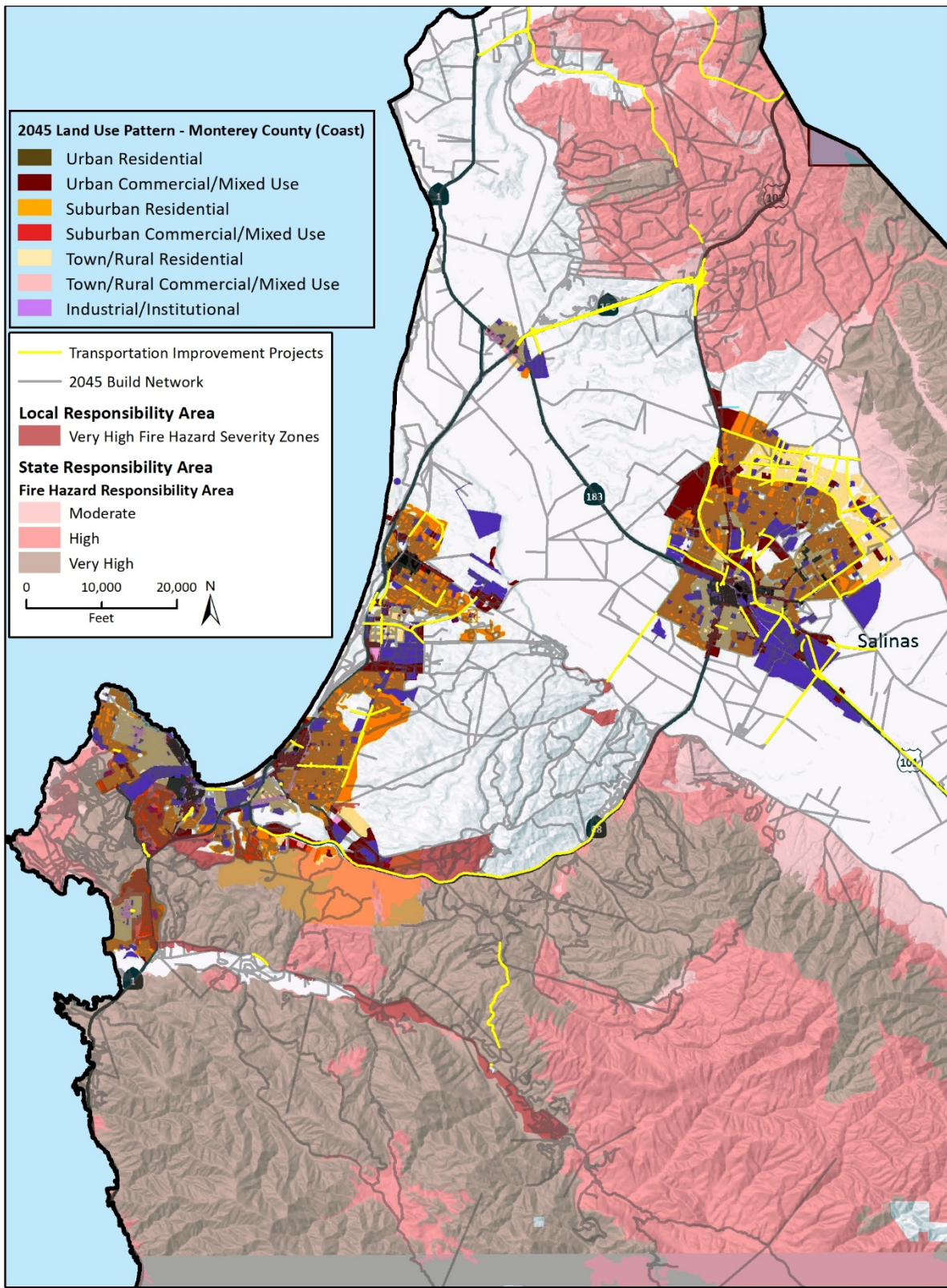
Figure 4.17-1 Santa Cruz County Fire Hazard Severity Zones



Basemap provided by AMBAG © 2021.

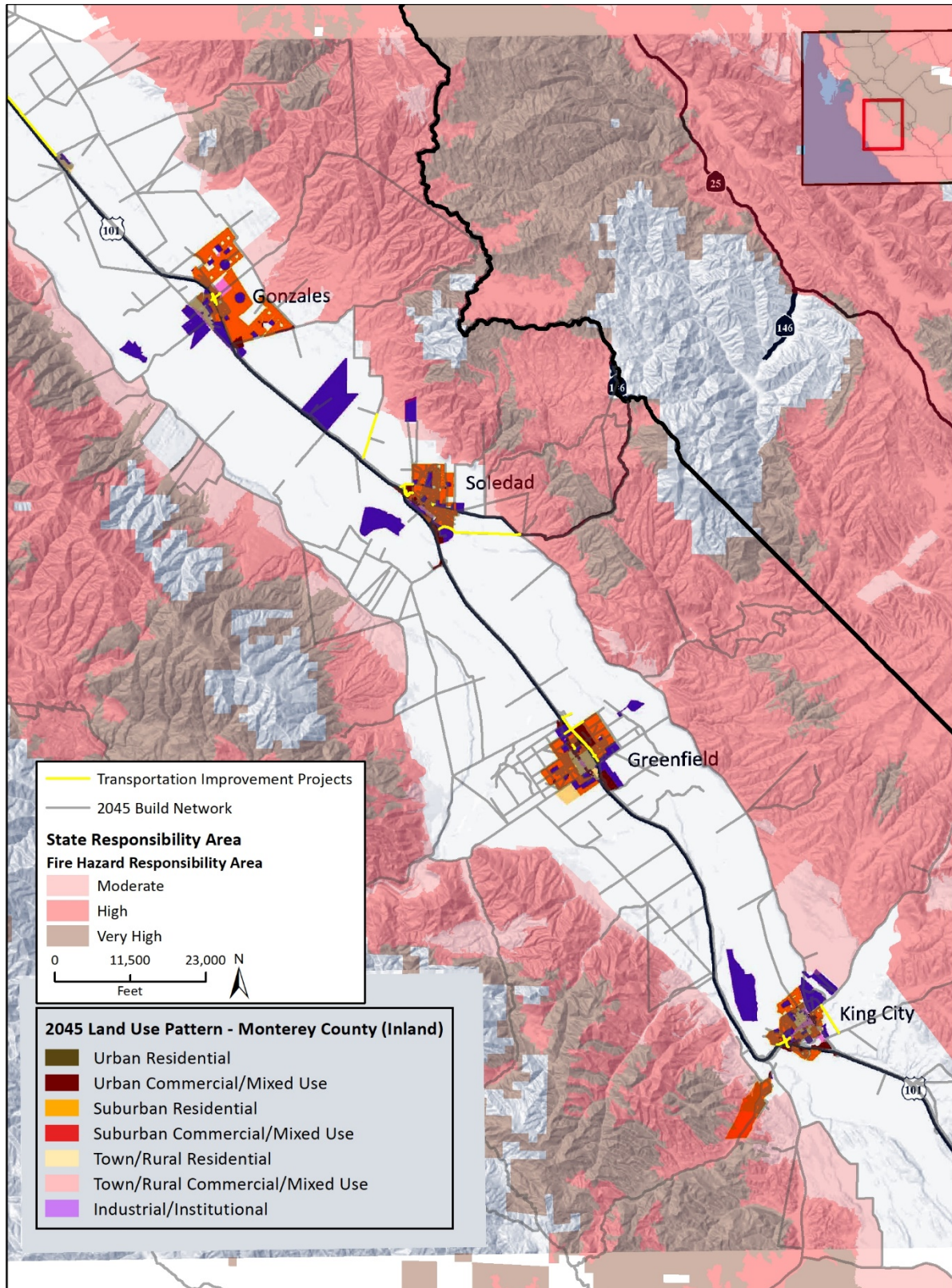
Fig 4.17-4 Fire Hazard Severity Zones Santa Cruz County

Figure 4.17-2 Northern Monterey County Fire Hazard Severity Zones



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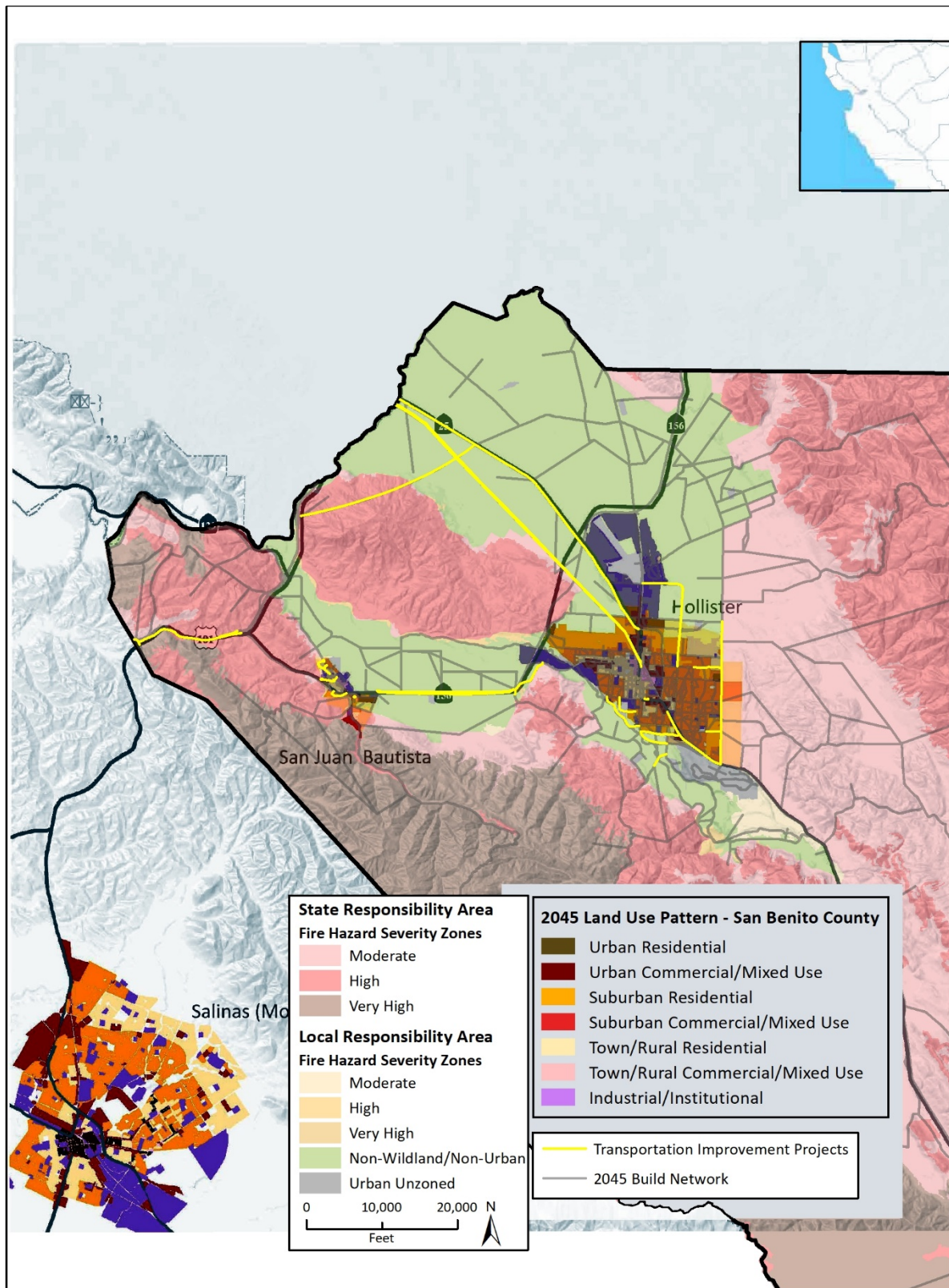
Figure 4.17-3 Southern Monterey County Fire Hazard Severity Zones



Basemap provided by AMBAG © 2021.

Fig 4.17-2 Fire Hazard Severity Zones Monterey County South

Figure 4.17-4 San Benito County Fire Hazard Severity Zones



Base map provided by AMBAG © 2017.

Fig 4.17-3 Fire Hazard Severity Zones San Benito County

4.17.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

International Fire Code

The International Fire Code (IFC), created by the International Code Council, is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The IFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The IFC and the International Building Code use a hazard classification system to determine what protective measures are required for fire and life safety. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the IFC employs a permit system based on hazard classification. The IFC is updated every three years and is the basis for the California Fire Code (CFC) (also updated triennially). Local jurisdictions, including AMBAG region cities and counties, then adopt the CFC, in some cases with local amendments.

Federal Disaster Mitigation Act

The Disaster Mitigation Act of 2000 provided a new set of mitigation plan requirements that encourage state and local jurisdictions to coordinate disaster mitigation planning and implementation. States are encouraged to complete a “Standard” or an “Enhanced” Natural Mitigation Plan. “Enhanced” plans demonstrate increased coordination of mitigation activities at the state level and, if completed and approved, increase the amount of funding through the Hazard Mitigation Grant Program. The State of California Multi-Hazard Mitigation Plan (SHMP) complies with this act.

National Fire Plan

The U.S. Department of the Interior’s National Fire Plan is intended to ensure an appropriate federal response to severe wildland fires, reduce fire impacts on rural communities, and ensure sufficient firefighting capacity in the future. The Rural Fire Assistance program is funded to enhance the fire protection capabilities of rural fire districts and safe and effective fire suppression in the wildland/urban interface. The program promotes close coordination among local, state, tribal, and federal firefighting resources by conducting training, equipment purchase, and prevention activities on a cost-shared basis.

b. State Laws, Regulations, and Policies

2019 Strategic Plan for California

The 2019 Strategic Plan prepared by CAL FIRE and the California Natural Resources Agency 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.

In addition to the 2019 Strategic Plan for California, individual CAL FIRE units develop fire plans, which are major strategic documents that establish a set of tools for each CAL FIRE unit for its local area. Updated annually, unit fire plans identify wildfire protection areas, initial attack success, assets and infrastructure at risk, pre-fire management strategies, and accountability within their unit's geographical boundaries. The unit fire plan identifies strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work locally. The plans include contributions from local collaborators and stakeholders and are aligned with other plans for the area.

California Building Code (2019)

Chapter 7A of the California Building Code (California Code of Regulations, Title 24, Part 2) includes specific requirements related to exterior wildfire exposure. These requirements establish minimum standards to protect buildings located in Fire Hazard Severity Zone within SRAs and Wildland-Urban Interface Fire Areas. This code includes provisions for ignition-resistant construction standards for new buildings.

California Fire Code

The 2019 California Fire Code (California Code of Regulations, Title 24, Part 9) establishes the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare for the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. The provisions of this code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of buildings or structures or any appurtenances connected or attached to such building structures throughout California.

Wildland-Urban Interface Building Standards

On September 20, 2007, the Building Standards Commission approved the Office of the State Fire Marshal emergency regulations amending the California Code of Regulations, Title 24, Part 2, known as the California Building Code (CBC). These codes include provisions for ignition-resistant construction standards in the WUI.

California Emergency Services Act

The California Emergency Services Act of 2008 merged the duties, powers, purposes, and responsibilities of OES and the Governor's Office of Homeland Security into a new cabinet-level agency, the California Emergency Management Agency (Cal EMA). In 2013, the Governor merged the California Emergency Management Agency with the Office of Public Safety Communications and renamed the organization the California Governor's Office of Emergency Services (Cal OES). CAL OES is responsible for overseeing and coordinating

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emergency preparedness, response, recovery, and homeland security activities within the California. Section 8687.7 of the California Disaster Assistance Act required the development of a Standard Emergency Management System (SEMS) program, for managing multiagency and multijurisdictional responses to emergencies in California. The Cal OES Emergency Management Systems Unit is a multi-agency group charged with methodical review, evaluation, and approval of needed improvements to SEMS. State agencies are required to use SEMS and local government entities must use SEMS in order to be eligible for any reimbursement of response-related costs under the State's disaster assistance programs.

Cal OES serves as the lead State agency for emergency management and coordinates the State response to major emergencies in support of local government. SEMS provides the mechanism by which local governments request assistance from Cal OES, and Cal OES maintains oversight of the State's mutual aid system.

State of California Emergency Plan

The Cal OES Emergency Plan outlines a state-level strategy to support local government efforts during a large-scale emergency. In accordance with the California Emergency Services Act, the State Emergency Plan describes methods for carrying out emergency operations, mutual aid processes, emergency services of governmental agencies, resource mobilization, emergency public information, and continuity of government (Cal OES 2017).

California Multi-Hazard Mitigation Plan

The California Office of Emergency Services prepares the State Hazard Mitigation Plan (SHMP), which identifies hazard risks and includes a vulnerability analysis and a hazard mitigation strategy (Cal OES 2018). The SHMP is required under the Disaster Mitigation Act of 2000 for the State to receive federal funding. The Disaster Mitigation Act of 2000 requires a State mitigation plan as a condition of disaster assistance.

The SHMP represents the state's primary hazard mitigation guidance document - providing an updated analysis of the state's historical and current hazards, hazard mitigation goals and objectives, and hazard mitigation strategies and actions. The plan represents the state's overall commitment to supporting a comprehensive mitigation strategy to reduce or eliminate potential risks and impacts of disasters in order to promote faster recovery after disasters and, overall, a more resilient state. State Hazard Mitigation Plans are required to meet the Elements outlined in FEMA's State Mitigation Plan Review Guide (revised March 2015, effective March 2016).

OES is responsible for the development and maintenance of the State's plan for hazard mitigation. The State's multi-hazard mitigation plan was last approved by the Federal Emergency Management Agency (FEMA) as an Enhanced State Mitigation Plan in 2018. The plan is designed to reduce the effects of disasters caused by natural, technological, accidental, and adversarial/human-caused hazards. The SHMP sets the mitigation priorities, strategies, and actions for the state. The plan also describes how risk assessment and mitigation strategy information is coordinated and linked from local mitigation plans into the

SHMP, and provides a resource for local planners of risk information that may affect their planning area. The State of California is required to review and revise its mitigation plan and resubmit for FEMA approval at least every five years to ensure continued funding eligibility for certain federal grant programs.

Senate Bill 1241 (Kehoe) of 2012

Senate Bill 1241 (Chapter 311, Statutes of 2012) requires cities and counties to address fire risk in SRAs and VHFHSZs in the safety element of their general plans. It also requires cities and counties to make certain findings regarding available fire protection and suppression services before approving a tentative subdivision map or parcel map. Assembly Bill 3074 (Friedman) of 2020

Assembly Bill 3074 (Chapter 259, Statutes of 2020) imposes additional fuel reduction requirements on a person who owns, leases, controls, operates, maintains or builds an occupied dwelling or structure in, upon, or adjoining wild lands within a very high fire hazard severity zone.

SRA Fire Safe Regulations

The State Responsibility Area (SRA) Fire Safe Regulations CCR Title 14, Division 1.5, Section 1270 et seq. establishes CAL FIRE's basic wildland fire protection standards for new development and is applicable in all SRAs in California—areas where CAL FIRE is responsible for wildfire protection.

c. Local Laws, Regulations, and Policies

City and County General Plans

Local planning policies related to wildfire hazards are established in each jurisdiction's general plan, generally in the Safety Element or equivalent chapter. For emergency services, some of the relevant policies include coordinating with other agencies responsible for planning medical facilities to meet the health care needs of residents in the region, retaining hospitals, evaluating medical facility proposals, providing emergency response services, and participating in mutual-aid agreements. Example county General Plan goals and policies are provided below.

Santa Cruz County

Santa Cruz County General Plan, Public Safety Element

Among other topics, the Santa Cruz County General Plan Safety Element seeks to protect the county from the effects of wildfire (Santa Cruz County 2020). Policy 6.5.4 addresses development of lands outside the Urban Services Line that include mitigable critical fire hazard areas (fuel clearance), adequate water supply or storage to support firefighting, and a requirement that buildings be located outside any designated Critical Fire Hazard Area, a

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County-designated area. Policy 6.5.7 requires certification of adequate fire protection prior to any building permit approval.

City of Santa Cruz General Plan, Hazards, Safety, and Noise Element

The City of Santa Cruz General Plan Hazards, Safety, and Noise contains goals and policies designed to protect residents and structures from the direct effects of wildfire hazards (HZ1.5) and the secondary effects of smoke that affect air quality (HZ.2, City of Santa Cruz 2012). Furthermore, the element contains goals, policies, and programs aimed at increasing emergency preparedness and response (HZ.1).

Monterey County

Monterey County General Plan, Safety Element

Goal S-4 in the Monterey County General Plan Safety Element seeks to minimize risks from fire, including policies that support educating citizens, maintaining a GIS layer that shows WUI risks and that is updated periodically (Monterey County 2010). Policy S-4.9 addresses the construction and maintenance of county roadways in accord with the County Code or with the California Fire Code.

City of Monterey General Plan, Safety Element

Similarly, the City of Monterey General Plan Safety Element contains goals, policies, and programs aimed at minimizing loss of life and property from fire, such as Policy d.2, which calls for effective emergency access to all developments, and Program d.2.4, which requires fire-retardant roofing and access to steep lots, brush clearance and using non-flammable vegetation in landscape plans. support of standards and programs that reduce fire hazards (City of Monterey 2005).

San Benito County

San Benito County General Plan, Health and Safety Element

Goals and policies in the San Benito County General Plan Health and Safety Element seeks to minimize risk and ensure high levels of protection throughout the county. These include policies that address emergency preparedness (HS-1.4, HS-1.6), restrict development in high-risk areas (HS-1.14), all the policies under Goal HS-4 that address fire safety (San Benito County 2015a).

City of Hollister General Plan, Health and Safety Element

The Hollister General Plan also contains objectives, policies, and implementation measures intending to incorporate applicable fire safety standards into new development and to manage vegetation to reduce fire hazards, such as HS1.1, HS1.2, and HS2.3 through 2.6 (City of Hollister 2007).

Furthermore, Senate Bill 1241 requires that housing element updates made after 2014 include revisions to address the risk of fire in SRAs and very-high FHSZs. These revisions must account for specific considerations, including the provisions outlined in “Fire Hazard Planning” (CAL FIRE 2018)

Local Hazard Mitigation Plans

Local jurisdictions develop, adopt, and update local hazard mitigation plans (LHMP) to establish guiding principles for reducing hazard risk, as well as specific mitigation actions to eliminate or reduce identified vulnerabilities. Santa Cruz County (Santa Cruz County 2021), Monterey County (Monterey County 2016), and San Benito County (San Benito County 2015b) all have adopted LHMPs to reduce or eliminate long-term risk to people and property from natural hazards and their effects in the AMBAG region. This includes the unincorporated county, the cities within those counties, and various utility and park districts. Where federal lands neighbor those under local jurisdictions, cooperative agreements are in place that facilitate planning and emergency response. The plans include goals and policies to reduce the fire severity and intensity in the region through wildfire prevention, fuels management, and maintenance of evacuation routes. LHMPs are required to be updated every five years.

4.17.3 Impact Analysis

a. Methodology and Significance Thresholds

Appendix G of the *State CEQA Guidelines* identifies the following criteria for determining whether a project’s impacts would have a significant impact on wildfire:

1. If located in or near state responsibility areas or lands classified as VHFHSZ, would the project:
 - a. 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
 - b. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment
 - c. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes
 - d. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires

The methodology used for the following evaluation is based on a review of CAL FIRE’s fire hazard severity zone maps and responsibility areas regarding wildfire conditions in the AMBAG region to determine the potential for implementation of the 2045 MTP/SCS to result in increased wildfire risks. This includes city and county planning documents. This program

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level analysis is based on an overall understanding of the key fire safety concerns that could result from implementation of the 2045 MTP/SCS. The evaluation of wildfire impacts reasonably assumes that the construction and development under the 2045 MTP/SCS would adhere to the latest federal, State, and local regulations, and conform to the latest required standards in the industry, as appropriate for individual projects.

Potential impacts associated with the proposed circulation and emergency access routes for the 2045 MTP/SCS are discussed in Section 4.15, *Transportation*. Impacts associated with impairment of emergency response and evacuation plans and are not discussed further in this section.

b. Project Impacts and Mitigation Measures

The following section describes wildfire impacts associated with the transportation projects and land use scenario included in the 2045 MTP/SCS. Due to the programmatic nature of the 2045 MTP/SCS, a precise, project level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2045 MTP/SCS could result in the impacts as described in the following section.

Threshold 1: If located in or near state responsibility areas or lands classified as VHFHSZs:

- a) 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
- b) require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment
- c) expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes
- d) expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires

Impact W-1 **PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE 2045 MTP/SCS WOULD BE LOCATED IN OR NEAR AN SRA OR VERY HIGH FIRE HAZARD SEVERITY ZONE, AND SIGNIFICANT RISKS OF LOSS, INJURY, OR DEATH FROM WILDFIRES WOULD OCCUR. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

Wildland Fire

As shown in Figure 4.17-1 through Figure 4.17-4, CAL FIRE has mapped much of the AMBAG planning area, including Santa Cruz, Monterey, and San Benito counties as being in SRAs

and/or VHFHSZs. The land use scenario envisioned by the 2045 MTP/SCS concentrates the forecasted population and employment growth in urban areas and corridors of the counties, such as incorporated cities, unincorporated towns, and major roadways, where the risk of wildfire is less than in more rural, forested, or mountainous areas where fuels are abundant and emergency response access is restricted. However, some outlying development would still occur, and as evidenced by the 2018 Camp Fire, the 2017 Tubbs Fire in Sonoma and Napa counties, and 2017 Thomas Fire in Ventura and Santa Barbara counties, urban areas are also susceptible to wildfire, despite the lower degree of typical wildfire fuels.

2045 MTP/SCS transportation improvements, including active transportation (e.g., bicycle facilities), roadway improvements, transportation demand management, and transit improvements, would not involve developing residential uses that would include occupants. While some transportation projects may include office or maintenance structures, occupation would be temporary and would not be situated in very high FHSZs. However, not all transportation projects in the 2045 MTP/SCS would occur in urbanized areas, and some projects would inevitably be in areas with an increased risk of wildfires. While transportation projects associated with the 2045 MTP/SCS would improve mobility in the AMBAG region, which could facilitate an expedited evacuation or escape during a wildfire, urban and outlying areas are still at risk from wildfire.

In addition, other construction activities for transportation and land use projects involving the use of vehicles and heavy machinery could result in the ignition of a wildfire. During construction, heavy equipment and passenger vehicles driving on vegetated areas prior to clearing and grading could increase the risk of fire. Heated mufflers, explosives used during site preparation or line spicing, and improper disposal of cigarettes could potentially ignite surrounding vegetation. The use of heavy equipment, such as bulldozers and graders, has the potential to accidentally ignite a fire from sparks created when equipment blades strike rocks or metal objects. If noticed by the equipment operator or other project specific personnel, small ignitions can easily be suppressed by the construction equipment and/or on-site fire watch personnel. A fire could also be started by project personnel improperly disposing of burning cigarettes in areas covered with wildland vegetation and within 50 feet of combustible material storage.

Moreover, if the introduction of invasive, non-native plants is not controlled during construction, a project site could progressively become dominated by non-native plants which tend to increase the frequency and severity of wildfires. Based on recent scientific evidence, it is likely that anthropogenic climate change will continue to chronically enhance the potential for western U.S. forest fire activity when fuels are not limiting. As discussed further in Section 4.8, *Greenhouse Gas Emissions/Climate Change*, increasingly difficult drought conditions and extreme weather events will continue to raise wildfire risk within the AMBAG region.

New construction would be subject to the latest California Fire Code, which contains safety measures to minimize the threat from wildfires, including ignition-resistant construction with exterior walls of noncombustible or ignition resistant material from the surface of the ground to the roof system and sealing any gaps around doors, windows, eaves, and vents to prevent

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intrusion by flame or embers. Title 14 of the California Code of Regulations sets forth the minimum development standards for emergency access, fuel modification, setback, signage, and water supply, which help prevent loss of structures or life by reducing wildfire hazards. The codes and regulations would reduce the risk of loss, injury, or death from wildfire for new development envisioned by the 2045 MTP/SCS, but not entirely.

Land use development envisioned in the 2045 MTP/SCS that would be located within or less than two miles¹ from an SRA or very high FHSZs would cause significant wildfire impacts because existing codes and regulations cannot fully prevent wildfires from damaging structures or populations. These projects would increase the exposure of transportation infrastructure to risk of loss or damage from wildfire. Additionally, fire related impacts may extend far beyond the fire footprint as damage to homes, infrastructure, and ecosystems, and diminished air and water quality could all occur. People residing in new residential development could be exposed to smoke and air pollution from wildfires regardless of their location within urbanized areas or the WUI.

However, requirements to adhere to the local hazard mitigation plan, as well as the local general plan policies and programs aimed at reducing the risk of wildfires through land use compatibility, training, sustainable development, brush management, public outreach, and service standards for fire departments would reduce the risk of wildfire for these projects. But even with implementation of these policies and measures, it is not possible to prevent the projects implementing the MTP/SCS from exposing people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. Therefore, impacts would be significant.

Exacerbated Fire Risks

Although there are limited instances where the proposed land use pattern and planned transportation investments of the 2045 MTP/SCS may result in growth in or near wildfire prone areas, substantial wildfire-related impacts could still occur. Fire risks are still present despite the limited regional growth within an SRA or Wildland-Urban Interface (WUI) area, and adherence to CBC standards. They include specific standards for construction materials and methods for new buildings located in Fire Hazard Severity Zones within SRAs, Local Agency Very-High Fire Hazard Severity Zones, or WUI Fire Areas mapped by CAL FIRE or the local enforcing agency. These regulations have been prepared and adopted for the purpose of establishing minimum wildfire protection standards in conjunction with building, construction, and development in SRA. Title 14 sets forth the minimum development standards for emergency access, fuel modification, setback, signage, and water supply, which are intended to result in development that avoids or minimizes the hazards associated with development including associated infrastructure to roads, fuel breaks, emergency water sources, power lines or other utilities in wildfire-prone areas. Because the 2045 MTP/SCS plans for the construction and maintenance of associated infrastructure and envisions land development within and near these areas, and due to the unpredictable nature of wildfires

¹ For the purpose of this analysis, two miles is considered "near" an SRA or very high FHSZ.

in California, the 2045 MTP/SCS could exacerbate wildlife risk associated with those activities. Impacts would remain significant.

Global climate change will pose an increasing threat to wildland areas and nearby urban environments. The potential for slope failure and landslides can be exacerbated in these regions in the aftermath of a wildfire, even with adherence to the above cited regulations. Hillsides can become denuded of vegetation and become unstable, increasing the potential for landslide risks and associated hazards downslope from such landslides. Potential impacts related to slope stability and landslides are discussed in Section 4.7, *Geology and Soils*. As discussed therein, stable slope conditions vary depending on location of the project within the region and the potential for substantial landslides was found to be higher in the Santa Lucia Mountain Range and across inland Santa Cruz County, as well as near Hollister, Tres Pinos, Paicines, and other areas with steep topography. Some proposed transportation improvements and land use projects envisioned by the 2045 MTP/SCS would be located in areas with steep slopes, and would exacerbate risks to people or structures as a result of post-fire slope instability. This impact would be significant.

This same issue applies to runoff and flooding potential after a wildfire with denuded and unstable hillsides. Potential impacts related to flooding, runoff, and drainage are discussed in Section 4.10, *Hydrology and Water Quality*. Projects would be required to comply with existing design guidelines and local requirements for post-development peak stormwater flows and Best Management Practices to avoid and/or minimize flooding impacts and impacts to on-site and off-site drainage. Even through adherence to these regulations, impacts associated with exposure of people or structures to downslope or downstream flooding or landslides as a result of runoff due to post-fire slope instability would be significant.

Land use and transportation projects more than two miles from an SRA VHFHSZs would not require mitigation. However, Mitigation Measure WF-1 is provided below to further reduce the risk of wildfire for developments located in proximity to SRA and VHFHSZs.

Mitigation Measure

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the 2045 MTP/SCS program where applicable for transportation projects that result in impacts related to wildland fire, and where feasible and necessary based on project and site specific considerations. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2045 MTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

W-1 Wildfire Risk Reduction

If an individual transportation or land use project included in the 2045 MTP/SCS is within or less than two miles from an SRA or VHFHSZ, the implementing agency shall require appropriate mitigation to reduce the risk. Examples of mitigation to reduce risk of loss, injury or death from wildlife include, but are not limited to:

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- Enforce defensible space regulations to keep overgrown and unmanaged vegetation, accumulations of trash and other flammable material away from structures.
- Provide public education about wildfire risk, fire prevention measures, and safety procedures and practices to allow for safe evacuation and/or options to shelter-in-place.
- Require adherence to the local hazard mitigation plan, as well as the local general plan policies and programs aimed at reducing the risk of wildfires through land use compatibility, training, sustainable development, brush management, public outreach, and service standards for fire departments.
- Ensure sufficient emergency water supply
- Encourage the use of fire-resistant vegetation native to Santa Cruz, Monterey, and San Benito counties and/or the local microclimate of the project site and discourage the use of fire-prone species especially non-native, invasive species.
- Require a fire safety plan be submitted to and approved by the local fire protection agency. The fire safety plan shall include all the fire safety features incorporated into the project and the schedule for implementation of the features. The local fire protection agency may require changes to the plan or may reject the plan if it does not adequately address fire hazards associated with the project as a whole or the individual phase of the project.
- Prohibit certain project construction activities with potential to ignite wildfires during red-flag warnings issued by the National Weather Service for the project site location. Example activities that should be prohibited during red-flag warnings include welding and grinding outside of enclosed buildings.
- Require fire extinguishers to be on site during construction of projects. Fire extinguishers shall be maintained to function according to manufacturer specifications. Construction personnel shall receive training on the proper methods of using a fire extinguisher.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction and operation, as applicable.

Significance After Mitigation

With implementation of this mitigation, the risk of loss of structures and transportation infrastructure and the risk of injury or death due to wildfires would be reduced. These measures would make structures and transportation infrastructure more fire resistant and less vulnerable to loss in the event of a wildfire. These measures would also reduce the potential for construction of 2045 MTP/SCS projects to inadvertently ignite a wildfire. However, it is possible that mitigation measures will not prevent a significant risk of wildfires or fully protect people and structures from the risks of wildfires in all cases. Thus, this impact

would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

c. Specific 2045 MTP/SCS Projects That May Result in Impacts

Table 4.17-1 identifies examples of transportation projects with the potential to cause or contribute to direct or indirect impacts to wildfire such as those discussed above. These projects are representative and were selected based on their potential scope and likelihood to result in the impacts identified above. Additional specific analysis will be required as individual projects are implemented to determine the project specific magnitude of impact. Mitigation discussed above would apply to these specific projects.

Table 4.17-1 2045 MTP/SCS Projects that May Result in Increased Wildfire Risk

AMBAG ID	Project	Location	Potential Impact
MON-CT022-CT	SR 156 – Corridor Widening Project	Monterey	W-1
MON-CT030-SL	U.S. 101 – Salinas Corridor	Monterey	W-1
MON-CT031-CT	U.S. 101 – South County Frontage Roads	Monterey	W-1
MON-SOL014-SO	SR 146 Bypass (Pinnacles Parkway)	Monterey	W-1
SB-CT-A01	SR 156 Widening – San Juan Bautista to Union Road	San Benito	W-1
SB-CT-A17	Airline Highway Widening/SR 25 Widening: Sunset Drive to Fairview Road	San Benito	W-1
SB-CT-A44	Highway 25 Widening, Phase 1	San Benito	W-1
SB-CT-A02	Highway 156/Fairview Road Intersection Improvements	San Benito	W-1
SC-CO-P88-USC	Either Way Lane Bridge Replacement Project	Santa Cruz	W-1
SC-CO-P91-USC	Larkspur Bridge at San Lorenzo River	Santa Cruz	W-1
SC-CT-P48-CT	Hwy 17 Wildlife Habitat Connectivity	Santa Cruz	W-1

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5 MTP Consistency with Other Plans Analysis

The purpose of the 2045 MTP/SCS is to coordinate and facilitate the planning and programming of transportation facilities and services within the AMBAG region through 2045 in accordance with State and Federal regulations.

The Policy Element of the 2045 MTP/SCS states that AMBAG's goals are to ensure that the transportation system planned for the AMBAG region accomplishes the following:

- **Access and Mobility.** Provide convenient, accessible, and reliable travel options while maximizing productivity for all people and goods in the region
- **Economic Vitality.** Raise the region's standard of living by enhancing the performance of the transportation system
- **Environment.** Promote environmental sustainability and protect the natural environment
- **Healthy Communities.** Protect the health of our residents; foster efficient development patterns that optimize travel, housing and employment choices and encourage active transportation
- **Social Equity.** Provide an equitable level of transportation services to all segments of the population
- **System Preservation and Safety.** Preserve and ensure a sustainable and safe regional transportation system

In preparation for drafting the 2045 MTP/SCS, AMBAG considered the above referenced strategy areas and goals while collaborating with local jurisdictions to identify a common set of land use PlaceTypes. AMBAG developed the PlaceTypes to provide a common definition of density and character across the 21 jurisdictions in the region. These PlaceType designations are consistent with the general plans for each of the 18 cities and three counties that comprise the AMBAG region and generally match the respective land use policies and objectives contained therein. The PlaceTypes were then used to establish an existing as well as a future land use pattern. The future land use pattern concentrates more growth in commercial and mixed use corridors with high-quality transit rather than in rural areas.

Each of the 18 city and three county general plans include circulation elements that are coordinated and consistent with the respective land use diagrams, goals, policies, and programs. The circulation elements lay out goals, policies and programs describing a broad range of transportation modes and opportunities that, among other things, support the land use goals, policies and programs. The circulation diagrams for the city and county general plans are consistent with the land use diagrams that depict the respective city and county future land use patterns. These circulation diagrams describe the transportation infrastructure requirements necessary to facilitate those growth patterns. The 2045 MTP/SCS is built on and consistent with facilities and infrastructure laid out in the circulation elements of the city and county general plans.

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This EIR qualitatively evaluates local and subregional planning efforts and potential impacts of the 2045 MTP/SCS related to inconsistency with policies pertaining to infrastructure improvements intended to improve the regional transportation system. Specific projects included in the 2045 MTP/SCS that may support and encourage land use changes were identified early in the planning process and were assessed for consistency with the following:

- General Plan policies and development controls that require voter approval (such as those set by initiative);
- General Plan policies and development controls that are based on joint-powers agreements (such as regional open space reserves, buffers between communities, or urban service boundaries and urban limit lines); or
- General Plan policies and development controls reflecting infrastructure or potentially significant environmental constraints.

Local jurisdictions are responsible for adopting land use policies as part of their general and community plans and implementing them through local ordinance. AMBAG has no direct control over local land use planning. Nevertheless, AMBAG makes regional efforts to assist local jurisdictions in aligning local land use policies with the proposed 2045 MTP/SCS. Such programs could assist local jurisdictions via technical support and funding. Examples include but are not limited to: creating economic development forums to address needed increases in jobs; funding transit, bicycle and pedestrian infrastructure that supports the increased use of alternative modes; and working with local jurisdictions to update their general plans with policies that are consistent with the 2045 MTP/SCS where appropriate.

As demonstrated in this section, per *State CEQA Guidelines* Section 15125(d), the 2045 MTP/SCS has no inconsistencies with applicable general plans, regional plans, and specific plans. Consistency with regional plans such as the “AMBAG Blueprint” and General Plans prepared for Monterey, San Benito and Santa Cruz counties is addressed herein. Consistency with transportation planning documents, including regional and local bicycle and pedestrian plans, transit plans and roadway improvement plans are addressed in Section 4.15, *Transportation*, and summarized in this section. In addition, Local Coastal Programs (LCP) consistency is discussed for Monterey and Santa Cruz counties as projects may occur within the coastal zone. As an element of the General Plan, LCPs are intended to demonstrate consistency with the Coastal Act for the portion of the statewide coastal zone located within Monterey County. Each LCP includes both a land use plan (LUP) and an implementation plan (IP) that together distill statewide Coastal Act coastal resource policies to the local level.

No Natural Community Conservation Plans or Habitat Conservation Plans pertain to project areas defined in the 2045 MTP/SCS, as described in Section 4.4, *Biological Resources*.

5.1 Monterey County General Plan/Local Coastal Program

The Monterey County 2010 General Plan (Monterey County 2010) includes policies that address the existing and future land use for rural areas within the County that are used predominately for agricultural purposes as well as developed areas within incorporated cities

and unincorporated communities. One of the land use planning challenges within Monterey County is that higher quality farmlands are in the valleys where cities have also been established. On the other hand, foothills lining the valleys have unique scenic and environmental characteristics. These conditions require goals and policy statements that strike a balance between providing for growth and development while preserving significant resources countywide.

Monterey County's Land Use Element establishes policies to designate the general distribution and intensity of residential, commercial, industrial, agricultural, public facilities and open space uses. The primary vision of this Element is to create a general framework that encourages growth within or near developed/developing areas to reduce impacts to agricultural production and natural resources, and to avoid impacting public services that currently serve these areas. Areas where development is encouraged include incorporated cities and designated community areas where existing services are available. These areas are subject to additional planning by each incorporated city and within community plans/specific plans adopted by the Board of Supervisors for unincorporated community areas.

The proposed 2045 MTP/SCS encourages urban infill and transit oriented development (TOD) development and the development of transportation infrastructure that would support these uses, as well the overall efficiency of the existing regional transportation network. Projects identified by TAMC that comprise the RTP for Monterey County emphasize improving existing highway infrastructure, transit services, and related measures that focus potential impacts within existing urbanized areas. This is consistent with Land Use Element policies that avoid or reduce impacts to agricultural production, natural resources, and existing public services within rural areas of Monterey County.

The coastal zone within Monterey County is divided into four LUPs: North County, Del Monte Forest, Carmel Area, and Big Sur Coast. Projects in the 2045 MTP/SCS that support or facilitate coastal access while meeting other provides of the Coastal Act would be consistent with the Monterey County LCP. The four LUPs are integrated into the 1982 County General Plan and remain in effect. Preparation of the 2045 MTP/SCS has been closely coordinated and is consistent with the 1982 and 2010 County General Plans and is therefore consistent with the LUPs. Projects occurring within the Monterey County coastal zone would be evaluated for consistency with the LUPs as part of the project specific environmental review (Monterey County, 1982 and 2010).

5.2 San Benito County General Plan

The San Benito County Board of Supervisors adopted the 2035 General Plan in 2015. The San Benito County 2035 General Plan (San Benito County 2015) includes policy statements that address sustainability, environmental protection and economic growth and diversification. The plan was developed in part by input received by stakeholders including residents, businesses, land owners and decision-makers. The Vision and Guiding Principles chapter of the General Plan update identify the following objectives as they relate to land use and community character:

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1. Encourage new growth in existing unincorporated communities, new communities, or clustered developments to preserve prime farmland and rangeland, protect natural habitats, and reduce the financial, social and environmental impacts of urban sprawl.
2. Ensure that there is a mix of residential, commercial, employment, park, open space, school and public land uses to create a sense of place by supporting condensed, pedestrian accessible and transit oriented development.
3. Promote higher residential densities in existing unincorporated urban areas and new communities while encouraging mixed use development.
4. Ensure new development complements and preserves the unique character and beauty of San Benito County.
5. Establish defined boundaries to separate cities and unincorporated communities from prime agricultural land and important natural resources, using such features as agriculture buffers, greenbelts, open space and parks.

The 2045 MTP/SCS is consistent with the land use objectives as it encourages urban infill, high residential densities, and TOD within existing urban centers. Because the 2045 MTP/SCS is focused in part on projects within existing urban infill areas, it supports policies within the San Benito County General Plan that are intended to preserve prime farmland and rangeland; protect natural habitats; and provide a mix of urban development areas that support pedestrian accessibility and transit oriented development.

5.3 Santa Cruz County General Plan/Local Coastal Plan

The Santa Cruz County General Plan/Local Coastal Plan (Santa Cruz County 1994) was adopted by the City of Santa Cruz Planning and Community Development Department in 1994. The Plan goals, policies, programs, resource and constraint mapping, along with county implementing ordinances, determine the location and pace of urban development. The intent is to regulate the quality of development and control the pace of development consistent with the availability of public services while protecting the natural resources that maintain and enhance the county's unique environment.

A basic land use policy of the Santa Cruz County General Plan focuses on separating urban and rural areas. This Urban/Rural Boundary – which is defined in the General Plan according to the Urban Services Line (USL) and the Rural Services Line (RSL) established around each incorporated city – encourages new development within existing urban areas while preserving agricultural land and natural resources in the rural areas.

Within Santa Cruz County, there are existing enclaves in rural areas which are developed at urban densities. Generally, these enclave boundaries are defined by an RSL. Some urban services are available within these areas. County policy allows the provision of full urban services, including public sanitation facilities, to serve these communities. In areas outside of the USL or beyond the RSL established for these enclave areas, the "Rural Density Matrix" provides for parcel-specific determination of allowable densities based on the availability of

services, environmental and site specific constraints and resource protection factors required by the Growth Management System and the General Plan and LCP Land Use Plan.

Because commute patterns can have a negative impact on traffic, energy consumption, air quality and related environmental resources, the relationship between jobs and housing is an important topic in the Santa Cruz County General Plan. The General Plan recognizes the various types of commute behavior and includes policies to provide adequate housing opportunities and encourage an employment base that supports a diversity of income levels.

The 2045 MTP/SCS is generally consistent with the broad goals and policies of the Santa Cruz County General Plan/LCP in that both clearly support focused development within existing urban boundaries to preserve natural habitats and agricultural resources. Further, both documents address the importance of maintaining a job/housing balance by, in part, diversifying transportation options as well as supporting efforts focused on reducing regional traffic congestion. The Santa Cruz County LCP is integrated into the County General Plan. Preparation of the 2045 MTP/SCS has been closely coordinated and is consistent with the County General Plan and is therefore consistent with the LCP.

5.4 AMBAG Region Transit Agency Plans

5.4.1 Monterey-Salinas Transit Business Plan and Short Range Transit Plan

Last adopted in 2005, the *Business Plan and Short Range Transit Plan* is Monterey-Salinas Transit's (MST) primary planning document (MST 2005). The Plan describes the role of public transit in the community including ongoing and anticipated service needs throughout the existing service area as well as in new growth areas that will need transit service in the coming years.

The MST *Business Plan and Short Range Transit Plan* uses two separate systems for performance measurement: one for the Fixed-Route System, and the second for MST RIDES Paratransit. Performance measures for the Fixed-Route System look at various factors of ridership (total customer boardings, ridership per vehicle revenue hour and utilization of lines), service delivery (increased customer satisfaction, strengthen employee developments and satisfaction, enhance support by MST members and other stakeholder, and operate safely, effectively and efficiently), and special services (the MST Trolley—Waterfront Visitors Express, Laguna Seca lines, supplemental service for community events, limited charter service for special events, and ADA compliance and accommodations). Performance measures for MST RIDES Paratransit program uses an evaluation system of 20 performance measures to support the MST's mission statement, which focuses on "increase customer satisfaction" and "operate safely, effectively and efficiently." These 20 performance measures fall into categories of input (resources: operating expenses, employees), output (service produced: vehicle revenue hours, vehicle revenue miles), end product (service consumed: passengers, passenger revenue), efficiency (input vs. output), service effectiveness (output vs. end product), cost effectiveness (input vs. end product), service quality (miles/road call, accidents per 10,000 miles) and customer satisfaction (telephone and letter).

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As part of pandemic recovery efforts, MST is carrying out a Comprehensive Operational Analysis (COA) to redesign the bus network (MST 2020b). This is an opportunity to evaluate what goals MST should be serving, how the MST services are performing, and where and how often the bus should run. The pandemic decreased ridership approximately 64 percent from 2019 to 2020. The COA will decide what changes need to be made based on ridership vs. coverage and needs-based vs. population-based. MST staff and consultants will be responsible for developing the network plan, with the benefit of public input to guide them.

Access to transit service and overall performance of the transit systems would improve with implementation of the 2045 MTP/SCS and related projects. The 2045 MTP/SCS includes projects in Monterey County that would address transit operations, rehabilitation of existing facilities, improvements to Americans with Disabilities Act (ADA) service, and infrastructure and other benefits including replacement of existing buses and related equipment. Examples of specific projects within the 2045 MTP/SCS that would meet some of these needs include service expansions to Salinas (MON-MST008-MST, MON-MST011-MST), increased frequency of various transit lines (MON-MST018-MST), improvements of the Salinas ITC station (MON-SNS120-SL), and countywide support for ADA services (MON-TAMC012-TAMC). As discussed, the 2045 MTP/SCS contains the TAMC RTP, which was developed in consultation with MST. Thus, the 2045 MTP/SCS would be consistent with the current *Business Plan and Short Range Transit Plan* (MST 2005).

5.4.2 MST COVID-19 Recovery Plan

The MST COVID-19 Recovery Plan was adopted in September 2020 (MST 2020a). Due to the COVID-19 pandemic, this document was created to detail Monterey-Salinas Transit's efforts to assist in restoration, redevelopment and revitalization of the health, social, economic, natural, and environmental fabric of the AMBAG region. MST sustained a dramatic loss in ridership on its fixed route and public dial-a-ride services during the pandemic. At the lowest point, weekly passenger boardings fell by approximately 80 percent following Monterey County's March 18, 2020 Shelter-in-Place order. The recovery plan attempts to provide integrated perspective across the emergency response phases of Prevention, Protection, Mitigation, Response, and Recovery to achieve unity of effort and make the most effective use of limited resources.

As described in Section 4.15, *Transportation*, the 2045 MTP/SCS transit projects include increasing bus capacity and lanes such as along E. Alisal Street in the City of Salinas and increasing the frequency of some bus line services. The 2045 MTP/SCS projects also include bus maintenance and preventative maintenance, which would help ensure reliability of the MST bus fleet and minimize the potential for transit disruptions due to equipment failure. These types of projects and improvements would improve conditions for bus operations in the region. As such, the 2045 MTP/SCS would not conflict with the MST COVID-19 Recover Plan.

5.4.3 Santa Cruz METRO Short-Range Transit Plan

The Santa Cruz METRO *2013 Short-Range Transit Plan* update was adopted in May 2014. This update includes an assessment of the strengths and weaknesses of the existing service design for both fixed-route and ParaCruz services; a forecast of future financial and capital needs; and an updated marketing plan. Regarding existing service, the Plan notes that Santa Cruz METRO has an excellent route system with heavy ridership. Several recommendations are included that build upon the success of the current system and focus on the use of existing resources to simplify services. These include the following:

- Simplifying service frequencies between downtown Santa Cruz and UCSC;
- Improving speed for more riders in the Watsonville – Cabrillo corridor;
- Consolidating routes to simplify service in Santa Cruz and Mid-County; and
- Creating Transit Emphasis Corridors where service frequencies are at least every 15 minutes during peak times and capital enhancements can be prioritized.

The Santa Cruz METRO fixed route and ParaCruz each have their own measures for performance. For the 33 fixed-route bus lines, which includes four transit centers in the Santa Cruz area, measures tracked weekday and weekend services for the following: total annual ridership by route, averages for number of boardings, daily hours of revenue service, daily trips, daily vehicle miles, boardings per revenue hour, boardings per trip, boardings per mile and on-time performance. These factors are used to calculate productivity of the overall system. METRO ParaCruz tracks operating trends and performance indicators. Operating trends include ridership numbers, revenue hours, revenue miles. Performance indicators are measured by cost effectiveness (operating cost per passenger, farebox recovery ratio, average revenue per passenger, average subsidy per passenger) and service efficiency (passengers per revenue hour and passengers per revenue mile).

As shown in the performance measures developed for the 2045 MTP/SCS, access to transit service and overall performance of the transit systems would improve with implementation of the 2045 MTP/SCS and related projects. Specific projects within the 2045 MTP/SCS that would expand transit service include such projects as SC-MTD-P12-MTD and SC-MTD-P14-MTD, which expand Highway 17 service and local transit service, addressing recommendations made in the short-range plan to expand regional transit operations. Projects also include improved access to UCSC, including operation of the campus shuttle service and Night Owl (SC-UC-P74-UC), programs encouraging sustainable commutes to the campus (SC-UC-P63-UC, UCSC Vanpool Program; SC-UC-P69-UC, and the UCSC Commute Counseling Program; SC-UC-P70-UC, UCSC Commuter Incentive Programs). Based on these findings, the 2045 MTP/SCS would be consistent with the Santa Cruz METRO *2013 Short-Range Transit Plan* (METRO 2014).

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5.4.4 San Benito County Local Transportation Authority Short- and Long-Range Transit Plan

The San Benito County Local Transportation Authority (LTA) adopted *Future Horizons for San Benito County: Short- and Long-Range Transit Plan* in 2016 (LTA 2016). The 2016 Plan provides an evaluation of local fixed route service, intercounty service, and demand response services, as well as an alternatives analysis.

The vision for public transportation in San Benito County is characterized by:

1. Ridership growth;
2. Sustainable, sufficient funding;
3. Reliable, efficient, affordable transportation;
4. Multimodal, sustainable TOD;
5. Positive economic impact in the community; and
6. Healthy environment with improved air quality and reduced congestion.

The focus of the long-range portion of the Plan is to “establish goals and projects for transit growth which connects land use and transportation strategies. The LRTP shall also meet legal mandates for planning and programming set by SB 375.”

The San Benito LTA uses a Performance Measurement system to identify service issues or service needs, with data is collected in relation the LTA’s Mission, Vision, and the eight guiding principles. The Plan provides a detailed table organized by goal, objective, measure, service, proposed standard and actual performance. The objectives and their measures include:

- Safe Transit Service (miles between preventable accidents, miles between passenger injuries, on the job injuries, drug and alcohol testing program);
- Productive service (passengers per vehicle revenue hour, by service type);
- Reliable transit service (on-time performance, missed trips);
- Effective service (cost per passenger, by service type);
- Affordable service (fare increases);
- Increase use of transit (ridership growth, by type of service);
- Accessibility (frequency of service, coverage, service to key destinations, transfer wait time, new service ridership projections, special services for difficult to service populations);
- High customer satisfaction (ratings, complaints);
- Cost effective use of technology (cost/benefit/urgency analysis);
- Accountability and transparency (performance reporting, financial);
- Leadership with partners, businesses, employers and the community (contacts/meetings per year, community association membership and attendance, industry association membership and attendance, participation in community events);

- Accessibility (annual marketing plan, marketing cost per operating costs, public participation program);
- Staff and drivers project positive quality image (driver turnover rates, hours of sensitivity and customer service training per employee);
- Accurate transit information on a timely basis through multiple channels (onboard, signage and web updates);
- Cost effective service (cost per vehicle service hour, cost per vehicle service mile);
- Use of public funding efficiently (subsidy per passenger, farebox recovery);
- Budget (annual budget, maintain budget);
- Partnerships with cities and counties (as required)

As demonstrated in the performance measures developed for the 2045 MTP/SCS, access to transit service and overall performance of the transit systems would improve with implementation of the 2045 MTP/SCS and related projects. The 2045 MTP/SCS includes projects in San Benito County that would in part address needs identified in the short-range transit plan, such as greater connectivity throughout the region, with improved bus rapid transit and rail passenger service in key corridors to meet the need for service to and from Santa Cruz County (for jobs and activities in the cities of Watsonville and Santa Cruz, UC Santa Cruz and various recreation areas along the coastline), and meet the need for service into Monterey County (for destinations such as CSUMB, and the cities of Salinas and Monterey, and other areas served by Monterey-Salinas Transit). Based on these findings, the 2045 MTP/SCS would be considered consistent with the Short- and Long-Range Transit Plan (LTA 2016).

5.5 Local Agency Formation Commissions

Monterey, San Benito, and Santa Cruz counties each have a Local Agency Formation Commission (LAFCO). LAFCOs are independent countywide bodies created pursuant to State law that make decisions about the boundaries of and services provided by cities and special districts, as governed by the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (Government Code Section 56000 et seq.). Statutory purposes of LAFCOs are to encourage the orderly formation and development of local governments, preserve agricultural and open space lands, discourage urban sprawl, and ensure the efficient delivery of government services.

As regulatory agencies, LAFCOs may approve the formation of new cities and special districts, approve changes in boundaries (e.g., annexations, consolidations, mergers, dissolutions), and may allow cities or special districts to provide services outside their boundaries. LAFCOs establish and periodically update the spheres of influence of each city and district, and may initiate proposals to change boundaries based upon the Spheres of Influence or special studies. LAFCOs are also required to prepare Municipal Service Reviews (MSRs) for every city and special district in their jurisdiction that demonstrate the capacity of each organization to provide adequate facilities and services. The MSRs must then be updated every five years.

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LAFCOs implement the Cortese-Knox-Hertzberg Local Government Reorganization Act, CEQA, open meeting laws, the Revenue and Taxation Code and local policies and procedures.

The transportation projects and land use scenario comprising the 2045 MTP/SCS were developed in consultation with municipalities and other sponsoring agencies within Monterey, San Benito, and Santa Cruz counties, and were coordinated with city and county general plan land use diagrams. The city general plan land use diagrams identify the city spheres of influence (SOI) and confine proposed land uses within their SOIs. County general plan land use diagrams depict land use in unincorporated areas, some of which include areas within city SOIs that has not yet been annexed. County land use diagrams typically show agricultural or open space designations for these areas and presume that any new urban development will occur following annexation. The county general plans include policies that direct urban growth to within city SOIs. The 2045 MTP/SCS is therefore consistent with and supports city and county policy and programs related to existing and potential future SOIs that effect the location and pace of growth and development in the region, and is consistent with the respective city SOIs.

6 Other Statutory Considerations

This section discusses growth-inducing impacts, irreversible environmental impacts and significant and unavoidable impacts that would be caused by the proposed project.

6.1 Growth Inducing Impacts

Section 15126.2(e) of the *State CEQA Guidelines* requires a discussion of a proposed project's potential to induce growth. Specifically, an EIR must discuss the ways in which the proposed project could foster economic or population growth. Included in this category are projects that would remove obstacles to population growth. In addition, the EIR must discuss how the project may encourage and/or facilitate other activities that could significantly affect the environment. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

6.1.1 Employment, Household and Population Growth

According to the AMBAG 2022 Regional Growth Forecast, population in the AMBAG region is projected to grow from 774,729 in 2020 to 869,776 by 2045; an increase of approximately 13 percent. Employment within the region is projected to grow by approximately 36,544 jobs over the same period, an increase of approximately 17 percent. As discussed in Section 4.13, *Population and Housing*, the proposed projects implementing the 2045 MTP/SCS are designed and intended to accommodate projected growth up to the year 2045. The projects under the 2045 MTP/SCS would be phased to respond to growth as it occurs under adopted local general plans. As a result, the 2045 MTP/SCS would not directly induce growth beyond that projected by 2045 and anticipated in local general plans; rather, it is intended to accommodate growth in a way that will help meet objectives described in Chapter 4, *Sustainable Community Strategy (SCS)*, of the proposed MTP/SCS.

Employment, population, and household growth would occur within the AMBAG region regardless of whether the 2045 MTP/SCS is implemented. The land use scenario envisioned by the 2045 MTP/SCS would emphasize the development of infill and transit oriented development (TOD) projects within existing urbanized areas; and therefore, may redistribute growth patterns. The location of infill and TOD projects would generally be on properties that have been identified as vacant or underutilized within applicable local jurisdictions. Infill and TOD projects would not necessarily result in significant new population growth within these jurisdictions; rather the 2045 MTP/SCS would accommodate anticipated growth and concentrate it within existing urban cores instead of on the periphery of urban areas or within rural or semi-rural areas. Therefore, direct growth-inducing population growth impacts would be less than significant.

Implementation of the 2045 MTP/SCS would create short-term economic growth in the region via construction-related job opportunities. Implementation of the 2045 MTP/SCS would also generate additional employment opportunities for roadway, vehicle, and

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landscape maintenance and transportation facility clean-up. The employment increase may subsequently increase the demand for support services and utilities, which could generate secondary employment opportunities. This additional economic growth would likely raise the existing revenue base within the region. Although such growth may incrementally increase economic activity in the county, significant physical effects are not likely to result from economic growth generated by the 2045 MTP/SCS.

Furthermore, while development envisioned as part of the 2045 MTP/SCS could result in additional commerce, industry, recreation, public services, and infrastructure throughout the region, this economic activity would be consistent with the AMBAG 2022 Regional Growth Forecast and local general plans. Forecasted growth would be accommodated under the proposed 2045 MTP/SCS; therefore, the Plan would not be growth inducing, but rather it reflects the regulatory mandate to house the forecasted population.

The 2045 MTP/SCS was developed to integrate forecasted population increases, employment opportunities, and housing needs within the AMBAG area. Therefore, the 2045 MTP/SCS is designed to accommodate growth that would occur with or without its adoption; it is not designed, nor is it anticipated to, drive further population growth beyond the levels forecasted.

6.1.2 Removal of Obstacles to Growth

The majority of 2045 MTP/SCS transportation improvements are in existing urbanized areas such as Salinas, Monterey, Hollister, and Santa Cruz; however, projects are also located in rural or semi-rural areas. Such transportation improvements can remove an obstacle to growth by either creating additional roadway capacity (in the case of road widening projects) or providing new or better access to undeveloped areas (in the case of road extensions). New infrastructure may also serve to accelerate or shift planned growth or encourage and intensify unplanned growth. These transportation network improvements would remove obstacles to growth in some areas of the region, which would support additional housing, population, and economic growth, and therefore could be considered growth inducing.

However, the 2045 MTP/SCS transportation improvements are designed to fully support compact development approach outlined in Chapter 4, *Sustainable Community Strategy*, of the 2045 MTP/SCS and fully support the complementary transportation needs of the growing population. The SCS is designed to accommodate growth by encouraging infill and TOD development. The 2045 MTP/SCS transportation improvement projects are intended and designed to support the land use projects established in the SCS. Therefore, the 2045 MTP/SCS is consistent with projected and planned growth. Further, all transportation improvement projects are anticipated by the general plans of the applicable local jurisdictions, as all improvements have been coordinated with the applicable local jurisdiction.

6.2 Irreversible Effects

Section 15126.2(d) of the CEQA Guidelines requires a discussion of significant irreversible environmental changes that could result from implementation of a proposed project. These may include current or future uses of nonrenewable resources and secondary or growth-inducing impacts that commit future generations to similar uses. CEQA requires that irretrievable commitments of resources be evaluated to ensure that such current consumption is justified.

Many of the adverse impacts that could occur from implementation of the 2045 MTP/SCS are short-term in nature resulting primarily from construction of the proposed transportation projects, urban infill, and TOD projects. Typical construction-related impacts can involve the following issues: noise, air quality, aesthetics, and construction-related erosion and associated water quality impacts. In addition, though such materials would not be used in a wasteful manner, all construction activity would involve the use of non-renewable energy sources, potable water and building materials (see Section 4.6, *Energy*). The use of these resources during construction would increase demand and impact supplies across the AMBAG region.

Long-term irreversible environmental impacts are associated with increased asphalt or concrete paving and related direct and cumulative impacts to geology/soils, biological and cultural resources (historic resources); transportation; and hydrology/water quality, as discussed in their respective sections of this EIR. In addition, the 2045 MTP/SCS would result in an overall increase in the urbanized character of the region. This would increase demand for potable water, electricity, and other resources in urban areas. The supply versus demand for these resources is evaluated by service/utility providers; thus, impacts would be determined during project specific review and as part of the overall planning process addressing regional growth. Mitigation measures have been prescribed to minimize these impacts. However, in certain instances, as discussed in Section 6.3 below, impacts could remain significant with implementation of mitigation measures. Irreversible effects associated with the projected change in land use and transportation projects in the 2045 MTP/SCS would include those described below. The following issues are addressed in environmental resource sections of Section 4, as noted:

- Conversion of agricultural lands, habitat areas, or other undeveloped lands into developed land or transportation uses (see Section 4.2, *Agricultural and Forestry Resources*, and Section 4.4, *Biological Resources*)
- Degradation of ambient air quality through the increase of harmful particulate matter as a result of an increase in PM₁₀ and toxic air contaminant emissions (see Section 4.3, *Air Quality and Health Impacts/Risks*)
- Consumption of significant amounts of nonrenewable energy for construction and operation of new development, infrastructure, or transportation improvements (see Section 4.6, *Energy*, and Section 4.8, *Greenhouse Gas Emissions/Climate Change*)

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- Use of building materials, fossil fuels, and other resources for construction and operation of new development or transportation projects (see Section 4.8, *Greenhouse Gas Emissions/Climate Change*)
- GHG emissions would contribute to global climate change (see Section 4.8, *Greenhouse Gas Emissions/Climate Change*)

6.3 List of Significant and Unavoidable Impacts

Significant and unavoidable impacts are those that cannot be mitigated to a less than significant level. Section 4 of this EIR identifies significant and unavoidable impacts of the 2045 MTP/SCS. As described therein, many impacts identified as significant could be reduced to a less than significant level, but only with adoption of mitigation measures that are outside the control of AMBAG and that may not be feasible for every project. The following are the impacts identified as significant and unavoidable, listed by technical section and impact number.

- Impact AES-1: public views of scenic vistas and designated scenic corridors
- Impact AES-2: degradation of existing visual character
- Impact AES-3: create a new source of substantial light or glare
- Impact AG-1: conversion of Important Farmland to nonagricultural use
- Impact AQ-2: fugitive dust and ozone precursor emissions during construction
- Impact AQ-3: increased PM10 emissions compared to 2020 baseline conditions
- Impact AQ-4: increased VMT and particulate emissions
- Impact AQ-5: exposure of sensitive receptors to substantial hazardous air pollutant concentrations
- Impact BIO-1: substantial adverse impacts on special status plant and animal species
- Impact BIO-2: substantial adverse impacts on sensitive habitats, including federally protected wetlands
- Impact BIO-3: interference with wildlife movement
- Impact CR-1: disturbance of known or unknown historical resources
- Impact CR-2: disturbance of known and unknown archeological resources
- Impact GEO-5: disturbance of known and unknown paleontological resources
- Impact GHG-1: generate temporary short-term GHG emissions
- Impact GHG-4: conflict with the state's ability to achieve SB 32, EO S-3-05, and EO B-55-18 GHG reduction goals
- Impact HAZ-3: be located on a hazardous materials site
- Impact N-1: temporary noise and vibration level increases above applicable thresholds
- Impact N-2: exposure to excessive vibration levels during construction activities
- Impact N-3: exposure of existing and future sensitive receptors to significant mobile source noise levels

- Impact N-4: placement of sensitive receptors in areas with unacceptable noise levels
- Impact N-5: exposure of sensitive receptors and fragile buildings to excessive vibration levels
- Impact N-6: exposure of people residing or working within two miles of a public airport or public use airport to excessive noise levels
- Impact PSU-1: adverse physical impacts from new or expanded facilities
- Impact PSU-3: substantial physical deterioration of parks and recreational facilities
- Impact PSU-4: increased demand for new or expanded utilities facilities
- Impact PSU-5: increased solid waste generation beyond regional facility capacities
- Impact PSU-7: increased water demand potentially requiring new or expanded water supplies, entitlements, or facilities
- Impact T-2: increased daily VMT between the baseline 2020 conditions and 2045 conditions
- Impact TCR-1: substantial adverse change in the significance of a tribal cultural resource
- Impact W-1: exposure of people or structures to significant risks related to wildland fires and fire-related hazards

6.4 Cumulative Impacts

This section discusses the cumulative impacts of the 2045 MTP/SCS. CEQA Guidelines Section 15355 defines a cumulative impact as one in which two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or several separate projects. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

CEQA Guidelines Section 15130 describes the requirements for the discussion of cumulative impacts in an EIR. It states that an EIR will discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable. The discussion will reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as much detail as is provided for the impacts attributable to the project alone. In addition, the CEQA Guidelines allow for a project's contribution to be rendered less than cumulatively considerable with implementation of appropriate mitigation.

The geographic scope defines the geographic area within which a proposed project and related projects may contribute to a specific cumulative impact. The geographic scope of the cumulative impact analysis varies depending upon the specific environmental issue being analyzed. The geographic scope for each environmental issue analyzed in this EIR is identified in Table 6-2.

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CEQA Guidelines Section 15130(b) presents two possible approaches for analyzing cumulative impacts:

- A list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the agency; or
- A summary of projections contained in an adopted local, regional, or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the lead agency.

For the purposes of this cumulative analysis, the discussion identifies how impacts of the 2045 MTP/SCS could add to impacts of other regional-scale projects. The cumulative impact analysis area is the tri-County AMBAG region and the adjoining counties of San Mateo, Santa Clara, Merced, Fresno, Kings, Kern, and San Luis Obispo. The approach to cumulative analysis is described in detail in the following section.

6.4.1 Approach for Cumulative Analysis

CEQA defines cumulative impacts as “two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impacts.” Section 15130 of the *State CEQA Guidelines* requires that an EIR evaluate environmental impacts that are individually limited but cumulatively considerable. These impacts can result from the proposed project alone, or together with 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). A cumulative impact of concern under CEQA occurs when the net result of combined individual impacts compounds or increases other overall environmental impacts (*State CEQA Guidelines*, Section 15355). In other words, cumulative impacts can result from individually minor but collectively significant projects taking place over time. CEQA does not require an analysis of incremental effects that are not cumulatively considerable nor is there a requirement to discuss impacts which do not result in part from the project evaluated in the EIR.

a. Cumulative Impact Methodology

The 2045 MTP/SCS addresses cumulative conditions within the AMBAG region by design. The Plan area is comprised of 3.3 million acres and includes three counties and 18 cities. It integrates transportation investments with land use strategies for an entire region of the state that shares, or is connected by, common economic, social, and environmental characteristics. As such, the regional environmental analysis of the 2045 MTP/SCS presented

throughout this Draft EIR is essentially a cumulative analysis consistent with CEQA requirements. Furthermore, this Draft EIR contains detailed analysis of regional (cumulative) impacts, which are differentiated from localized impacts that may occur at the county level.

The geographic scope defines the geographic area within which a proposed project and related projects may contribute to a specific cumulative impact. The geographic scope of the cumulative impact analysis varies depending upon the specific environmental issue being analyzed. The geographic scope for each environmental issue analyzed in this EIR is identified in Table 6-1.

When evaluating cumulative impacts, CEQA allows the use of either a list of past, present, and probable future projects, including projects outside the control of the lead agency, or a summary of projections in an adopted planning document, or a combination of the two approaches. The cumulative analysis presented below primarily uses a projections-based approach, with additional consideration of specific large-scale projects consistent with a list approach [see *State CEQA Guidelines* Section 15130(B)(1)]. Under the projections-based approach, land use and growth projections for the region, which are the subject of analysis throughout this Draft EIR, are combined with the growth projections for the adjoining counties. Adjoining counties are listed as follows:

- a. **San Mateo County.** San Mateo County is located north of the Plan area, north of Santa Cruz County along the Pacific coast. San Mateo County encompasses a major portion of the San Francisco Peninsula, covering approximately 554 square miles, including 106 square miles of inland waters and San Francisco Bay tidal areas. The eastern (bayside) portion of the County is comprised of dense urban development, while the western (coast side) is largely undeveloped except for small rural centers (San Mateo County 1986).
- b. **Santa Clara County.** Santa Clara County is located northeast of the Plan area, east of Santa Cruz County and north of San Benito County. The County, which encompasses 1,300 square miles, is a major employment center for the region, providing more than 25 percent of all jobs in the Bay Area. The northern portion of the County is extensively urbanized, while the southern portion of the County is predominantly rural (Santa Clara County 1994).
- c. **Merced County.** Merced County is located east of the northern portion of the Plan area, east of San Benito County. Merced County encompasses 1,980 square miles, 98 percent of which is unincorporated and sparsely populated (Merced County 2013).
- d. **Fresno County.** Fresno County is located east of the Plan area, east of San Benito and Monterey counties. The County contains substantial amounts of agricultural land. However, the Fresno/Clovis metropolitan area is one of the most populous in the state with almost 500,000 residents (Fresno County 2000).
- e. **Kings County.** Kings County is located east of the Plan area, east of the southern portion of Monterey County. Kings County is a predominantly agricultural-based County, with 90.2 percent of all land devoted to agricultural uses, with population centered in the cities of Avenal, Corcoran, Hanford and Lemoore (Kings County 2010).

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- f. **Kern County.** Kern County is located southeast of the Plan area, southeast of the southeastern-most corner of Monterey County. Kern County is California's third largest county in land area, encompassing 8,202 square miles. The County includes 11 incorporated cities, with Bakersfield as the city with the largest population. The remainder of the County is generally characterized as rural (Kern County 2004).
- g. **San Luis Obispo County.** San Luis Obispo County is located south of the Plan area, south of Monterey County. The County is largely agricultural, with population concentrated in four regions: North County, North Coast, San Luis Obispo, and South County (San Luis Obispo County 2015).

As shown in Table 6-1, the population for the combined AMBAG region and adjoining counties is projected to increase from just under 6.2 million people in 2020 to approximately 7.1 million people by 2045.

Table 6-1 Population, Households and Employment Projections of Cumulative Impact Analysis Area, 2020-2045

Adjoining County	Acreage ¹	Population ² 2020	Population ² 2045	Households ² 2020	Households ² 2045	Jobs ² 2020	Jobs ² 2045
Fresno	3,816,320	1,030,895	1,238,725	307,900	377,700	375,500	440,500
Kern	5,210,240	925,623	1,136,321	270,300	327,500	295,900	362,200
Kings	890,240	154,441	181,087	44,100	55,300	46,000	55,300
Merced	1,234,560	286,794	369,750	80,600	103,800	78,400	90,100
San Luis Obispo	2,114,560	278,746	278,569	108,400	124,000	109,000	133,000
San Mateo	287,360	779,045	830,498	267,000	300,400	371,500	447,300
Santa Clara	826,240	1,967,525	2,226,862	645,300	744,500	1,050,700	1,278,400
AMBAG Region ³	3,273,600	774,729	869,776	243,863	276,730	406,280	442,824
Total	17,653,120	6,197,798	7,131,588	1,967,463	2,309,930	2,733,280	3,249,624

¹ Caltrans 2015

² Caltrans 2020

³ AMBAG 2021

As shown in Table 6-2, in the cumulative impact analysis area the AMBAG region comprises approximately 12.5 percent of the existing population, 12.4 percent of the existing number of households and 14.9 percent of the existing number of jobs and approximately 18.5 percent of the total acreage. By 2045, this proportion is expected to remain relatively similar (12.1 percent of the population, 12.0 percent of households and 13.6 percent of jobs). Thus, under both current and forecasted future conditions, the AMBAG region represents a relatively small portion of the growth in the cumulative analysis impact area.

Table 6-2 Cumulative Impact Analysis Geographic Scope

Resource Area	AMBAG Region	Adjacent Jurisdictions (San Mateo, Santa Clara, Merced, Fresno, Kings, Kern, and San Luis Obispo Counties)	State of California
Aesthetics and Visual Resources	X	X	
Agriculture and Forestry Resources	X	X	
Air Quality and Health Impacts/Risks	X	X	
Biological Resources	X	X	
Cultural Resources	X	X	
Energy	X	X	X
Geology and Soils	X	X	
Greenhouse Gas Emissions/Climate Change	X	X	X
Hazards and Hazardous Materials	X	X	
Hydrology, Water Quality, and Water Supply	X	X	
Land Use	X	X	
Noise	X	X	
Population and Housing	X	X	
Public Services, Recreation, and Utilities	X	X	
Transportation	X	X	
Tribal Cultural Resources	X	X	
Wildfire	X	X	

In addition to the projections described above for the cumulative impact analysis area, this analysis considers specific large-scale projects consistent with a list approach. These cumulative projects include colleges and universities with a population of over 10,000 for the ten-county area. Long-range development plans (LRDPs) for public colleges and universities undergo a separate projection of future growth that is not automatically accounted for in the RTP or General Plan processes. As such, they are considered projects for the purpose of this cumulative analysis. An example is additional development on the University of California (UC) Santa Cruz campus. The UC Santa Cruz 2021 Long Range Development Plan envisions the addition 8,500 students through 2040, which would bring total student enrollment to

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28,000. This would be a 43 percent increase in total student enrollment, which is currently approximately 19,500 students. The 2021 Long Range Development Plan also plans for corresponding increases in faculty and staff and physical space to accommodate this growth. The faculty and staff size would increase by 2,200 people, bring total employee number at UC Santa Cruz to 5,000 by 2040 (University of California Santa Cruz 2021). In addition to campus projects, cumulative projects would also include large military facilities, both inside and outside the AMBAG region, such as U.S. Army Garrison Presidio of Monterey, Fort Hunter Liggett, and Naval Air Station Lemoore. These projects are considered in combination with the projections for the ten-county area in this cumulative analysis.

6.4.2 Cumulative Impacts Analysis

a. Aesthetics and Visual Resources

Some types of impacts to aesthetic resources are localized and not cumulative in nature. For example, the creation of glare or shadows at one location is not worsened by glare or shadows created at another location. Rather these effects are independent and the determination as to whether they are adverse is specific to the project and location where they are created. Projects that block a view or affect the visual quality of a site also result in localized impacts. The impact occurs specific to a site or area and remains independent from another project elsewhere that may block a view or degrade the visual environment of a specific site. However, from some vantage points, such as mountain ridges or open valley floors, the viewshed can span for miles. Because development may be seen from distances or into the distance from some locations, the cumulative impact analysis area for aesthetics includes the AMBAG region and adjoining counties.

Impact AES-C-1 DEVELOPMENT IN THE CUMULATIVE IMPACT ANALYSIS AREA WOULD AFFECT NIGHT SKY LIGHTING AND DEGRADE EXISTING VISUAL CHARACTER. CUMULATIVE IMPACTS WOULD BE SIGNIFICANT AND THE CONTRIBUTION OF THE 2045 MTP/SCS WOULD BE CUMULATIVELY CONSIDERABLE.

Some types of aesthetic resources are localized and would not be cumulative in nature. For example, the creation of light, glare, or shadows at one location would not be worsened by light, glare, or shadows created at another location. Rather these effects are independent, and the determination as to whether they are adverse would be specific to the characteristics of the project and location of the site where they would occur. Projects envisioned as part of the 2045 MTP/SCS that would block surrounding views or modify or substantially alter existing scenic resources viewed from a scenic vista or state scenic highway would also result in localized impacts. The impact occurs specific to a site or area and remains independent from another project elsewhere that may block a view or degrade the visual environment of a specific site.

There are two types of aesthetic impact that may be additive in nature and thus cumulative: night sky lighting and overall changes in the visual environment as the result of increasing urbanization of large areas. Development in one area, such as a relatively large city adjoining agricultural land like Salinas, could increase and possibly expand over time and meet or

connect with development in an adjoining ex-urban area. This type of growth and expansion would have the potential to affect night sky lighting experienced both within and outside of the region and lighting may increase in the form of larger and/or more intense nighttime glow in the viewshed. Although growth envisioned in the 2045 MTP/SCS is primarily focused on infill areas, development outside of those geographies with long-distance views may result in nighttime lighting becoming more visible, covering a larger area and/or appearing in new areas because of projected development under the 2045 MTP/SCS.

Regarding the visual environment experienced throughout the cumulative impact analysis area (AMBAG region and adjoining counties), as planned cumulative development occurs over time the overall visual environmental will change and existing visual character could be degraded. The combination of forecasted development in the AMBAG region and planned development in neighboring counties will result in a different visual environment than currently exists. Additional development is envisioned in the AMBAG region beyond that included in the 2045 MTP/SCS. For example, the UC Santa Cruz 2021 Long Range Development Plan plans for increases in faculty and staff and physical space to accommodate projected growth, which is not captured in the 2045 MTP/SCS. The cumulative impacts from this and other development in the cumulative impact analysis on night sky lighting and visual character are considered significant, and the contribution of the 2045 MTP/SCS to these impacts is cumulatively considerable. Implementation of Mitigation Measures AES-1(a), AES-1(b), AES-2, and AES-3(a), AES-3(b), and AES-3(c) would reduce potential impacts to aesthetic resources. However, even with implementation of mitigation measures, impacts would be significant and would be cumulatively considerable.

b. Agriculture and Forestry Resources

The cumulative impact analysis area for agriculture and forestry resources consists of the AMBAG region and adjoining counties. Future development in this region that could impact farmland or forestry land is considered in the analysis. This cumulative extent is used to evaluate potential loss/conversion of farmland and forest land within the context of regional diminishment of these resources.

Impact AG-C-1 DEVELOPMENT IN THE CUMULATIVE IMPACT ANALYSIS AREA WOULD RESULT IN CONVERSION OF AGRICULTURAL LAND TO NON-AGRICULTURAL USES. CUMULATIVE IMPACTS WOULD BE SIGNIFICANT AND THE CONTRIBUTION OF THE 2045 MTP/SCS WOULD BE CUMULATIVELY CONSIDERABLE. IMPACTS TO FORESTRY RESOURCES WOULD NOT BE CUMULATIVELY CONSIDERABLE.

Future development within the cumulative impact analysis area would convert agricultural land to non-agricultural uses and may result in conflicts with agricultural zoning and Williamson Act contracts. In addition, future development adjacent to agricultural land has the potential to result in a loss of farmland due to land use conflicts, which adds to the cumulative conversion of agricultural lands, including areas designated as Important Farmland by the FMMP. Cumulative impacts to agricultural resources would be significant. As described in Section 4.2, *Agriculture and Forestry Resources*, implementation of transportation projects and land use development patterns under the 2045 MTP/SCS would contribute to these impacts by resulting in conversion of up to 2,099 acres of agriculture to

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non-agricultural use. This is considered a cumulatively considerable contribution to cumulative agricultural impacts.

Implementation of Mitigation Measure AG-1 would reduce the contribution of the proposed 2045 MTP/SCS to cumulative agricultural land impacts. However, the mitigation would not ensure that the future land use development pattern and transportation projects could feasibly relocate or realign to avoid impacts, and impacts would remain significant and unavoidable. The contribution of the proposed 2045 MTP/SCS to cumulative impacts would therefore remain cumulatively considerable post-mitigation.

In the cumulative impact analysis area, forestland and timber resources are primarily located in Santa Cruz County. Future development within the cumulative impact analysis area would not convert forestland to non-forest uses and thus, would not result in conflicts forest zoning. Cumulative impacts to forestland and timber resources would therefore be less than significant. As described in Section 4.2, *Agriculture and Forestry Resources*, implementation of projects envisioned as part of the 2045 MTP/SCS would not contribute to cumulative impacts. The contribution of the proposed 2045 MTP/SCS to cumulative impacts would not be cumulatively considerable.

c. Air Quality

The AMBAG planning region falls within the jurisdiction of the Monterey Bay Area Resources District (MBARD), while the adjoining counties fall within the jurisdiction of the Bay Area Air Quality Management District, San Joaquin Valley Air Pollution Control District, or San Luis Obispo Air Pollution Control District. Each of these four air districts has prepared an air quality plan to improve conditions and meet federal and state air quality standards. While each air district is primarily responsible for regulating emissions within its own boundaries, the transport of emissions in one area can affect another area's ability to achieve attainment of pollutant standards. All four air districts currently exceed at least one federal and/or state air quality standard. Because emissions can cross the boundaries of air districts before dissipating, the cumulative impact analysis area for air quality consists of the AMBAG region and adjoining counties.

Impact AQ-C-1 DEVELOPMENT IN THE CUMULATIVE IMPACT ANALYSIS AREA WOULD RESULT IN AN INCREASE OF REGIONAL PM₁₀ EMISSIONS AND WOULD EXPOSE SENSITIVE RECEPTORS TO DIESEL PARTICULATES AND TOXIC AIR CONTAMINANTS. CUMULATIVE IMPACTS WOULD BE SIGNIFICANT AND THE CONTRIBUTION OF THE 2045 MTP/SCS WOULD BE CUMULATIVELY CONSIDERABLE.

Future development within the cumulative impact analysis area would involve grading and paving, or the construction of permanent facilities. Although individual development projects may not generate significant short-term emissions, it is probable that several projects would be under construction simultaneously and would generate cumulative construction emissions that could impact air quality. While regional ozone precursors would be reduced with implementation of the 2045 MTP/SCS compared to 2020 baseline conditions, regional PM₁₀ emissions would increase beyond baseline conditions. Construction activities, such as excavation and ground disturbance, associated with transportation projects under the 2045

MTP/SCS, as well as the land use projects envisioned by the 2045 MTP/SCS, would create fugitive dust emissions and have the potential to result in temporary adverse impacts on air quality. Moreover, construction equipment used for the construction of 2045 MTP/SCS projects may not be the lowest emitting equipment available.

The 2045 MTP/SCS could result in substantial increases in pollutant emission levels (PM₁₀ and toxic air contaminants) during construction and operational activities associated with future growth and development patterns. However, implementation of the 2045 MTP/SCS is intended to reduce the overall emissions load through a transportation and land use strategy that maximizes access to transit and other alternative transportation approaches, lowering potential VMT per capita. While an improvement over what would be expected absent the 2045 MTP/SCS, given existing air pollution conditions in surrounding areas, the 2045 MTP/SCS would have a cumulatively considerable contribution to regional air quality impacts. Implementation of Mitigation Measures AQ-1 through AQ-5 would reduce the contribution to cumulative air quality impacts. However, the 2045 MTP/SCS contribution would remain cumulatively considerable after mitigation because PM₁₀ emissions reductions cannot be guaranteed.

d. Biological Resources

The cumulative impact analysis area for biological resources consists of the AMBAG region and the adjoining counties. This cumulative extent encompasses the mosaic of representative habitat types (and associated biological resources) affected by the transportation projects and land use pattern envisioned in the 2045 MTP/SCS, including creeks and drainages, natural communities, agriculture, and coastal development. Future transportation projects and growth in the region could impact resources in the surrounding counties, and the interaction between the affected environment and MTP/SCS projects would be limited to this area.

Impact BIO-C-1 DEVELOPMENT IN THE CUMULATIVE IMPACT ANALYSIS AREA WOULD HAVE SUBSTANTIAL ADVERSE IMPACTS ON SPECIAL-STATUS PLANT AND ANIMAL SPECIES, SENSITIVE NATURAL COMMUNITIES, AND INTERFERE WITH WILDLIFE MOVEMENT. CUMULATIVE IMPACTS WOULD BE SIGNIFICANT AND THE CONTRIBUTION OF THE 2045 MTP/SCS WOULD BE CUMULATIVELY CONSIDERABLE.

Biological resources impacts resulting from cumulative development within the cumulative impact analysis area would include direct and indirect impacts to sensitive/special-status species or their habitat; impacts to riparian, wetland, or other sensitive natural communities; or interference with wildlife movement. As stated in Section 4.4, *Biological Resources*, there are 388 special-status species known to occur or with potential to occur within the AMBAG region. Given the extent of future development anticipated in the cumulative impact analysis area, these cumulative impacts would likely be significant. Implementation of transportation projects and land use development patterns under the 2045 MTP/SCS would contribute to these impacts, as described in Section 4.4, *Biological Resources*. Due to the potential direct and indirect impacts that may occur as a result of the 2045 MTP/SCS, the proposed 2045 MTP/SCS contribution to this impact would be cumulatively considerable.

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Mitigation Measures BIO-1 through BIO-5 set requirements for surveys and actions to be taken if biological resources have potential to be impacted by the 2045 MTP/SCS transportation and land use projects. However, as discussed in Section 4.4, *Biological Resources*, impacts to special-status species and their habitat; sensitive habitats; and wildlife movement would be significant and unavoidable. The contribution of the proposed 2045 MTP/SCS to cumulative impacts would therefore remain cumulatively considerable post-mitigation.

e. Cultural Resources

The cumulative impact analysis area for cultural resources consists of the AMBAG region and the adjoining counties, based on the historic, ethnographic, and prehistoric period use patterns of the region. This is appropriate because cultural resources identified in this larger region will be similar in type and style to those that are or may be present in the AMBAG region. As discussed in Section 4.5, *Cultural Resources*, the changes envisioned in the 2045 MTP/SCS could include projects that would require substantial ground disturbance in undisturbed areas or in infill areas, could impact historic built environment resources.

Impact CR-C-1 IMPLEMENTATION OF THE PROPOSED TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED UNDER THE 2045 MTP/SCS WOULD CAUSE SUBSTANTIAL IMPACTS TO KNOWN AND UNKNOWN CULTURAL, HISTORICAL, OR ARCHAEOLOGICAL RESOURCES. CUMULATIVE IMPACTS WOULD BE SIGNIFICANT AND THE CONTRIBUTION OF THE 2045 MTP/SCS WOULD BE CUMULATIVELY CONSIDERABLE.

The increase in growth in previously undisturbed areas contributes to regional impacts on existing and previously undisturbed and undiscovered historic and archaeological resources, including CEQA-defined “historical resources.” While most cultural resources are site specific, with impacts that are project specific, others may have regional significance; for example, an historic structure that represents the last known example of its kind would constitute a regional impact if it were affected by future 2045 MTP/SCS project implementation. In addition, there are historic districts or areas that can be affected by multiple or successive projects, over time, resulting in a cumulative impact to the historic resource. For such a resource, cumulative impacts would be significant, and the 2045 MTP/SCS contribution to them would be cumulatively considerable. Mitigation Measures CR-1, CR-2(a), and CR-2(b) would reduce impacts associated with 2045 MTP/SCS projects through impact minimization for historical and archaeological resources. However, it cannot be guaranteed that all future project level impacts can be mitigated to a less than significant level. As such, the 2045 MTP/SCS contribution would remain cumulatively considerable after mitigation.

f. Energy

Impacts to energy related to implementation of the 2045 MTP/SCS are analyzed in Section 4.6, *Energy*. The increase in energy demand that is anticipated to occur as population increases as a result of implementation of the 2045 MTP/SCS would contribute cumulatively to state increases in energy consumption. Therefore, the cumulative impact analysis area for energy consists of the AMBAG region, adjoining counties, and the entire State of California.

Future transportation projects and growth in the region could require energy from providers that serve parts of the surrounding counties, and the interaction between the affected environment and MTP/SCS projects would be statewide.

Impact E-C-1 DEVELOPMENT IN THE CUMULATIVE IMPACT ANALYSIS AREA WOULD INCREASE DEMAND FOR ENERGY BEYOND EXISTING CONDITIONS, BUT WOULD NOT HAVE CUMULATIVELY CONSIDERABLE CONTRIBUTIONS TO SIGNIFICANT CUMULATIVE IMPACTS RELATED TO ENERGY.

Future development in the cumulative impact analysis area would result in short term consumption of energy resulting from construction equipment and use of fuel for vehicles. Operation of future developments would also require energy but would be subject to CalGreen and California Building Energy Efficiency Standards. Furthermore, pursuant to the California Public Utilities Commission, utilities such as Pacific Gas and Electric and Central Coast Community Energy must utilize a long-term planning process to plan for increased energy demand in the area and would account for increased development and an increase in population. As such, growth in the cumulative impact analysis area and increased energy demand would be accounted for and would not result in the inefficient, unnecessary, or wasteful use of energy.

The 2045 MTP/SCS would increase demand for energy resources such as natural gas, electricity, and transportation fuels. However, many of the transportation improvement projects under the 2045 MTP/SCS would conserve transportation energy by relieving congestion and contributing towards other transportation efficiencies, resulting in lower per capita transportation energy consumption in 2045 than in the 2020 baseline year. In addition, renewable energy sources steadily constitute a larger proportion of California's energy supply makeup, resulting in a trend of decreased dependency on fossil fuels and increased dependency on renewable energy sources. As a result, the 2045 MTP/SCS would not contribute to significant cumulative impacts related to wasteful or inefficient use of energy resources and services because energy would be used more efficiently on a per capita basis with the 2045 MTP/SCS as compared to existing 2020 conditions.

In addition, adherence to existing applicable policies and regulations, such as CalGreen, California Building Energy Efficiency Standards, and the Low Carbon Fuel Standard, would ensure the incorporation of energy efficiency measures in the design and operation of future projects facilitated by the 2045 MTP/SCS and other cumulative projects. As such, the 2045 MTP/SCS would not contribute to a cumulative impact to the wasteful, unnecessary, or inefficient use of energy. The 2045 MTP/SCS contribution to cumulative impacts related to energy consumption would not result in the inefficient use of energy resources. As such, the 2045 MTP/SCS impact on wasteful, inefficient, or unnecessary energy use, or conflicts with plans for renewable energy or energy efficiency, would not be a cumulatively considerable.

g. Geology and Soils

Future development in the AMBAG region and surrounding counties could be impacted by earthquakes or also be located in similar geologic units that may be subject to seismicity or contain potential for paleontological or mineral resources. While some geologic resources,

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such as paleontological resources, are typically constrained or specific to a particular project site, the resource could extend onto adjoining property. Therefore, the cumulative impact analysis area for geology and soils consists of the AMBAG region and the adjoining counties.

Impact GEO-C-1 DEVELOPMENT IN THE CUMULATIVE IMPACTS ANALYSIS AREA, AND PROJECTS IMPLEMENTING THE 2045 MTP/SCS, WOULD BE SUBJECT TO SEISMIC HAZARDS, SUCH AS FAULT RUPTURE, EARTHQUAKES, AND LANDSLIDES. THE 2045 MTP/SCS WOULD NOT HAVE CUMULATIVELY CONSIDERABLE CONTRIBUTIONS TO SIGNIFICANT CUMULATIVE IMPACTS RELATED TO GEOLOGIC HAZARDS AND SOILS. THE 2045 MTP/SCS WOULD HAVE CUMULATIVELY CONSIDERABLE CONTRIBUTIONS TO SIGNIFICANT CUMULATIVE IMPACTS RELATED TO PALEONTOLOGICAL RESOURCES.

Geology and soils impacts may be related to: increased exposure to seismic hazards, increased erosion and/or loss of topsoil, the presence of unstable/expansive soils and alternative waste disposal or septic systems. Individual projects and developments in the cumulative impacts analysis area would be subject to geologic hazards based on site specific conditions and project design. These effects occur independently of one another and are caused by site specific and project specific characteristics and conditions. In addition, existing regulations, such as the California Building Code, specify mandatory actions that must occur during project development, which would minimize effects from construction and operation of projects related to geology, soils and seismicity as discussed above. Cumulative impacts related to geology, soils and seismicity would therefore be less than significant.

While projects envisioned under the 2045 MTP/SCS may be subject to seismic hazards, including fault rupture, ground-shaking, liquefaction, and landslides, compliance with applicable requirements would reduce impacts. Future development envisioned under the 2045 MTP/SCS would be required to comply with the California Building Code, Seismic Hazards Mapping Act, Alquist Priolo Act, and local building codes, general plan goals and policies. Furthermore, geology and soils impacts are site specific by nature and would not result in cumulative impacts to the surrounding area. The 2045 MTP/SCS would not have a cumulatively considerable contribution to significant cumulative impacts related to geology, soils and seismicity.

Development and construction in the cumulative impacts analysis area would require excavation and ground disturbance. Excavation and ground disturbance could encounter and damage or destroy subsurface paleontological resources, depending on underlying geologic units and soils. While most paleontological resources are typically site specific, with impacts that are project specific, others may have regional significance. For example, fossils may capture a particular type of organism that was endemic to a region and therefore have regional significance. Due to the potential for a fossil of regional significance to be uncovered during excavation and ground disturbing activities of projects in the cumulative impact analysis area, cumulative impacts would be significant.

The 2045 MTP/SCS could cause a substantial adverse change in or disturb known and unknown paleontological resources and would therefore result in a cumulatively considerable contribution to the significant impact. Mitigation measures outlined in Section 4.7, *Geology and Soils*, would reduce paleontological resource impacts associated with 2045

MTP/SCS projects. However, the 2045 MTP/SCS contribution would remain cumulatively considerable after mitigation because it cannot be guaranteed that all future project level impacts can be mitigated to a less than significant level. As such, the 2045 MTP/SCS contribution to cumulative impacts to paleontological resources would be cumulatively considerable.

h. Greenhouse Gas Emissions

The impacts of GHG emissions are, by definition, cumulative impacts, as they add to the global accumulation of greenhouse gases in the atmosphere. The cumulative impact analysis area for GHG emissions consists of the AMBAG region, adjoining counties, and the entire State of California. The entire state is included in the analysis area because GHG emissions from the AMBAG region and adjoining counties would influence the ability for the State to achieve its GHG reduction targets.

Impact GHG-C-1 DEVELOPMENT IN THE CUMULATIVE IMPACTS ANALYSIS AREA, AS WELL AS PROJECTS IMPLEMENTING THE 2045 MTP/SCS, WOULD GENERATE TEMPORARY SHORT-TERM GHG EMISSIONS AND GENERATE A SIGNIFICANT INCREASE IN TOTAL GHG EMISSIONS FROM MOBILE AND LAND USE SOURCES WHICH WOULD RESULT IN A SIGNIFICANT CUMULATIVE IMPACT. IMPLEMENTATION OF THE 2045 MTP/SCS WOULD NOT HAVE A CUMULATIVELY CONSIDERABLE CONTRIBUTION TO THIS SIGNIFICANT CUMULATIVE IMPACT.

As discussed in Section 4.8, *Greenhouse Gas Emissions/Climate Change*, construction activities associated with transportation improvement projects and future land use projects envisioned by the 2045 MTP/SCS would generate temporary GHG emissions. The temporary construction GHG emissions would occur concurrent with ongoing GHG emissions in the cumulative impact analysis area, such as GHG emissions ongoing agricultural activities in Fresno County, an adjoining county to the east. As described in Section 4.8, *Greenhouse Gas Emissions/Climate Change*, construction-related GHG emissions of the 2045 MTP/SCS would be significant, even after implementation of Mitigation Measure GHG-1. Therefore, when construction emissions are combined with other ongoing emissions, the cumulative impact would be significant and the contribution of the 2045 MTP/SCS would be cumulatively considerable.

The transportation projects and land use scenario envision in the 2045 MTP/SCS would also generate operational GHG emissions. Implementation of Mitigation Measure GHG-2, transportation-related greenhouse gas reduction measures, and Mitigation Measures GHG-3, project level energy consumption and water use reduction, would reduce impacts related to GHG emissions. Overall, implementation of the 2045 MTP/SCS would reduce total region wide mobile and land use emissions compared to existing conditions. Other ongoing land uses and operation of future development in the cumulative impact analysis area would also generate GHG emissions. Combined, the GHG emissions from operational activities in the cumulative impact analysis area could exceed State reduction targets and the resulting cumulative impact would be significant. The 2045 MTP/SCS would not have a cumulatively considerable contribution to this cumulative impact, both pre- and post- mitigation.

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i. Hazards and Hazardous Materials

Impacts of the 2045 MTP/SCS related to hazards and hazardous materials are analyzed in Section 4.9, *Hazards and Hazardous Materials*. Because hazardous sites could extend from a property or roadway in the AMBAG region onto adjoining areas, the cumulative impact analysis area for hazards and hazardous materials consists of the AMBAG region and the adjoining counties.

Impact HAZ-C-1 DEVELOPMENT IN THE CUMULATIVE IMPACTS ANALYSIS AREA, AS WELL AS PROJECTS IMPLEMENTING THE 2045 MTP/SCS, COULD RESULT IN HAZARDS AND EXPOSURE TO HAZARDOUS MATERIALS. THE 2045 MTP/SCS WOULD HAVE CUMULATIVELY CONSIDERABLE CONTRIBUTIONS TO SIGNIFICANT CUMULATIVE IMPACTS RELATED TO HAZARDS AND HAZARDOUS MATERIALS.

The potential impacts related to hazards and hazardous materials are generally related to site specific and project specific characteristics and conditions; however, hazardous sites or releases can occur across multiple adjoining property or jurisdictions. Although the transport of hazardous materials may occur on rail or on roadways, such as U.S. 101, that traverse both the AMBAG region and adjacent counties, there are existing federal, state, and local regulations and oversight in place that would effectively reduce the inherent hazard associated with routine transport of such materials. Regulations and oversight, as outlined in Section 4.9, *Hazards and Hazardous Materials*, would also effectively reduce the potential for individual projects to create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions, within the AMBAG region as well as adjoining counties. Land use development envisioned as part of the 2045 MTP/SCS could result in the development of sites listed in environmental databases pursuant to Government Code Section 65962.5. Although development of listed sites would be required to undergo remediation and comply with Mitigation Measure HAZ-3, cumulative impacts related to hazards and hazardous materials would be significant and implementation of the 2045 MTP/SCS would result in cumulatively considerable impacts.

Impacts related to airport hazards are also site specific, depending on the characteristics and design of individual projects and their location relative to distance and location of nearby airports. Existing regulations place limitations on the types of development that can be permitted within various aircraft zones surrounding an airport, such as building height restrictions or prohibiting residential occupancy. Mandatory compliance with these regulations would prevent substantial hazards related to airports. Cumulative impacts would be less than significant and implementation of the 2045 MTP/SCS would not result in cumulatively considerable impacts.

Emergency response plans are generally specific to a particular city or county or parts thereof. For example, in the event of an imminent emergency in Monterey County, emergency response is typically from police, ambulance and fire departments local to the county, and not from areas outside of the AMBAG region, such as Santa Clara County. Thus, the cumulative impacts related to conflicts with emergency response plans would be less than significant and implementation not cumulatively considerable impacts.

j. Hydrology and Water Quality

The cumulative impact analysis area for hydrology and water quality encompasses the watersheds and groundwater basins affected by the transportation projects and land use pattern envisioned in the 2045 MTP/SCS, including creeks and drainages, floodplains, and aquifers. Therefore, the cumulative impact assessment area consists of the AMBAG region and the adjoining counties, which encompasses the applicable watersheds and basins.

HWQ-C-1 CONSTRUCTION OF CUMULATIVE DEVELOPMENT WOULD INCREASE IMPERVIOUS SURFACES AND COULD HAVE THE POTENTIAL TO INCREASE EROSION POTENTIAL, INCREASE RUNOFF VOLUMES AND VELOCITY, AND INFILTRATE GROUNDWATER. COMPLIANCE WITH EXISTING REGULATIONS, SUCH AS NPDES AND LOCAL STORMWATER MANAGEMENT REQUIREMENTS WOULD REDUCE CUMULATIVE IMPACTS SUCH THAT THE 2045 MTP/SCS CONTRIBUTION TO CUMULATIVE IMPACTS WOULD NOT BE CUMULATIVELY CONSIDERABLE.

Cumulative development would increase erosion and sedimentation resulting from grading and construction, as well as changes in drainage patterns which could degrade surface and ground water quality. In addition, new development would increase the generation of urban pollutants that may adversely affect water quality in the long term. As with the 2045 MTP/SCS, individual construction projects within the cumulative impact area would be required to comply with applicable water quality regulations, as discussed in Section 4.10, *Hydrology and Water Quality*. Compliance with these existing requirements would reduce project level impacts throughout the cumulative impact area; as such, cumulative impacts related to water quality would be less than significant, and the 2045 MTP/SCS contribution to this impact would not be cumulatively considerable.

Development within the cumulative impact development area would increase impervious surfaces reduce groundwater infiltration. However, counties and cities in the cumulative impact development area have regulatory requirements for stormwater management, effectively requiring minimization of stormwater runoff. Because the volume of runoff would be reduced by these regulations, as well as State and federal regulations, precipitation would be retained on individual project sites and infiltrated or treated and discharged to swales, creeks, or other drainages. Compliance with GSPs where applicable, pursuant to the Sustainable Groundwater Management Act, would partially limit these cumulative effects. Cumulative impacts would be less than significant. The 2045 MTP/SCS contribution to cumulative groundwater recharge impacts would not be cumulatively considerable.

Development within a flood hazard area could result in incremental modifications over time that can have cumulative adverse effects during a flood event by impeding and displacing flows, and thereby potentially exacerbating flooding overall. In regard to alterations of the drainage pattern of an area, as development in one area contributes incrementally to surface drainage runoff or degrades water quality, and development in another area up- or down-stream does the same, the capacity of a drainage way to carry flood flows and/or the overall quality of the water may be cumulatively affected. New development envisioned under the 2045 MTP/SCS and associated impervious cover, could be potentially significant on a cumulative basis. As discussed in Impact HWQ-3 of Section 4.10, *Hydrology and Water Quality*, projects envisioned as part of the 2045 MTP/SCS would be required to maintain pre-

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project hydrology and projects that would disturb more than 1 acre would be subject to Central Coast RWQCB requirements that prevent increased in runoff flows from new development and redevelopment projects. Developments proposed within the 100-year flood zone would be required to meet local, State, and federal flood control design requirements. Implementing agencies would conduct or require project-specific hydrology studies for projects proposed to be constructed within floodplains to demonstrate compliance with Executive Order 11988 (for federally funded projects), the NFIP, the National Flood Insurance Act, and the Cobey-Alquist Floodplain Management Act, as well as any further FEMA or State requirements that are adopted at the local level. These studies would identify project design features that reduce impacts on either floodplains or flood flows that would be required through the permitting process. With these floodplain development requirements, continuing flood protection programs, and drainage requirements, would minimize the contribution of the 2045 MTP/SCS to cumulative hydrology and water quality impacts.

While there are general plan policies applicable to the AMBAG region that prohibit or limit development in areas subject to development, development would occur in inundation zones given that several cities in the AMBAG region are coastal cities on the Monterey Bay. The types of development that would be most likely to result in release of pollutants during inundation include things such as wastewater treatment plants, chemical manufacturing plants, or hazardous materials landfills. Generally, the 2045 MTP/SCS envisions land development in already urbanized areas where wastewater treatment plants already exist to serve existing development. Accordingly, the land use development envisioned in the 2045 MTP/SCS would not substantially increase the risk of release of pollutants into the environment as a result of inundations. Cumulative impacts would therefore be less than significant.

k. Land Use and Planning

Land use impacts associated with implementation of the 2045 MTP/SCS are analyzed in Section 4.11, *Land Use*. Intensified development of cities in the AMBAG region could influence land uses in adjoining counties. Accordingly, the cumulative impact analysis area for land use and planning consists of the AMBAG region and the adjoining counties.

Impact LU-C-1 DEVELOPMENT IN THE CUMULATIVE IMPACTS ANALYSIS AREA WOULD NOT PHYSICALLY DIVIDE AN ESTABLISHED COMMUNITY. HOWEVER, IT COULD RESULT IN INCONSISTENCIES OR CONFLICTS WITH LOCAL LAND USE PLANS AND LOCAL COASTAL PLANS, POLICIES, AND REGULATIONS ADOPTED FOR THE PURPOSE OF AVOIDING OR MITIGATING ENVIRONMENTAL EFFECTS. THE 2045 MTP/SCS CONTRIBUTION TO CUMULATIVE IMPACTS WOULD BE CUMULATIVELY CONSIDERABLE.

The AMBAG region is adjacent to seven counties: San Mateo, Santa Clara, Merced, Fresno, Kings, Kern and San Luis Obispo. The land between each of these counties and the AMBAG region is undeveloped agricultural land, grazing land, or open space. The existing land use scenarios in the AMBAG region would continue to develop the region and could result in expansion of urban areas into undeveloped land, as discussed in Section 4.2, *Agriculture and*

Forestry Resources. However, because there are no developed communities or urban growth areas at or near the seven county boundaries adjacent to the AMBAG region, cumulative impacts would be less than significant. Implementation of the 2045 MTP/SCS would concentrate development in infill areas and as such, would not result in the division of established communities. Therefore, cumulative impacts related to physically dividing an established community would be less than significant. The contribution of the 2045 MTP/SCS to this impact would not be cumulatively considerable.

Each of seven adjacent counties has adopted general plans that direct new growth to existing developed areas, strongly support agricultural land preservation, and are part of other regional MTP/SCSs. These general plans include goals, policies and programs adopted for the purpose of avoiding or mitigating environmental effects. San Mateo and San Luis Obispo counties have adopted Local Coastal Plans, each of which includes goals, policies and programs adopted for the purpose of avoiding or mitigating environmental effects. Development under the existing plans would, therefore, be required to comply with all existing goals, policies, and programs within existing plans. Cumulative impacts would be less than significant.

The implementation of the 2045 MTP/SCS would result in significant and unavoidable impacts in several environmental issue areas including: aesthetics/visual resources, agriculture and forestry resources, air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, noise, public services, recreation, and utilities, transportation, tribal cultural resources, and wildfire. The transportation projects and envisioned land use scenario would not result in additional impacts beyond the findings of significant and unavoidable impacts already analyzed in respective environmental issue area sections within this EIR and would not result in a physical change to the environment that has not already been addressed in this EIR. Implementation of mitigation as listed throughout resource chapters of this EIR would reduce impacts of the proposed 2045 MTP/SCS. Implementation of the 2045 MTP/SCS would not result in a cumulatively considerable contribution to a significant cumulative impact.

I. Noise

Noise impacts associated with implementation of the 2045 MTP/SCS are analyzed in Section 4.12, *Noise*. Noise resulting from roadway improvement projects envisioned in the 2045 MTP/SCS could influence ambient noise levels in adjoining counties, if and where the projects are located in proximity to adjoining counties. Therefore, the cumulative impact analysis area for noise consists of the AMBAG region and the adjoining counties.

Impact N-C-1 DEVELOPMENT IN THE CUMULATIVE IMPACT ANALYSIS AREA WOULD RESULT IN CUMULATIVE SIGNIFICANT AND UNAVOIDABLE IMPACTS RELATED TO CONSTRUCTION AND OPERATIONAL NOISE AND EXCESSIVE NOISE IN PROXIMITY TO AIRPORTS. THE 2045 MTP/SCS CONTRIBUTION TO CUMULATIVE IMPACTS WOULD BE CUMULATIVELY CONSIDERABLE.

As discussed in Section 4.12, *Noise*, construction of the transportation projects and the land use scenario envisioned in the 2045 MTP/SCS would generate temporary noise impacts. The

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transportation projects are generally far enough away from adjoining counties that construction noise would generally not combine with ambient noise levels in these counties. The 2045 MTP/SCS concentrates development in urban areas of the AMBAG region, which is also generally far enough from adjoining counties that construction noise would not affect these counties. However, construction noise resulting from either the transportation projects or the land use scenario could combine with other ongoing noise or additional construction noise within the AMBAG region, resulting in localized construction noise levels exceeding local standards. Cumulative impacts of construction noise would be significant. Implementation of Mitigation Measure N-1 would reduce some construction noise impacts; however, the 2045 MTP/SCS contribution to the cumulative impact would be cumulatively considerable.

Impacts associated with noise and vibration related to implementation of the 2045 MTP/SCS would be generally experienced locally and are not cumulative in nature. These effects occur independently of one another, related to site-specific and project-specific characteristics and conditions. However, increased traffic from implementation of the 2045 MTP/SCS could contribute to a significant increase in traffic noise levels on roadway segments throughout the cumulative impact analysis area, beyond accepted thresholds in various communities outside of the region. With implementation of Mitigation Measure N-2 and N-5, the 2045 MTP/SCS contribution to this cumulative impact would be cumulatively considerable.

Operation of the transportation projects would generate noise. Noise would predominantly be from vehicles, such as the noise of engines or the noise generate from the friction between tires and the roadway surface. Generally, these noises affect ambient noise levels near the roadways. However, some of the 2045 MTP/SCS transportation projects would increase inter-regional travel, because the 2045 MTP/SCS addresses accommodating projected growth and because some projects are on regional roadways, such as Highway 1 or U.S. 101. Therefore, the 2045 MTP/SCS would contribute to traffic noise outside the region. The cumulative impact would be significant, and the overall contribution of the 2045 MTP/SCS to significant cumulative traffic noise impacts, despite implementation of Mitigation Measures N-3 and N-4, would be cumulatively considerable.

Transportation projects of the 2045 MTP/SCS would not entail habitable structures or other facilities in which people would work or visit. However, construction of transportation projects in close proximity to existing airports would temporarily expose construction personnel to excessive noise levels. Due to the temporary nature of construction of transportation projects, impacts would be less than significant. Given the regional scale of the proposed 2045 MTP/SCS, it is possible that the plan's forecasted land use development pattern could result in exposure to exterior and interior noise levels from existing airports or airstrips that exceed applicable thresholds. People residing or working in close proximity to existing airports could be exposed to excessive noise levels. Therefore, the 2045 MTP/SCS would contribute to the exposure of people residing or working in the area to excessive noise levels. The cumulative impact would be significant, and the overall contribution of the 2045 MTP/SCS to exposure of people residing or working in the area to excessive noise levels,

despite implementation of Mitigation Measure N-6. Impacts would be cumulatively considerable.

m. Population and Housing

Population and housing impacts associated with implementation of the 2045 MTP/SCS are analyzed in Section 4.13, *Population and Housing*. The cumulative impacts analysis area for population and housing consists of the AMBAG region and the adjoining counties. This is an acceptable extent for the cumulative impacts analysis area because the 2045 MTP/SCS would not influence population and housing trends in more distant counties in northern and southern California. For example, it is not reasonable to assume that land use development envisioned in the 2045 MTP/SCS would affect or influence population growth or housing development in Santa Barbara County, more than 75 miles away from the AMBAG region.

Impact PH-C-2 DEVELOPMENT IN THE CUMULATIVE IMPACT ANALYSIS AREA COULD RESULT IN THE TEMPORARY OR PERMANENT DISPLACEMENT OF HOUSING, BUT DISPLACEMENT WOULD BE LOCALIZED AND WOULD NOT RESULT IN DISPLACEMENT AT THE REGIONAL SCALE. THE 2045 MTP/SCS CONTRIBUTION TO CUMULATIVE IMPACTS WOULD NOT BE CUMULATIVELY CONSIDERABLE.

Development in the cumulative impacts analysis area would result in population growth. Generally, the population growth in the cumulative impacts analysis area is planned for in general plans developed and adopted by counties and cities in the area. For example, Fresno County is currently working on an update to its General Plan to plan for and accommodate growth expected in the County through 2040. Similarly, UC Santa Cruz has prepared a draft version of an updated Long Range Development Plan, planning for increased student population, as well as increased faculty and staffing levels. Cumulative impacts related to inducing substantial unplanned population growth would not be significant and the 2045 MTP/SCS contribution would not be cumulatively considerable.

The general plans and zoning ordinances of counties and cities also designate areas for housing development to accommodate planned population growth. While some development may require the demolition of existing housing, each county and city in the cumulative impacts assessment area must continue to demonstrate it can meet housing requirements established through the Regional Housing Needs Allocation program, enacted throughout the state. Therefore, cumulative population and housing displacement impacts would be less than significant.

Additional population, housing, and employment, as forecasted, would occur with or without implementation of the 2045 MTP/SCS. The 2045 MTP/SCS provides a strategy to accommodate growth in such a way as to achieve a more balanced jobs/housing ration and to optimize transportation projects that support those land uses. The land use growth footprint assumes a number of residential units adequate to meet the forecasted demand, taking into account localized displacement of some households within the region. Therefore, implementation of the 2045 MTP/SCS would not result in displacement at the regional scale, and localized displacement would not be expected to increase development in areas

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surrounding the AMBAG region. The contribution of the 2045 MTP/SCS to cumulative population and housing displacement impacts would not be cumulatively considerable.

n. Public Services, Recreation, and Utilities

Public Services, Recreation, and Utilities impacts associated with implementation of the 2045 MTP/SCS are analyzed in Section 4.14, *Public Services, Recreation, and Utilities*. Generally, public services and utilities are provided on a local or regional level, and recreational facilities are used locally or regionally. Therefore, the cumulative impact analysis area for public services, recreation, and utilities consists of the AMBAG region and the adjoining counties.

Impact PSU-C-1 DEVELOPMENT IN THE CUMULATIVE IMPACT ANALYSIS AREA WOULD RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE PROVISION OF NEW OR PHYSICALLY ALTERED GOVERNMENTAL FACILITIES, THE CONSTRUCTION OF WHICH COULD CAUSE SIGNIFICANT ENVIRONMENTAL EFFECTS. THE 2045 MTP/SCS CONTRIBUTION TO CUMULATIVE IMPACTS WOULD BE CUMULATIVELY CONSIDERABLE.

As shown in Table 6-1, the population for the combined AMBAG region and adjoining counties is projected to increase from just under 6.2 million people in 2020 to approximately 7.1 million people by 2045. This level of growth would generate demand for fire protection, police services, parks and recreational facilities, schools, and other public facilities to the extent that the construction of new or expanded facilities would be required, the construction of which would cause significant environmental impacts. Similarly, future transportation improvements and land use projects throughout the cumulative impact analysis area would require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction of which would cause significant environmental effects. This development would also generate solid waste in excess of the capacity of local infrastructure and increase water demand in the AMBAG region such that water supplies may be insufficient to serve envisioned development. Cumulative impacts to public services, recreation, and utilities would therefore be significant.

As described in Section 4.14, *Public Services, Recreation, and Utilities*, the 2045 MTP/SCS would increase demand for services and facilities to the extent that new or expanded facilities would be required, the construction of which would result in significant effects. These impacts would be significant and unavoidable. The 2045 MTP/SCS contribution to cumulative public services, recreation, and utilities impacts would remain cumulatively considerable.

Water supply in the cumulative impact analysis area is derived from a variety of sources that vary depending on the location. For example, Santa Clara County derives water from sources including the Santa Clara Subbasin and Llagas Subbasin for groundwater and imported water from the Sacramento-San Joaquin Delta. Some water providers in the AMBAG region, such as the San Benito County Water District, also derive a portion of their water supply from the Sacramento-San Joaquin Delta through the Central Valley Project. Therefore, water demand from development in the AMBAG region would combine with demand from other

development in the cumulative impact analysis area. As in the AMBAG region, both groundwater and surface water supplies in portions of the cumulative impact development area may be limited. For example, according to the City of Santa Cruz Water Department's 2020 Urban Water Management Plan, the Water Department currently has insufficient supply to meet demand during drought years and projects that supplies will remain insufficient through at least 2035 (City of Santa Cruz 2021). Additional development in City of Santa Cruz Water Department service area boundary, including development envisioned in the 2045 MTP/SCS or development on the UC Santa Cruz campus would generate more demand for water. The cumulative development would create additional water demand, which may exceed supply in some localized areas. Cumulative impacts would be significant.

As discussed in Section 4.14, *Public Services, Recreation, and Utilities*, the 2045 MTP/SCS may impact water supply in the AMBAG region because of the water required for land use projects and some transportation projects. Even with the implementation of Mitigation Measures PSU-1 through PSU-4, these impacts would be significant and unavoidable. The 2045 MTP/SCS contribution to cumulative water supply impacts would remain cumulatively considerable.

o. Transportation

Transportation impacts associated with implementation of the 2045 MTP/SCS are analyzed in Section 4.15, *Transportation*. The transportation impacts of the 2045 MTP/SCS could extend in adjoining areas. Therefore, the cumulative impact analysis area for transportation consists of the AMBAG region and the adjoining counties.

Impact TRA-C-1 DEVELOPMENT IN THE CUMULATIVE IMPACT ANALYSIS AREA WOULD RESULT IN SIGNIFICANT AND UNAVOIDABLE INCREASE IN DAILY VMT PER CAPITA FROM BASELINE 2020 CONDITIONS. THE 2045 MTP/SCS CONTRIBUTION TO CUMULATIVE IMPACTS WOULD BE CUMULATIVELY CONSIDERABLE.

Implementation of the 2045 MTP/SCS would maintain emergency vehicle access and emergency vehicle requirements as projects envisioned under the 2045 MTP/SCS would be required to comply with State, regional, and local regulations for emergency vehicle access and emergency vehicle requirements. Cumulative impacts related to emergency vehicle access and emergency vehicle requirements would not be significant and the 2045 MTP/SCS contribution would not be cumulatively considerable.

Daily VMT in the AMBAG region is partially due to commuters travelling to and from employment in the adjoining counties, particularly Santa Clara County and San Mateo County in the San Francisco Bay Area. The 2045 MTP/SCS is designed to promote economic growth and employment in the AMBAG region, while also providing the proper balance between jobs and housing within the region. However, cities in the San Francisco Bay Area also continue to develop and grow, adding more employment opportunities within proximity of areas of the AMBAG region. Therefore, it is likely that some residents of the AMBAG region would continue to commute to the San Francisco Bay Area for employment. Likewise, people residing outside of but close to the AMBAG region may commute into the AMBAG region for outdoor recreation. For example, the City of Santa Cruz is a common recreational weekend

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destination for residents of San Jose in Santa Clara County. These trips contribute to VMT in the cumulative impact analysis area.

As shown in Table 4.15-5 in Section 4.15, the 2045 MTP/SCS would increase daily VMT by 2,700,188 VMT compared to the baseline 2020 conditions, which is an approximately 16 percent increase over existing conditions. While the majority of the VMT would be expected to remain within the AMBAG region, some portion of the VMT would inevitably extend to areas within adjoining counties to the region, such as the San Francisco Bay Area, described above in the previous paragraph. The most reasonable assumption is that VMT to adjoining counties would be concentrated to the most heavily travelled roadways in the counties with the highest relative employment, such as Highways 17, 25 and U.S. 101 into Santa Clara County and Highway 1 into San Mateo County. The increased VMT in adjoining areas would be in addition to the VMT generated from the increased population growth of these counties into the future. Per capita VMT in the cumulative impact area would be unlikely to reach 15 percent below existing VMT per capita by 2035 due to increased VMT in the region even without implementation of the 2045 MTP/SCS. The implementation of project-level VMT-reducing measures such as mixed uses and TOD may not be feasible and cannot be guaranteed on a project by project basis. Regional VMT reduction programs, such as VMT banks, may also not be feasible as there are no procedures or policies in place to establish such facilities. Thus, cumulative impacts on VMT would be significant and the 2045 MTP/SCS contribution to VMT impacts in adjoining areas would be cumulatively considerable.

p. Tribal Cultural Resources

Tribal cultural resources are regionally specific and determined by the local tribes. When resources occur near jurisdictional boundaries, such city or county limits, the resource can extend across jurisdictions. Therefore, the cumulative impact analysis area for tribal cultural resources consists of the AMBAG region and the adjoining counties.

Impact TCR-C-1 DEVELOPMENT IN THE CUMULATIVE IMPACT ANALYSIS AREA COULD RESULT IN SIGNIFICANT IMPACTS TO TRIBAL CULTURAL RESOURCES THAT WOULD RESULT IN A SIGNIFICANT CUMULATIVE IMPACT. THE 2045 MTP/SCS CONTRIBUTION TO THIS IMPACT WOULD BE CUMULATIVELY CONSIDERABLE.

Tribal cultural resources are regionally specific and determined by local tribes. However, development in the cumulative impact analysis area would increasingly extend into previously undeveloped areas. For example, the UC Santa Cruz 2021 Long Range Development Plan envisions the addition of 8,500 students through 2040, and an increase of 2,200 faculty and staff members. The Long Range Development Plan envisions corresponding physical space, such as office buildings and student housing buildings to accommodate this growth (UC Santa Cruz 2021). Construction on the UC Santa Cruz campus would require ground disturbance that could impact Tribal Cultural Resources. Tribal cultural resources are often associated with areas near water, such as rivers, because Native American Tribes congregated near water. The increase in growth in previously undisturbed areas would contribute to regional impacts on tribal cultural resources. Cumulative impacts would be significant.

Development in the AMBAG area would increase under the 2045 MTP/SCS by increasing mobility and growth. The increase in growth in previously undisturbed areas contributes to regional impacts on tribal cultural resources. If there may be tribal cultural resources at the location of a project site, tribal consultation in accordance with AB 52 would help ensure protection of tribal cultural resources. However, tribal territory often crosses the boundaries of multiple jurisdictions within and outside of the AMBAG region, and there could be several minor impacts to tribal cultural resources that together would result in a significant cumulative impact. The cumulative impact would be significant, and the overall contribution of the 2045 MTP/SCS to significant cumulative tribal cultural resources impacts, despite implementation of Mitigation Measure TCR-1, would be cumulatively considerable.

q. Wildfire

Wildfire impacts associated with implementation of the 2045 MTP/SCS are analyzed in Section 4.17, *Wildfire*. A wildfire ignited in the AMBAG region could spread into adjoining counties. Likewise, wildfires ignited in counties adjoining the AMBAG region could spread into the AMBAG region. Therefore, the cumulative impact analysis area for wildfire consists of the AMBAG region and the adjoining counties.

Impact W-C-1 DEVELOPMENT IN THE CUMULATIVE IMPACT ANALYSIS AREA COULD BE LOCATED IN OR NEAR A STATE RESPONSIBILITY AREA OR A VERY HIGH FIRE HAZARD SEVERITY ZONE. AS SIGNIFICANT RISK OF LOSS, INJURY, OR DEATH COULD OCCUR, IMPACTS RELATED TO WILDFIRE WOULD BE SIGNIFICANT. THE 2045 MTP/SCS CONTRIBUTION TO THIS IMPACT WOULD BE CUMULATIVELY CONSIDERABLE.

The 2045 MTP/SCS is not expected to substantially increase wildfires, but the occurrence of wildfires always exists within the AMBAG region, and the transportation and land use projects under the 2045 MTP/SCS could place people and structures within proximity to a state responsibility area (SRA) or very high fire hazard severity zone. Construction and operation of projects would risk exacerbating these existing fire hazards by creating additional potential sources of fire ignition.

During construction and operation of the 2045 MTP/SCS projects, if one of these cumulative projects were to simultaneously result in a wildland fire ignition during construction, they could combine and increase the frequency of wildland fires beyond existing conditions. The combination of these projects being constructed concurrently could substantially increase the frequency of fire in the area above natural conditions. Cumulative impacts would be significant.

The land use scenario envisioned in the 2045 MTP/SCS that would be located within proximity to an SRA or very high fire hazard severity zones would have significant wildfire impacts, as existing codes and regulations cannot fully prevent wildfires from being generated and damaging structures or populations. The 2045 MTP/SCS land use scenario concentrates the forecasted regional population and employment growth in urban areas and corridors of the AMBAG region; however, not all projects and development included in the 2045 MTP/SCS would be infill projects in urbanized areas, and some projects would inevitably be located in areas at risk of wildfires. These projects would increase the potential to ignite fires and

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therefore risk exacerbating the potential for loss or damage from wildfire. This added risk could start wildfires that could spread outside the AMBAG region impacting adjacent counties and communities. As a result, the 2045 MTP/SCS could result in a cumulatively considerable increase in wildfire risk. Implementation of Mitigation Measure W-1 would minimize the contribution to this cumulative impact. However, the overall cumulative increase in fire frequency would continue to be substantial and impacts for risks exacerbated by construction and from the aftermath of wildfires would remain significant and unavoidable.

7 Alternatives

As required by Section 15126(d) of the State CEQA Guidelines, this EIR examines a reasonable range of alternatives to the proposed 2045 MTP/SCS. Section 15126.6 of the CEQA Guidelines requires that an EIR “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.”

In addition, the CEQA Guidelines state the following:

- 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 that are infeasible. The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly discuss the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency’s determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are (i) failure to meet most of the basic project objectives, (ii), infeasibility, or (iii) inability to avoid significant environmental impacts. (CEQA Guidelines Section 15126.6(a)(c).)
- “Feasible” means capable of being accomplished within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors. (CEQA Guidelines Section 15364.)

The primary objective of the Metropolitan Transportation Plan and Sustainable Communities Strategy (MTP/SCS) is to comply with applicable regulatory requirements, including California Transportation Commission (CTC) Guidelines and Senate Bill (SB) 375. including SB 375’s regional GHG reduction targets. AMBAG’s specific objectives for the 2045 MTP/SCS are to additionally ensure that the transportation system planned for the AMBAG region accomplishes the following:

- Serves regional goals, objectives, policies, and plans.
- Responds to community and regional transportation needs.
- Promotes energy efficient, environmentally sound modes of travel and facilities and services.
- Promotes equity and efficiency in the distribution of transportation projects and services.

The analysis of alternatives focuses on the various land use and transportation scenarios that incorporate different assumptions regarding the combinations of future land uses and transportation system improvements. The 2045 MTP/SCS is specifically intended for the

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AMBAG region; therefore, an alternative location for the 2045 MTP/SCS as a whole is not possible. However, within the AMBAG region, the 2045 MTP/SCS considers different patterns of land use and transportation investments to accommodate forecasted future growth and regional housing needs.

The alternative land use and transportation scenarios modeled and analyzed by AMBAG are described in Appendix F of the 2045 MTP/SCS and the preferred scenario (proposed project) is described in detail within Chapter 2, *Transportation Investments* and Chapter 4, *Sustainable Communities Strategy*, of the 2045 MTP/SCS, as well as Chapter 2 of this EIR. A list of the transportation projects assumed in each of the alternatives is included in Appendix G of this EIR.

7.1 Alternatives Development and Screening Process

During the development of the 2045 MTP/SCS, AMBAG developed and evaluated scenarios that included various land use assumptions and transportation system improvements and investments to see how each scenario could achieve the GHG targets established by CARB for the AMBAG region as well as other performance measures. Extensive outreach with partner agencies, local jurisdictions, key stakeholders, and the public was ongoing throughout the 2045 MTP/SCS planning process through workshops, meetings, surveys, and interactive tools.

This alternatives analysis herein includes the following:

- **Alternative 1: No Project Alternative.** The No Project Alternative is comprised of a land use pattern that reflects existing land use trends and a transportation network comprised of transportation projects that are currently in construction or are funded in the short range Metropolitan Transportation Improvement Program (MTIP) (AMBAG 2021).
- **Alternative 2: Alternative Transportation Modes.** The Alternative Transportation Modes Alternative includes the same land use pattern as the 2045 MTP/SCS. Alternative transportation projects, including pedestrian, bicycle, and transit projects, under this alternative would be prioritized. Specifically, under this alternative, prioritized projects would include pedestrian projects, bicycle projects, projects to close transit gaps, additional local bus, bus rapid transit, and light rail projects.
- **Alternative 3: Infill and Transit Focus.** The Infill and Transit Focus Alternative includes a land use pattern comprised of a more compact growth footprint and increased use of regional and interregional transit service to generate an increase in regional and interregional transit ridership and corresponding decrease in vehicle miles traveled (VMT). This would include reducing VMT by locating the places where people work and live within urban centers and close to regional transit. This alternative also assumes increased telecommuting for those industries where telecommuting is feasible, such as in Financial and Professional Services and/or public sector jobs.

Each alternative is described and analyzed below to determine whether environmental impacts would be similar to, less than, or greater than those of the preferred scenario in the

2045 MTP/SCS. As required by CEQA, this section also includes a discussion of the “environmentally superior alternative” among those studied.

7.2 Alternatives Considered but Rejected

The CEQA Guidelines state that an EIR should identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency’s determination. (CEQA Guidelines Section 15126.2(c).) Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are (i) failure to meet most of the basic project objectives, (ii), infeasibility, or (iii) inability to avoid significant environmental impacts. (CEQA Guidelines Section 15126.6(c).)

For this EIR, there were two alternatives that were considered by AMBAG and rejected as infeasible during the scoping process. These alternatives and their reasons for elimination are described below.

7.2.1 Aggressive VMT Reduction Alternative

Due to the nature of the AMBAG region, certain aggressive VMT reducing measures are infeasible. For example, the region has a high variability in residential density and has a large rural component, with substantially longer trip lengths and therefore higher VMT for those in rural areas. These commuter trips are not easily replaced by transit, as longer transit trip lengths typically require multiple stops and/or transfers, making commuting via transit less attractive. The rural areas of the AMBAG region are also experiencing higher growth in housing and employment than urban areas. Such growth is particularly evident in the eastern and southern sections of the AMBAG region, with employment in the agriculture and service industries. These industries require a high level of in-person work and are therefore not conducive to telecommuting. The region also has high income variability, which further complicates the process of linking the residential and employment zones necessary to provide efficient urban transit and reduce commute trips.

Heavy commuter travel and interregional travel to the San Francisco Bay Area for jobs create a jobs-housing imbalance and results in higher VMT for the AMBAG region. Increasing infill development and higher density in the AMBAG region may have very little impact on those long work trips.

In addition, the region has a rich collection of tourist activities and special events throughout the year, which contributes to higher VMT. Such tourist generated VMT would not decrease through higher density infill development or with transit improvements.

There are also significant agriculture activities from farm workers making seasonal transient (field-to-field) trips and agriculture goods movements. These trips are not conducive to transit and often generate longer trip lengths and thus higher VMT. The VMT generated by these activities does not respond to VMT reduction strategies such as increased transit or telecommuting.

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The region's aging population is expected to grow at a faster rate in the next 20 years, primarily in coastal communities. This population attracts more service trips from rural jurisdictions, resulting higher VMT and making it difficult to provide efficient urban transit.

Other measures such as higher parking fees as well as tolling highway travel are only feasible in highly urbanized areas where increased transit services are available as an alternative mode. Therefore, an aggressive VMT reduction alternative was not considered as an alternative for detailed consideration in this EIR.

7.2.2 Road Pricing Alternative

The California State Transportation Agency, (CalSTA) has prepared the 2021 Climate Action Plan for Transportation Infrastructure (CalSTA 2021). The Climate Action Plan includes strategies to reduce VMT, including developing programs to policies to implement road pricing, also known as VMT fees. However, an alternative that aims to reduce VMT through substantially higher VMT fees would not be feasible in the AMBAG region, as these fees are only feasible in highly urbanized areas where measures like transportation demand management (TDM) strategies are highly effective. Because of the lower densities, rural areas tend to be automobile dependent. Most trips made by personal automobile on a relatively less congested roadway network which doesn't favor tolling or congestion price strategies. There is often relatively little demand for alternative modes, such as transit, cycling and walk (such alternative travel modes are only feasible and cost effective for a shorter trip in length and time). Most alternative modes experience economies of scale: increased demand can lead to improved services. A TDM strategy that gives these commuters an incentive to rideshare can lead motorists to form carpools, vanpools, or justify transit service. The 2045 MTP/SCS emphasizes TDM strategies that give automobile owners an incentive to use alternative modes for some of their trips, which can result in a positive cycle of improved service and further increases in demand for alternatives. Informal ridesharing is common in rural communities and is a particularly important option for non-drivers and lower-income residents. Ridesharing programs can match carpools and organize vanpools. Vanpooling can be particularly effective in rural communities. A bike/transit integration strategy is particularly suitable in rural areas, since many destinations are too far to easily walk to from a bus stop. In some cases, it is possible to improve freight transport services, including intermodal terminals that allow more freight to be carried by rail rather than truck.

Caltrans research has found that pricing can reduce VMT in highly urbanized areas where robust public transit systems exist, listing major international cities like London, Stockholm, and Singapore, as examples (Caltrans 2020). The AMBAG region does not include large and highly urbanized cities with robust public transit systems, such as London, England, which has an extensive underground subway system and bus system. Large U.S. jurisdictions such as San Francisco and New York City are evaluating cordon pricing (charging a fee to enter or drive within a congested area) in their jurisdictions where robust public transit systems are present. However, because the AMBAG region does not contain areas with the same high density land uses and robust transit systems as these large metropolitan cities, and because

AMBAG does not have the legal authority to impose VMT fees, this alternative was considered as an alternative for detailed consideration in the EIR.

7.3 Alternative 1: No Project Alternative

7.3.1 Description

The No Project Alternative assumes that the transportation network would be comprised of committed transportation projects fully programmed through construction included in the AMBAG's Fiscal Years 2020-2021 to 2023-2024 Metropolitan Transportation Improvement Program MTIP only (AMBAG 2021). The growth in population, jobs, and homes would be the same as the growth forecast for the proposed 2045 MTP/SCS. This alternative assumes the same housing and employment growth as the 2045 MTP/SCS, but that growth would occur based on existing land use trends in the AMBAG region as opposed to more compact development envisioned by the 2045 MTP/SCS.

7.3.2 Impact Analysis

a. Aesthetics and Visual Resources

Implementation of this alternative would result in fewer visual impacts as compared to the 2045 MTP/SCS, because many of the proposed interchanges, bridges, and roadway extensions, as well as transit and rail facilities, would not be constructed. Nevertheless, many transportation projects would still be constructed under this alternative with the potential to impact scenic vistas on designated scenic highways, along with the gradual transformation toward a more urban/suburban character would occur in many parts of the AMBAG region. In fact, because this alternative would continue current sub-regional growth trends rather than emphasizing an infill approach to land use and housing, more development would occur outside of existing urban areas, which may result in greater impacts to scenic resources in the less developed portions of the AMBAG region. Thus, impacts related to visual character would be significant and unavoidable for this alternative, as they would be with the 2045 MTP/SCS. The overall level of impact resulting from combined transportation improvement and land use projects would be similar when compared to the 2045 MTP/SCS with some impacts greater while other impacts less, but would remain significant and unavoidable.

b. Agriculture and Forestry Resources

This alternative would result in fewer transportation projects being constructed, including roadway widening and other projects that could directly convert agricultural land to non-agricultural use. However, because this alternative would continue current sub-regional growth trends rather than emphasizing an infill approach to land use and housing, more development would be expected to occur outside of existing urbanized areas, including within areas currently used for agricultural production. Given the extent of Important Farmland in Monterey, San Benito and Santa Cruz counties, impacts related to converting Important Farmland to non-agricultural use, conflicts between urban and agricultural land

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uses, and conflicts with existing agricultural zoning and/or Williamson Act contracts would be worse under this alternative than for the proposed 2045 MTP/SCS.

Forestland in the AMBAG region is located primarily in the Santa Cruz County area; development under this alternative could extend into forestland and impacts would be worse under this alternative than for the proposed 2045 MTP/SCS. As with agricultural resources, because more development under this alternative would occur outside of existing urbanized areas, impacts to forestland and forestry resources would increase compared to the 2045 MTP/SCS. However, because the No Project Alternative would not result in rezoning of any existing land, including within the Santa Cruz Mountains, and because the majority of timber areas are outside the anticipated land use development areas in Santa Cruz County, this impact would be remain less than significant for the No Project Alternative, as it is for the 2045 MTP/SCS.

The overall impact to agriculture and forestry resources resulting from the No Project Alternative would be greater than under the 2045 MTP/SCS.

c. Air Quality

Implementation of this alternative would result in reduced short-term air quality impacts from construction activity, as fewer transportation projects would be implemented and therefore less construction activity would occur. As shown in Table 7-1, under the No Project Alternative, PM₁₀ and SO_x emissions would be the same as the 2045 MTP/SCS. ROG and CO emissions would be higher compared to the proposed 2045 MTP/SCS and NO_x emissions would be lower (see also Modeling Methodology in Appendix F to the 2045 MTP/SCS).

Table 7-1 Regional Emissions Analysis of the No Project Alternative

Scenario	VMT	ROG Emissions (tons/day)	NO _x Emissions (tons/day)	PM ₁₀ Emissions (tons/day) ¹	CO Emissions (tons/day)	SO _x Emissions (tons/day)
2045 No Project	20,041,051	1.73	3.69	1.15	17.62	0.05
2045 MTP/SCS	20,032,142	1.72	3.71	1.15	17.51	0.05

VMT = vehicle miles traveled; ROG = reactive organic gases; NO_x = nitrous oxide; PM₁₀ = particulate matter with a diameter of 10 microns or less; CO = carbon monoxide; SO_x = sulfur oxide

¹ PM₁₀ includes tire wear and brake wear emissions.

Source: On-road motor vehicle emissions were calculated by AMBAG using EMFAC. Refer to 2045 MTP/SCS Chapter 5 and Appendix G for complete methodology.

The higher ROG and CO emissions would be due to higher VMT expected under this alternative (20.04 million compared to 20.03 million VMT per day, an increase of 0.05 percent). The SCS is intended to increase residential and commercial land use capacity within existing transit corridors which would shift a greater share of future growth to these corridors, ultimately increasing density and improving circulation and multimodal connections. If this alternative were selected, improvements in the transportation infrastructure and infill development projects anticipated under the 2045 MTP/SCS would

not occur. Higher VMT as a result of fewer alternative transportation projects under this alternative would result in the higher ROG, and CO emissions. While the 2045 No Project Alternative would result in higher VMT than the 2045 MTP/SCS, it would also have a lower truck percentage as compared to the 2045 MTP/SCS, contributing to lower NO_x emissions.

Future land use development under this alternative would not be infill or TOD-focused. As such, the No Project Alternative would not concentrate population adjacent to transit and other transportation facilities that could result in more people being exposed to elevated health risks from TACs. Accordingly, impacts related to TAC exposure to sensitive receptors would be less under this alternative than under the 2045 MTP/SCS, but would remain significant and unavoidable.

Overall air quality impacts would increase under this alternative when compared to the 2045 MTP/SCS because VMT would be higher under this alternative. Under this alternative, TACs would be reduced due to reduced development near transit and transportation facilities. However, long term operational impacts related exposure of sensitive receptors to substantial hazardous air pollutant concentrations and objectionable odors would remain significant and unavoidable, as they would be for the proposed 2045 MTP/SCS.

d. Biological Resources

Implementation of this alternative may result in fewer impacts to biological resources resulting from transportation improvement projects, as fewer roadway extensions, widening projects, and creek crossings would occur under this alternative. However, because this alternative would continue current sub-regional growth trends rather than emphasizing an infill approach to land use and housing, more development would be expected to occur outside of existing urbanized areas, including in areas providing habitat for special status plant and animal species. Overall impacts to special status plants, animals, wetlands and/or riparian habitat and wildlife movement outside developed urban areas would therefore be greater than under the 2045 MTP/SCS. Impacts would remain significant and unavoidable, as they would be for the proposed 2045 MTP/SCS.

e. Cultural Resources

As described in Section 4.5, *Cultural Resources*, some of the 2045 MTP/SCS projects may be located in proximity to historical resources or include repair or replacement of potentially historical structures (e.g., bridges). Because fewer projects would be developed under the No Project Alternative, these impacts would be reduced. In addition, because less infill development would occur under this alternative, fewer impacts involving redevelopment or demolition of existing structures resulting from land use development would occur. Impacts to historic resources would therefore be reduced when compared to the 2045 MTP/SCS. However, project specific impacts may still be significant, as they are for the proposed 2045 MTP/SCS.

Implementation of this alternative would involve less ground disturbance associated with transportation improvements than would occur under the 2045 MTP/SCS. However, because more land use development could occur outside of existing urbanized areas, more ground

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disturbance would be expected to occur in previously undeveloped areas. As such, the potential for uncovering known or unknown archaeological resources would increase under this alternative for new development but decrease for transportation projects. The overall level of impact resulting from combined transportation improvement and land use projects would be similar when compared to the 2045 MTP/SCS. Impacts to archaeological resources would remain significant and unavoidable, as they are for the proposed 2045 MTP/SCS.

f. Energy

Because this alternative would result in less construction of transportation infrastructure, overall energy use associated with construction activities would be reduced when compared to the 2045 MTP/SCS. However, this alternative would not include many of the capital improvements envisioned under the proposed 2045 MTP/SCS that would improve transportation efficiency and reduce regional energy demand, such as active transportation projects and Complete Streets. Energy use will increase over time as the result of regional socioeconomic (population and employment) growth, regardless of implementation of the 2045 MTP/SCS. The No Project Alternative would result in similar total and per capita energy use as compared to the 2045 MTP/SCS. As discussed in Section 4.6, *Energy*, the 2045 MTP/SCS would not result in inefficient, unnecessary, or wasteful direct or indirect consumption of energy, and would be consistent with applicable energy conservation policies. Because the No Project Alternative would be similar in both total and per capita energy use, impacts would be similar when compared to the 2045 MTP/SCS and impacts related to inefficient, unnecessary, or wasteful direct or indirect energy consumption would be less than significant, as they are for the proposed 2045 MTP/SCS.

g. Geology and Soils

Impacts of this alternative related to erosion and loss of topsoil would be less than significant pursuant to compliance with existing regulations, similar to the 2045 MTP/SCS. Because this alternative does not include as many new interchanges, bridges, roads and fixed facilities, there would be less exposure of new structures to hazardous geologic conditions, including liquefaction, expansive soils, landslides, ground-shaking and flooding. Conversely, if inadequate structures are not replaced, the potential for these existing structures and people using these structures to be harmed by geologic hazards could be greater than under the proposed 2045 MTP/SCS than under the No Project Alternative. Implementation of this alternative would involve less ground disturbance associated with transportation improvements than would occur under the 2045 MTP/SCS. However, because more land use development could occur outside of existing urbanized areas due to growth continuing under the existing land use pattern, more development would be expected to occur in previously undeveloped areas. While development under the No Project Alternative would also be required to comply with the California Building Code and requirements set forth by the Alquist Priolo Zone Act, the No Project Alternative would result in a greater area of land being converted from undeveloped to developed uses that could be located in areas with greater susceptibility to seismic related risks. Impacts related to susceptibility to seismic related risks would be less than significant, as under the 2045 MTP/SCS.

Impacts to paleontological resources would be greater under this alternative compared to the 2045 MTP/SCS, as mitigation for paleontological resources would not be implemented and ground disturbing activities could result in significant and unavoidable impacts, similar to the 2045 MTP/SCS. Projects located within mineral resource zones would be required to comply with the California Surface Mining and Reclamation Act, as would all projects under the 2045 MTP/SCS, and as such impacts would remain less than significant, as under the 2045 MTP/SCS.

Overall, impacts to geology and soils would be slightly greater compared to the 2045 MTP/SCS but would remain less than significant. Impacts to paleontological resources would also be greater, and would be significant and unavoidable.

h. Greenhouse Gas Emissions

The No Project Alternative would result in fewer construction related GHG emissions, as fewer transportation infrastructure projects would be constructed compared to the 2045 MTP/SCS. However, operation of the No Project Alternative would result in conflicts with applicable GHG reduction plans, policies, and regulations, a significant and unavoidable impact. Table 7-2 compares total and per capita GHG emissions for the 2045 No Project and 2045 MTP/SCS scenarios. As shown therein, the No Project Alternative would reduce total GHG emissions from 4,151,818 MT CO₂e/year for the 2045 MTP/SCS to 4,149,056 MT CO₂e/year – a reduction of 2,762, or 0.07 percent. The reduction is negligible (less than a one percent reduction) such that per capita GHG emissions would be similar as compared to the 2045 MTP/SCS. It should be noted, however, that the results do not account for the TDM, TSM, WFH and enhanced transit services GHG reductions that would be implemented with buildout of the 2045 MTP/SCS. Thus, the modeled 2045 MTP/SCS emissions, which are solely based on VMT, are conservative; actual emissions for the 2045 MTP/SCS would be lower than is shown in Table 7-2.

Table 7-2 No Project Alternative Net Change in Total GHG Emissions

Scenario	2045 No Project	2045 MTP/SCS
On-Road Mobile Emissions from VMT (MT CO ₂ e/year)	1,865,475	1,868,236
Land Use Emissions from Table 4.8-1 ¹ (MT CO ₂ e/year)	2,283,582	2,283,582
Total	4,149,057	4,151,818
Population (persons)	869,776	869,776
Per Capita (MT CO ₂ e per service population per year)	4.77	4.77

MT = metric tons; CO₂ = carbon dioxide; CO₂e = carbon dioxide equivalent

¹ Refer to Section 4.8, *Greenhouse Gas Emissions/Climate Change*

Source: Total GHG emissions were calculated by AMBAG. Refer to 2045 MTP/SCS Chapter 5 and Appendix G for complete methodology.

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Construction and operation of the No Project Alternative would result in significant and unavoidable impacts due to an increase in GHG emissions, similar to the 2045 MTP/SCS. In addition to the calculation for the 2045 MTP/SCS being conservative, the No Project Alternative would not include the promotion of sustainable modes of travel, clean vehicle technologies and traffic operational improvements (ITS/TSM) within the AMBAG region that would help improve GHG emissions levels from mobile sources substantially. Because of the negligible reduction in total GHG emissions (less than a one percent reduction), the overall impact of this alternative would be similar to what would occur under the 2045 MTP/SCS, and impacts would remain significant and unavoidable.

i. Hazards and Hazardous Materials

This alternative would result in fewer infrastructure projects being constructed, thereby reducing hazardous material use, storage, and transportation resulting from construction of those projects. However, the volume of hazardous materials being transported to support land use development in the region would remain the same, as land use development would continue to occur under this alternative. Because future development under the No Project Alternative would be subject to applicable hazardous materials regulations and programs, impacts relating to routine transport, use, or disposal of hazardous materials; risk of upset and accident conditions; emissions within one-quarter mile of a school; airport hazards; and interference with emergency response and evacuation plans would be less than significant, similar to 2045 MTP/SCS. Overall hazards and hazardous materials impacts would be similar under this alternative as under the 2045 MTP/SCS.

j. Hydrology and Water Quality

This alternative would result in fewer transportation infrastructure projects being constructed. Therefore, this alternative would reduce water quality impacts resulting from construction-related erosion and sedimentation and would generate less water demand for dust suppression activities for transportation projects. These impacts would remain less than significant pursuant to compliance with existing regulations, as they are for the proposed 2045 MTP/SCS.

Because this alternative would continue current sub-regional growth trends rather than emphasizing an infill approach to land use and housing, more development would be expected to occur outside of existing urbanized areas. As such, impervious surfaces would be expected to increase under this alternative. Because projects would be located in less developed areas, runoff would include fewer urban pollutants such as heavy metals from auto emissions, oil and grease than projects under the 2045 MTP/SCS. However, because more development would occur in and therefore be adjacent to agricultural areas, runoff from those adjacent agricultural areas would contain more fertilizers and pesticides. While projects under this alternative may require more grading and vegetation removal, including in proximity to creeks, less urban development may result in less disturbance of soils on previously contaminated sites. As such, water quality in creeks may be more impacted, but water quality within urban areas may be less impacted. Because of these tradeoffs, the No

Project Alternative would result in impacts to water quality that are overall comparable to the 2045 MTP/SCS with some impacts greater while other impacts would be less; water quality impacts would remain less than significant, pursuant to compliance with existing regulations, as they are for the proposed 2045 MTP/SCS.

k. Land Use

As with the 2045 MTP/SCS, this alternative would not be anticipated to divide an established community, as development would occur consistent with existing land use patterns and primarily within existing communities. As noted in Section 4.11, *Land Use*, the 2045 MTP/SCS includes a list of planned and programmed projects including local and regional capital improvements that have been anticipated or accounted for in local general plans and regional, statewide, and federal transportation improvement programs. In addition, the objective of the 2045 MTP/SCS is to provide for a comprehensive transportation system of facilities and services that meets public need for the movement of people and goods, and that is consistent with the social, economic, and environmental goals and policies of the region. The No Project Alternative would not provide transportation projects anticipated within applicable general plans and transportation improvement programs, nor would it guide development to explicitly meet social, economic, and environmental goals and policies of the region as anticipated under the 2045 MTP/SCS. Due to the more dispersed land use pattern, the amount of undeveloped land impacted would be greater under this alternative.

Although the No Project Alternative would continue existing land use patterns and trends, it would increase the severity of several environmental impacts, as discussed herein. As such, it could result in conflicts with State and local policies and regulations adopted for the purpose of avoiding or mitigating environmental effects. Because environmental effects would generally increase under this alternative, the overall impacts on land use would be greater under this alternative when compared to the 2045 MTP/SCS but would remain less than significant.

l. Noise

From a programmatic perspective, fewer transportation infrastructure projects would result in less construction activity under the No Project Alternative. This would reduce temporary noise impacts throughout the AMBAG region. In addition, because the number of infill or TOD projects would be less under the No Project Alternative, construction-related noise impacts on adjacent sensitive receptors would also decrease. However, construction noise would still occur, and impacts would continue to be significant, as they are for the proposed 2045 MTP/SCS.

Although the number of transportation projects would be reduced as compared to the 2045 MTP/SCS, increased traffic volumes resulting from regional growth would continue to occur. Whether noise impacts would be greater or less than those anticipated under the 2045 MTP/SCS remains dependent on site specific considerations that cannot currently be known. Regionally, the difference in VMT between the No Project Alternative and the 2045 MTP/SCS is not enough to noticeably change overall noise levels in the region. Mobile source noise

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levels resulting from traffic would therefore be similar under the No Project Alternative when compared to the 2045 MTP/SCS and would remain significant and unavoidable.

Because most rail and transit improvements planned under the 2045 MTP/SCS would not be implemented under this alternative, the potential for increased rail and transit noise would be reduced under the No Project Alternative but would remain significant and unavoidable. Construction and operation of future development under the No Project Alternative could be located in close proximity to a public airport or private airstrip, as under the 2045 MTP/SCS, and would result in exposure of people residing or working in the area to excessive noise levels. As under the 2045 MTP/SCS, the No Project Alternative could result in the exposure of people residing or working near public airports or private airstrips to excessive noise levels. However, mitigation of noise near airports would not be implemented under the No Project Alternative. Therefore, impacts would be greater under the No Project Alternative and would remain significant and unavoidable.

Construction vibration of transportation projects or land use projects under the No Project Alternative could result in excessive groundborne vibration. Some cities and counties in the AMBAG region include specific regulations in their municipal code to reduce construction vibration impacts. However, the No Project Alternative would not include mitigation to reduce physical impacts due to vibration and as such, impacts would be greater than under the 2045 MTP/SCS and would remain significant and unavoidable.

Overall, noise-related impacts across the region would be similar to the 2045 MTP/SCS, with some impacts greater and some impacts similar, and would continue to be significant and unavoidable.

m. Population and Housing

The No Project Alternative would result in the same population increase in the region by 2045 as the proposed 2045 MTP/SCS. As such, impacts related to population growth would be similar to the 2045 MTP/SCS and would remain less than significant. Because fewer transportation projects would be implemented and land uses would be less dense (thus resulting in less demolition and redevelopment of existing housing), displacement-related impacts would be reduced under this alternative when compared to the 2045 MTP/SCS. This impact would be less than significant. Overall population and housing impacts would be less than the 2045 MTP/SCS.

n. Public Services, Recreation, and Utilities

Implementation of this alternative would result in the same population increase in the region by 2045 as the proposed 2045 MTP/SCS. As such, expected demand on public services, recreation, and utilities and service systems would be similar to the 2045 MTP/SCS and may require new or expanded facilities. Overall, impacts public services, recreation, and utilities and service systems would be similar as under the 2045 MTP/SCS, and would remain significant and unavoidable.

Increases to water demand are primarily associated with increased population levels. The No Project Alternative would result in the same population increase in 2045 as the MTP/SCS. However, this alternative would result in less dense land use development, which would result in a less efficient water supply system (e.g., greater areas of irrigated landscaping). As such, future water demand associated with this alternative would be greater than water demand for the 2045 MTP/SCS. This impact, which is significant and unavoidable for the 2045 MTP/SCS, would be greater under the No Project Alternative. Impacts would remain significant and unavoidable.

o. Transportation

This alternative would not include many of the projects envisioned under the proposed 2045 MTP/SCS, including new highway and intersection projects, new bikeway and pedestrian projects (active transportation), new railroad projects, new transit projects, new intelligent transportation system/transportation demand management projects and aviation projects. Many of these projects are intended to address VMT, and in many cases would serve as mitigation measures to reduce potential impacts associated with planned long-term development.

Overall, VMT within the AMBAG region would increase as a result of regional population growth, with or without the 2045 MTP/SCS. The No Project Alternative would generate 20,041,051 daily VMT in 2045 compared to 20,032,142 daily VMT for the 2045 MTP/SCS – an increase of 8,909 daily VMT, or 0.04 percent. This increase is negligible (less than a one percent change) such that VMT would be similar as compared to the 2045 MTP/SCS. While the VMT would be similar under both the 2045 No Project and 2045 MTP/SCS, the VMT estimates do not account for the TDM, TSM, WFH and enhanced transit services that would be implemented with buildout of the 2045 MTP/SCS. Thus, the modeled 2045 MTP/SCS VMT is conservative; actual VMT for the 2045 MTP/SCS would be lower than is calculated.

Under the No Project Alternative, projects to increase bus capacity on congested facilities and the frequency of bus lines would not be implemented. Additionally, the 2045 MTP/SCS projects that are intended to ensure a reliable bus fleet would not be implemented under the No Project Alternative. Without these types of projects, operation of public transit may be unreliable or fail to meet the frequency and performance standards established by MST, Santa Cruz METRO and San Benito County Express. Thus, compared to the 2045 MTP/SCS, the No Project Alternative would result in greater impacts due to conflicts with programs addressing the circulation system.

Overall, the No Project Alternative would result in similar VMT in the AMBAG region compared to the 2045 MTP/SCS and would increase impacts to transit service. Thus, overall, impacts to transportation would be greater under the No Project Alternative and would remain significant and unavoidable.

p. Tribal Cultural Resources

Implementation of this alternative would involve less ground disturbance associated with transportation improvements than would occur under the 2045 MTP/SCS. However, because

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more land use development could occur outside of existing urbanized areas, more ground disturbance would be expected to occur in previously undeveloped or open space areas. As such, the potential to disturb tribal cultural resources, including ancestral remains and sacred sites, would increase under this alternative.

As with the 2045 MTP/SCS, future projects would be required to comply with AB 52, which would encourage tribal consultation with local California Native American tribes and require the identification of project specific substantial adverse effects on tribal cultural resources and appropriate project specific mitigation measures. If it is determined that a specific project would result in a substantial adverse change in the significance of a tribal cultural resource, the impact would be significant. This significant impact would occur for projects under the No Project Alternative, as it would for the 2045 MTP/SCS. As such, impacts would remain significant and unavoidable, as they would for the 2045 MTP/SCS. Because of the increased potential to disturb tribal cultural resources from development outside of urbanized areas, the overall impact of the No Project Alternative would be greater than under the 2045 MTP/SCS.

q. Wildfire

The No Project Alternative would allow more housing near wildlands and would increase the vulnerability of people and structures to wildland fire. Under the No Project Alternative land use development could occur outside of existing urbanized areas and extend into more wildland areas. This impact, which is significant and unavoidable for the 2045 MTP/SCS, would be greater under the No Project Alternative and would remain significant and unavoidable.

7.4 Alternative 2: Alternative Transportation Modes

7.4.1 Description

This alternative is designed to reduce VMT by providing or promoting alternative transportation modes in advance of or in conjunction with projected population and employment growth in the AMBAG region through 2045. Alternative transportation includes walking, bicycling, and transit. This alternative assumes the same growth in population, jobs, and housing numbers, and the same land use pattern, as the 2045 MTP/SCS.

However, unlike the 2045 MTP/SCS, this alternative focuses on prioritizing transportation investments toward all alternative modes of transportation projects first, such as local transit projects and active transportation projects. Active transportation projects would include construction of bicycle lanes and bicycle/pedestrian amenities. The goal of this alternative is to build these projects first and to use as much of the transportation funding available for these alternative transportation modes projects. Under this alternative, investment would be focused on closing transit gaps by enhancing local transit bus service rather than interregional or long-distance services. Examples of active transportation projects include bicycle lanes and pedestrian facilities, such as the planned bicycle/pedestrian crossing over Highway 1 in Santa Cruz and the Fort Ord Regional Trail and Greenway (FORTAG) project in

Monterey County. Additional projects would include installation of Class IV bike lanes as part of the Reservation Road Cycle Track (MON-MAR070-MA) and installation of the Esquiline Road Pedestrian Crossing (MON-MYC329-UM) in Monterey County; installation of a San Juan Bautista Historic Park Bike Lane (SB-SJB-A21) and the Monterey Street Bike Route (SB-SJB-A22) in San Benito County; and the Capitola Village Multimodal Enhancements – Phase 2/3 (SC-CAP-P04b-CAP) and the Glen Coolidge Drive/Highway 9 Bike Path (SC-CO-P40-USC) in Santa Cruz County.

This alternative includes more than \$1.4 billion more funding for active transportation and transit projects than the proposed 2045 MTP/SCS. These include active transportation projects that were not included in the proposed 2045 MTP/SCS as well as additional local bus, bus rapid transit, and light rail projects. This alternative includes fewer local streets and roads and highway projects than the proposed 2045 MTP/SCS.

7.4.2 Impact Analysis

a. Aesthetics and Visual Resources

Implementation of this alternative would result in fewer visual impacts as compared to the 2045 MTP/SCS, because many of the proposed interchanges, bridges, and roadway extensions, as well as regional transit and rail facilities would not be constructed. However, this alternative would still include alternative transportation projects such as the bicycle/pedestrian crossing over Highway 1 in Santa Cruz. In addition, many capital improvements for alternative transportation modes would still be constructed under this alternative with the potential to impact scenic vistas on designated scenic highways, along with the gradual transformation toward a more urban/suburban character would occur in many parts of the AMBAG region. Land use development envisioned under this alternative would be to the same as the proposed 2045 MTP/SCS infill approach to land use and housing and would result in similar aesthetic impacts to scenic resources in the less developed portions of the AMBAG region. Thus, impacts related to visual character would be significant and unavoidable under this alternative, as they are with the proposed 2045 MTP/SCS. The overall level of impact resulting from combined alternative transportation improvement and land use projects would be reduced when compared to the 2045 MTP/SCS with some lesser impacts due to elimination of some transportation projects, but would remain significant and unavoidable.

b. Agriculture and Forestry Resources

This alternative would result in fewer transportation infrastructure projects being constructed, including roadway widening and other projects that could directly convert agricultural land to non-agricultural use. This alternative would emphasize alternative modes of transportation rather than vehicular transportation infrastructure projects and would result in fewer roadway projects that could extend into agricultural uses. Because alternative transportation projects would be prioritized, roadway widening would be less likely to occur under this alternative.

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Land use development under this alternative, as with the 2045 MTP/SCS, would use an infill approach to land use and housing, and land use impacts to agricultural resources would be the same as the 2045 MTP/SCS. Given the extent of Important Farmland in Monterey, San Benito and Santa Cruz counties, land use impacts related to converting Important Farmland to non-agricultural use, conflicts between urban and agricultural land uses, and conflicts with existing agricultural zoning and/or Williamson Act contracts would be the comparable to the proposed 2045 MTP/SCS.

Forestland in the AMBAG region is primarily located in Santa Cruz County. This alternative would result in fewer transportation projects near forestry resources, as fewer roadway projects would be developed. Land use projects under this alternative would be identical to the 2045 MTP/SCS, as the land use scenario is the same. Overall, impacts to forestry resources resulting from transportation projects would be slightly less than impacts under the 2045 MTP/SCS, but impacts from the land use pattern would be the same. Impacts would remain significant and unavoidable, as they are for the 2045 MTP/SCS.

c. Air Quality

This alternative assumes the same growth in population, jobs, and housing numbers, and the same land use pattern, as the 2045 MTP/SCS. Impacts to air quality resulting from land use development would therefore be identical to the 2045 MTP/SCS.

Implementation of this alternative would result in greater air pollutant emissions. As shown in Table 7-3, ROG, NO_x, PM₁₀, and CO emissions would be slightly higher under Alternative 2, compared to the proposed 2045 MTP/SCS (see also Modeling Methodology in Appendix F to the 2045 MTP/SCS).

Table 7-3 Regional Emissions Analysis for Alternative 2

Scenario	VMT	ROG Emissions (tons/day)	NO _x Emissions (tons/day)	PM ₁₀ Emissions (tons/day) ¹	CO Emissions (tons/day)	SO _x Emissions (tons/day)
2045 MTP/SCS	20,032,142	1.72	3.71	1.15	17.51	0.05
Alternative 2	20,126,625	1.73	3.75	1.16	17.58	0.05

VMT = vehicle miles traveled; ROG = reactive organic gases; NO_x = nitrous oxide; PM₁₀ = particulate matter with a diameter of 10 microns or less; CO = carbon monoxide; SO_x = sulfur oxide

¹ PM₁₀ includes tire wear and brake wear emissions.

Source: On-road motor vehicle emissions were calculated by AMBAG using EMFAC 2017. Refer to 2045 MTP/SCS Chapter 5 and Appendix G for complete methodology.

The higher emissions would be due to higher VMT expected under this alternative. Although this alternative was designed to reduce VMT by providing or promoting alternative transportation modes, it did so by eliminating many roadway improvement projects, some of which would reduce congested and total VMT. As such, the overall VMT within the AMBAG region would increase under Alternative 2, as described further under *Transportation* below. Impacts to air quality would be significant and unavoidable, as under the 2045 MTP/SCS.

Under this alternative, land use developments envisioned as part of the 2045 MTP/SCS would still occur, and sensitive receptors would still be exposed to health risks from TACs during operation. Overall air quality impacts would therefore be similar but slightly greater under this alternative when compared to the 2045 MTP/SCS. Long term operational impacts related to PM₁₀ and exposing sensitive receptors to substantial hazardous air pollutant concentrations and objectionable odors would remain significant and unavoidable.

d. Biological Resources

This alternative assumes the same growth in population, jobs, and housing, and the same land use pattern, as the 2045 MTP/SCS. Biological resources impacts resulting from future land use development under this alternative would therefore be identical to land use-related impacts from the 2045 MTP/SCS. This alternative would emphasize an infill approach to land use and housing, similar to the proposed 2045 MTP/SCS, development would primarily occur in already urbanized areas and would not result in development of areas that provide habitat for special status plant and animal species.

Implementation of this alternative may result in less impact to biological resources resulting from transportation improvement projects, as fewer roadway extensions, widening projects and creek crossings would occur under this alternative. Overall impacts to special status plants, animals, wetlands and/or riparian habitat and wildlife movement outside developed urban areas would therefore be reduced compared to the 2045 MTP/SCS. Impacts would remain significant and unavoidable, as they would be for the proposed 2045 MTP/SCS.

e. Cultural Resources

This alternative assumes the same growth in population, jobs, and housing numbers, and the same land use pattern, as the 2045 MTP/SCS. Cultural resources impacts resulting from future land use development under this alternative would therefore be identical to land use-related impacts from the 2045 MTP/SCS.

As described in Section 4.5, *Cultural Resources*, some of the 2045 MTP/SCS transportation improvements may be located in proximity to historical resources or include repair or replacement of potentially historic structures (e.g., bridges). Under this alternative, many of the projects that would include repair or replacement of potentially historical resources would still occur. However, fewer of these projects would occur under this alternative. Therefore, impacts to historical resources as a result of the proposed transportation projects under this alternative would be reduced compared to the 2045 MTP/SCS, but would remain significant and unavoidable.

Implementation of this alternative would involve ground disturbance activities associated with walking, bicycling, and transit improvements. However, the overall level of disturbance would be less than what would occur under the 2045 MTP/SCS because some transportation projects, such as roadway widenings, would not be constructed. As such, the potential for uncovering known or unknown archaeological resources would be similar under this alternative for new land development but decrease for transportation projects. The overall level of impact resulting from combined alternative transportation improvement and land

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use projects would be reduced when compared to the 2045 MTP/SCS. Impacts to archaeological resources would remain significant and unavoidable, as they are for the 2045 MTP/SCS.

f. Energy

This alternative assumes the same growth in population, jobs, and housing numbers, and the same land use pattern, as the 2045 MTP/SCS. Energy use will increase over time as the result of regional socioeconomic (population and employment) growth, regardless of implementation of the 2045 MTP/SCS. Therefore, impacts on energy from the land use pattern under this alternative would be identical to the 2045 MTP/SCS.

Because this alternative would result in less construction of vehicular transportation infrastructure, such as the construction of new interchanges and roadway widening, overall energy use associated with construction activities would be less when compared to the 2045 MTP/SCS. As a result, and as shown in Table 7-3, this alternative would result in higher daily VMT than the 2045 MTP/SCS. Higher VMT would result in a corresponding consumption of fuel, which is a form of energy consumption. However, daily VMT per capita would be 0.1 mile per day higher than the proposed project. Accordingly, the Alternative Transportation Modes Alternative would result in similar total and per capita energy use as compared to the 2045 MTP/SCS.

As discussed in Section 4.6, *Energy*, the 2045 MTP/SCS would not result in inefficient, unnecessary, or wasteful direct or indirect consumption of energy, and would be consistent with applicable energy conservation policies. Because the Alternative Modes of Transportation alternative could reduce construction, energy use would be slightly reduced. However, total and per capita energy use would be slightly greater to the 2045 MTP/SCS because this alternative would result in a slight increase in VMT per capita in the AMBAG region. Impacts related to inefficient, unnecessary, or wasteful direct or indirect energy consumption would be similar to the 2045 MTP/SCS, but would be less than significant, as under the 2045 MTP/SCS.

g. Geology and Soils

This alternative assumes the same growth in population, jobs, and housing numbers, and the same land use pattern, as the 2045 MTP/SCS. Geology and soils impacts resulting from future land use development under this alternative would therefore be identical to land use-related impacts from the 2045 MTP/SCS.

Impacts related to erosion and loss of topsoil from construction of transportation projects would be less than significant pursuant to compliance with existing regulations, similar to the 2045 MTP/SCS. Because this alternative does not include as many new interchanges, bridges, roads and fixed facilities, there would be less exposure of new structures to hazardous geologic conditions, including liquefaction, expansive soils, landslides, ground-shaking, and flooding. Similar to the proposed 2045 MTP/SCS, this alternative could replace inadequate existing structures, such as bridges, and would reduce the potential for these existing

structures and people using these structures to be harmed by geologic hazards and would be the same as the proposed 2045 MTP/SCS. Implementation of this alternative would involve less ground disturbance associated with transportation improvements as under the 2045 MTP/SCS. Development under the Alternative Transportation Modes Alternative would also be required to comply with the California Building Code and requirements set forth by the Alquist Priolo Zone Act. Therefore, impacts would be less compared to the 2045 MTP/SCS and impacts would remain less than significant.

Impacts to paleontological resources would be reduced under this alternative compared to the 2045 MTP/SCS because this alternative would involve less construction-related ground disturbance. Mitigation measures provided to reduce impacts to paleontological resources for the 2045 MTP/SCS would also be required to be implemented for this alternative. Impacts would remain significant and unavoidable, similar to the 2045 MTP/SCS. Projects located within mineral resource zones would still be required to comply with the California Surface Mining and Reclamation Act, as would all projects under the 2045 MTP/SCS, and as such impacts would remain less than significant, as under the 2045 MTP/SCS.

Overall, impacts to geology and soils and mineral resources would be slightly less compared to the 2045 MTP/SCS and would remain less than significant. Impacts to paleontological resources would be significant and unavoidable and would be reduced under this alternative.

h. Greenhouse Gas Emissions

This alternative assumes the same growth in population, jobs, and housing numbers, and the same land use pattern, as the 2045 MTP/SCS. GHG emissions generated from land use development would therefore be the same under this alternative as it would be for the 2045 MTP/SCS.

Because this alternative would result in less construction of vehicular transportation infrastructure, such as the construction of new interchanges and roadway widening, overall GHG emissions associated with construction activities would be less when compared to the 2045 MTP/SCS. However, as noted under *Transportation* below, VMT would be higher under Alternative 2. Although this alternative was designed to reduce VMT by providing or promoting alternative transportation modes, it did so by eliminating many roadway improvement projects, some of which would reduce congested and total VMT. As such, the overall VMT within the AMBAG region would increase under Alternative 2, resulting in an increase in GHG emissions. Table 7-4 compares the total GHG emissions and the per capita GHG emissions for Alternative 2 and the 2045 MTP/SCS.

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Table 7-4 Alternative 2 Net Change in Total GHG Emissions

Scenario	Alternative 2	2045 MTP/SCS
On-Road Mobile Emissions from VMT (MT CO ₂ e/year)	1,876,179	1,868,236
Land Use Emissions from Table 4.8-1 ¹ (MT CO ₂ e/year)	2,283,582	2,283,582
Total	4,159,762	4,151,818
Population (persons)	869,776	869,776
Per Capita (MT CO ₂ e per service population per year)	4.78	4.77

MT = metric tons; CO₂ = carbon dioxide; CO₂e = carbon dioxide equivalent

¹Refer to Section 4.8, *Greenhouse Gas Emissions/Climate Change*

Source: Total GHG emissions were calculated by AMBAG. Refer to 2045 MTP/SCS Chapter 5 and Appendix F for complete methodology.

As shown in Table 7-4, Alternative 2 would increase total GHG emissions from 4,151,818 MT CO₂e/year for the 2045 MTP/SCS to 4,159,762 MT CO₂e/year, an increase of 7,944, or 0.19 percent. Per capita emissions would increase from 4.77 to 4.78 MT CO₂e per service population per year, an increase of 0.21 percent. The increase in both total and per capita GHG emissions is negligible (less than a one percent change) such that GHG impacts would be similar as compared to the 2045 MTP/SCS. Impacts would remain significant and unavoidable.

i. Hazards and Hazardous Materials

This alternative assumes the same growth in population, jobs, and housing numbers, and the same land use pattern, as the 2045 MTP/SCS. Hazards and hazardous materials impacts from land use development would therefore be identical to the 2045 MTP/SCS under this alternative.

This alternative would result in fewer highway and local streets projects being constructed, thereby reducing hazardous material use, storage and transportation resulting from construction of larger scale transportation projects. However, the volume of hazardous materials being transported to support land use development in the region would remain the same. Because the Alternative Transportation Modes Alternative would be subject to existing regulations and programs, impacts relating to routine transport, use, or disposal of hazardous materials; risk of upset and accident conditions; emissions within one-quarter mile of a school; airport hazards; and interference with emergency response and evacuation plans would be less than significant, similar to 2045 MTP/SCS. Overall hazards and hazardous materials impacts would be slightly less under this alternative as under the 2045 MTP/SCS.

j. Hydrology and Water Quality

This alternative assumes the same growth in population, jobs, and housing numbers, and the same land use pattern, as the 2045 MTP/SCS. Hydrology and water quality impacts from land use development would therefore be identical to the 2045 MTP/SCS under this alternative.

Because this alternative assumes the same growth and land use pattern as the 2045 MTP/SCS, land use development would result in the same area of impervious surfaces as under the 2045 MTP/SCS. Infill development would generate runoff that would include urban pollutants similar such as heavy metals from auto emissions, oil, and grease, similar to the 2045 MTP/SCS. Therefore, impacts to water quality would be similar to water quality impacts of the 2045 MTP/SCS. This alternative would result in less ground disturbance from transportation infrastructure projects than the 2045 MTP/SCS because this alternative would not include construction of some transportation projects, including roadway widening projects and roadway extension projects. Therefore, this alternative would result in less water quality impacts resulting from construction-related erosion and sedimentation and would generate less water demand for dust suppression activities. These impacts would be less than significant pursuant to compliance with existing regulations, similar to the 2045 MTP/SCS.

Transportation improvements under this alternative, as under the 2045 MTP/SCS, would result in an increase of overall impervious surface area throughout the AMBAG region compared to existing conditions. Compared to the 2045 MTP/SCS, this alternative would result in less roadway impervious surface area. Nonetheless, new roadways or road widening projects would result in new impervious surfaces in the region that would generate significant adverse impacts to surface water quality. Pollutants and chemicals from urban activities would potentially flow into nearby bodies of water and could result in adverse impacts to water quality. Construction projects that would disturb more than one acre, such as roadway widening and new roadways, would be subject to regulations under the Caltrans Statewide NPDES permit. As such, compliance with regulations under the NPDES permit would reduce impacts from new impervious surfaces created from new transportation projects to less than significant.

Operation of this alternative, as under the 2045 MTP/SCS, would be required to implement best management practices as listed in the NPDES program to reduce post project stormwater flows to be the same or less than pre project stormwater flows. Transportation projects under this alternative would be required to comply with applicable regulations such as NPDES permits to reduce discharge of pollutants and as such, impacts would be less than significant. The Alternative Transportation Modes Alternative would be anticipated to result in impacts to water quality that is less compared to the 2045 MTP/SCS. Water quality impacts would remain less than significant, pursuant to compliance with existing regulations.

Overall, hydrology and water quality impacts would be less under the Alternative Transportation Modes as the 2045 MTP/SCS.

k. Land Use

As with the 2045 MTP/SCS, this alternative would not be anticipated to divide an established community, as development would occur consistent with 2045 MTP/SCS land use patterns and primarily within existing communities. As noted in Section 4.11, *Land Use*, the 2045 MTP/SCS includes a list of planned and programmed projects including local and regional capital improvements that have been anticipated or accounted for in local general plans and

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regional, statewide, and federal transportation improvement programs. In addition, the objective of the 2045 MTP/SCS is to provide for a comprehensive transportation system of facilities and services that meets public need for the movement of people and goods, and that is consistent with the social, economic, and environmental goals and policies of the region. The Alternative Transportation Modes Alternative would prioritize capital improvements associated with alternative transportation modes and would include vehicular capital improvements, as funding allows. Thus, the Alternative Transportation modes alternative would not provide all possible vehicular capital improvements anticipated within applicable general plans and transportation improvement programs.

Development under the Alternative Transportation Modes Alternative would follow the same land use pattern as the 2045 MTP/SCS and would therefore result in the same land use-related impacts. Development under this alternative would still have the potential to conflict with land use plans, policies, and programs and would continue to require mitigation. As such, it would have similar conflicts with State and local policies and regulations adopted for the purpose of avoiding or mitigating environmental effects. Under this alternative, the overall impacts on land use would be similar under this alternative when compared to the 2045 MTP/SCS and would remain less than significant.

I. Noise

This alternative assumes the same growth in population, jobs, and housing numbers, and the same land use pattern, as the 2045 MTP/SCS. Noise impacts from land use development would therefore be similar to the 2045 MTP/SCS under this alternative.

From a programmatic perspective, smaller transportation infrastructure projects would result in less construction activity under the Alternative Transportation Modes Alternative. This would reduce temporary noise impacts throughout the AMBAG region. In addition, noise from infill or TOD projects would be similar under the Alternative Transportation Modes Alternative and construction-related noise impacts on adjacent sensitive receivers would also be similar. Impacts from noise would continue to be significant, as under the 2045 MTP/SCS.

Although the scale of transportation projects would be reduced as compared to the 2045 MTP/SCS, traffic volumes would increase and would result from regional growth that would continue to occur. Whether noise impacts would be greater or less than those anticipated under the 2045 MTP/SCS remains dependent on site specific considerations that cannot currently be known. Regionally, the difference in VMT between the 2045 MTP/SCS and the Alternative Transportation Modes is not enough to noticeably change overall noise levels in the region. Mobile source noise levels resulting from traffic would also be similar under the Alternative Transportation Modes Alternative as a reduction in traffic volumes cannot be reasonably assumed as a result of construction of alternative modes of transportation infrastructure when compared to the 2045 MTP/SCS. Impacts would remain significant, as under the 2045 MTP/SCS.

Because most rail improvements planned under the 2045 MTP/SCS would not be implemented under this alternative, the potential for increased rail noise would be reduced under the Alternative Transportation Modes Alternative.

Construction and operation of future development under this alternative could be located in close proximity to a public airport or private airstrip, as under the 2045 MTP/SCS, and would result in exposure of people residing or working in the area to excessive noise levels. As under the 2045 MTP/SCS, this alternative could result in the exposure of people residing or working near public airports or private airstrips to excessive noise levels. Mitigation measures identified in Section 4.12, *Noise*, would continue to be required under this alternative. Impacts would be similar as under the 2045 MTP/SCS and would remain significant and unavoidable.

Construction vibration of transportation projects or land use projects under this alternative could result in excessive groundborne vibration. Some cities and counties in the AMBAG region include specific regulations in their municipal code to reduce construction vibration impacts. As under the 2045 MTP/SCS, this alternative would include mitigation to reduce physical impacts due to vibration and as such, impacts would be similar to the 2045 MTP/SCS and would remain significant and unavoidable.

Overall, noise-related impacts across the region would be similar to the 2045 MTP/SCS, and would continue to be significant and unavoidable.

m. Population and Housing

This alternative assumes the same growth in population, jobs, and housing numbers, and the same land use pattern, as the 2045 MTP/SCS. Population and housing impacts from land use development would therefore be identical to the 2045 MTP/SCS under this alternative.

The Alternative Transportation Modes Alternative would result in the same population increase in the region by 2045 as the proposed 2045 MTP/SCS. As such, impacts related to population growth would be to the same as for the 2045 MTP/SCS and would continue to be less than significant. Land uses envisioned would be infill or TOD, displacement-related impacts would be similar under this alternative when compared to the 2045 MTP/SCS. Active transportation projects under this alternative would be prioritized; however, there is still the potential for vehicular projects, such as bridge replacement and roadway widening projects, to occur as funding allows. Therefore, impacts on population and housing from displacement resulting from transportation projects would be slightly less than 2045 MTP/SCS impacts. This impact would be less than significant. Overall population and housing impacts would be slightly less compared to the 2045 MTP/SCS.

n. Public Services, Recreation, and Utilities

Implementation of this alternative would result in the same population increase in the region by 2045 as the proposed 2045 MTP/SCS. As such, expected demand on public services, recreation, and utilities would be similar to the 2045 MTP/SCS and may require the construction of new or expanded facilities to meet demand. This impact would continue to

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be significant and unavoidable, as it is for the 2045 MTP/SCS. This alternative would emphasize active transportation projects, some of which would serve as a new recreational resource, such as the Scenic Pathway Pedestrian Trail improvements or the Monterey Bay Sanctuary Scenic Trail – Moss Landing bikeway and bridge in Monterey County, thereby decreasing demand and associated impacts to existing recreational facilities than compared to the 2045 MTP/SCS. This impact would be less than significant. Overall, impacts to public services, recreation, and utilities would be similar compared to the 2045 MTP/SCS, and would remain significant and unavoidable.

Increases to water demand are primarily associated with increased population levels. This alternative assumes the same population growth and land use pattern as the 2045 as the MTP/SCS. Therefore, water supply system demands would be similar. As such, future water demand associated with this alternative would be similar to water demand of the 2045 MTP/SCS. This impact, which is significant and unavoidable for the 2045 MTP/SCS, would be similar under the Alternative Transportation Modes Alternative, and mitigation measures under the 2045 MTP/SCS would still apply. Impacts would remain significant and unavoidable.

o. Transportation

This alternative assumes the same growth in population, jobs, and housing numbers, and the same land use pattern, as the 2045 MTP/SCS. Transportation impacts from land use development would therefore be identical to the 2045 MTP/SCS under this alternative.

Alternative 2 would generate 20,126,625 daily VMT in 2045 compared to 20,032,142 daily VMT for the 2045 MTP/SCS - an increase of 94,483 VMT, or 0.47 percent. Although this alternative was designed to reduce VMT by providing or promoting alternative transportation modes, it did so by eliminating many roadway improvement projects, some of which would reduce congested and total VMT. This increase is negligible (less than a one percent change) such that VMT would be similar as compared to the 2045 MTP/SCS.

Under the Alternative Transportation Modes Alternative, projects to increase bus capacity on congested facilities and the frequency of bus lines, such as the commuter/subscriber bus program or signal priority/pre-emption for buses in Monterey and San Benito counties, could be implemented. Compared to the 2045 MTP/SCS, this alternative would slightly increase transit ridership from 38,078 riders under the 2045 MTP/SCS to 38,406 riders under this alternative. While transit ridership would increase, this alternative would include transit improvements and operation and maintenance projects that would serve to accommodate new transit riders. Under this alternative, increased transit riders would be accommodated by transit improvements envisioned under this alternative. Therefore, this alternative would not result in a significant impact due to conflicts with any programs addressing the circulation system and would not substantially disrupt transit service. As such, impacts would be less than significant, similar to the 2045 MTP/SCS.

Overall, the Alternative Transportation Modes Alternative would result in similar daily VMT in the AMBAG region compared to the 2045 MTP/SCS. Thus, overall, impacts to

transportation and circulation would be similar under the Alternative Transportation Modes Alternative, and impacts would remain significant and unavoidable.

p. Tribal Cultural Resources

This alternative assumes the same growth in population, jobs, and housing numbers, and the same land use pattern, as the 2045 MTP/SCS. Therefore, ground disturbance for land use and development would be comparable between this alternative and the 2045 MTP/SCS. Tribal cultural resources impacts from land use development would therefore be identical to the 2045 MTP/SCS under this alternative.

Implementation of this alternative would involve less ground disturbance associated with vehicular transportation improvements than would occur under the 2045 MTP/SCS. As such, the potential to disturb tribal cultural resources, including ancestral remains and sacred sites, would be reduced under this alternative. Future projects would be required to comply with AB 52, which would encourage tribal consultation with local California Native American tribes and require the identification of project specific substantial adverse effects on tribal cultural resources and appropriate project specific mitigation measures. If it is determined that a specific project would result a substantial adverse change in the significance of a tribal cultural resource, the impact would be significant. This significant impact would occur for projects under the Alternative Transportation Modes Alternative, as it would for the 2045 MTP/SCS. Therefore, impacts would be significant and unavoidable, as they would be for the 2045 MTP/SCS, but would be reduced compared to the 2045 MTP/SCS due to the reduced level of ground disturbance.

q. Wildfire

This alternative assumes the same growth in population, jobs, and housing numbers, and the same land use pattern, as the 2045 MTP/SCS. Wildfire impacts from land use development would therefore be identical to the 2045 MTP/SCS under this alternative.

The land use pattern under this alternative, as under the 2045 MTP/SCS, would construct and maintain development within and near wildland urban interface areas and could result in exacerbated wildfire risk. Exacerbated wildfire risk would result in additional impacts related to flooding, landslides, and other associated hazards. Under this alternative, mitigation would still be required, however, impacts would still be significant and unavoidable, as under the 2045 MTP/SCS.

Under the Alternative Transportation Modes Alternative, transportation projects would not involve developing residential uses that would include occupants. While some transportation projects may include office or maintenance structures, occupation would be temporary and would not be situated in very high FHSZs. Development of these structures, under this alternative, would still be required to comply with the California Fire Code, and mitigation would still be required. Transportation projects generally do not require fuel breaks or involve infrastructure that could potentially exacerbate wildfire. Therefore, even though fewer transportation projects would be constructed under this alternative compared to the

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2045 MTP/SCS, wildfire impacts would be similar. Impacts would remain significant and unavoidable with mitigation, as under the 2045 MTP/SCS.

7.5 Alternative 3: Infill and Transit Focus

7.5.1 Description

This alternative is designed to reduce VMT by locating the places where people work and live within urban centers and close to regional transit. This alternative assumes the same total growth in population, jobs, and housing numbers as the 2045 MTP/SCS, but with more compact and mixed land uses. Overall, this alternative incorporates less dispersed land use and development than the proposed MTP/SCS. This alternative includes a more compact growth footprint and increased use of regional and interregional transit service to generate an increase in regional and interregional transit ridership and corresponding decrease in VMT. For instance, this alternative relies on a higher amount of housing, especially near regional and interregional transit, than the market currently supports. This alternative also assumes increased telecommuting for those industries where telecommuting is feasible, such as in financial and professional services and/or public sector jobs. This alternative assumes more investment (\$2.2 billion) in transit infrastructure and services and less investment in local streets, roads, and highways compared to the proposed 2045 MTP/SCS. Transportation projects in this alternative would include Highway 68 Corridor Transit Improvements (MON-MST019-MST), the TAMC Monterey Branch Line Light Rail Phase I (MON-TAMC001-TAMC), the Rail Extension to Monterey County – Phase 2 (MON-TAMC014), Pajaro/Watsonville Station (MON-TAMC014-TAMC), and the TAMC Rail Extension to Monterey County – Phase 3, Castroville Station (MON-TAMC015-TAMC015) in Monterey County; increased service of the passenger rail to Santa Clara County (SB-LTA-A53) in San Benito County; and the implementation of public transit on the Watsonville – Santa Cruz Rail Corridor (SC-RTC-P02-RTC) in Santa Cruz County.

7.5.2 Impact Analysis

a. Aesthetics and Visual Resources

This alternative would include greater development intensities around transit and within urban centers. Higher density housing in transit areas and urban centers would have the potential to impact scenic vistas on designated scenic highways, along with the gradual transformation toward a more urban character would occur in many parts of the AMBAG region. Land use development envisioned under this alternative would be denser than the proposed 2045 MTP/SCS and would result in greater aesthetic impacts to scenic resources in the developed portions of the AMBAG region. As land use development would be denser in infill areas, there would be less development in scenic viewshed areas and this alternative would result in fewer changes in character from rural to urban. Impacts to scenic resources would be less under this alternative compared to the 2045 MTP/SCS. Nevertheless, impacts related to visual character would be significant and unavoidable as with the 2045 MTP/SCS.

Implementation of transportation projects under this alternative would result in fewer visual impacts as compared to the 2045 MTP/SCS, because many of the proposed interchanges, bridges and roadway extensions would not be constructed; however, rail facilities, such as the Coast Rail Service and Around the Bay Rail, would be constructed. While the overall level of impact resulting from combined transit improvements and land use projects would be less when compared to the 2045 MTP/SCS, impacts would remain significant and unavoidable.

b. Agriculture and Forestry Resources

Land use development under this alternative would further concentrate higher density housing in transit and urban areas. Impacts from land use projects to agricultural resources would be less than impacts under the 2045 MTP/SCS, as development would not extend into agricultural land to the same extent. This impact would be less than for the proposed 2045 MTP/SCS, but would remain significant and unavoidable because some development on Important Farmland could still occur.

This alternative would result in fewer transportation infrastructure projects being constructed, including roadway widening and other projects that could directly convert agricultural land to non-agricultural use. This alternative would emphasize development of transit and higher density land uses rather than transportation infrastructure projects envisioned under the 2045 MTP/SCS and would result in fewer roadway projects that could extend into agricultural uses. Because transit projects would be prioritized, roadway widening would be less likely to occur under this alternative. Mitigation would still be required under this alternative and would further reduce impacts. The impact to agricultural resources resulting from transportation improvements under this alternative would be less than under the 2045 MTP/SCS, but would remain significant and unavoidable because some development on Important Farmland could still occur.

Forestland in the AMBAG region is located primarily in the Santa Cruz County area. This alternative would result in less dispersed land use and development than the 2045 MTP/SCS. As such, less development would occur in forestland and impacts would be reduced when compared to the 2045 MTP/SCS. Impacts would be less than significant, as they are for the 2045 MTP/SCS.

c. Air Quality

Under this alternative, the land use development pattern would have higher densities in urban areas near transit. As such, more sensitive receptors would be exposed to health risks from TACs during construction or operation. Long term operational impacts related to PM₁₀ and exposing sensitive receptors would be similar to the 2045 MTP/SCS, as shown in Table 7-5. As a result, exposure to substantial hazardous air pollutant concentrations and objectionable odors would remain significant and unavoidable, as under the 2045 MTP/SCS.

Implementation of this alternative would reduce short-term air quality impacts from construction activity. As shown in Table 7-5, ROG, NO_x, and CO emissions would be lower compared to the proposed 2045 MTP/SCS due to a decrease in VMT (see also Modeling

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Methodology in Appendix F to the 2045 MTP/SCS). However, PM₁₀ and SO_x emissions would remain the same.

Table 7-5 Regional Emissions Analysis for Alternative 3

Scenario	VMT	ROG Emissions (tons/day)	NO _x Emissions (tons/day)	PM ₁₀ Emissions (tons/day) ¹	CO Emissions (tons/day)	SO _x Emissions (tons/day)
2045 MTP/SCS	20,032,142	1.72	3.71	1.15	17.51	0.05
Alternative 3	19,904,230	1.71	3.69	1.15	17.45	0.05

VMT = vehicle miles traveled; ROG = reactive organic gases; NO_x = nitrous oxide; PM₁₀ = particulate matter with a diameter of 10 microns or less; CO = carbon monoxide; SO_x = sulfur oxide

¹ PM₁₀ includes tire wear and brake wear emissions.

Source: On-road motor vehicle emissions were calculated by AMBAG using EMFAC2017. Refer to 2045 MTP/SCS Chapter 5 and Appendix G for complete methodology.

The lower emissions would be due to lower VMT expected under this alternative. Impacts, however, would remain significant and unavoidable, as under the 2045 MTP/SCS. Overall, air quality impacts would therefore be less under this alternative when compared to the 2045 MTP/SCS.

d. Biological Resources

This alternative would further emphasize an infill approach to land use and housing. As with the proposed 2045 MTP/SCS, development would primarily occur in already urbanized areas and would not result in development of areas that provide habitat for special status plant and animal species. Implementation of this alternative would also reduce impacts to biological resources resulting from transportation improvement projects, as fewer roadway extensions, widening projects and creek crossings would occur under this alternative. Overall impacts to special status plants, animals, wetlands and/or riparian habitat and wildlife movement outside developed urban areas would therefore be reduced when compared the 2045 MTP/SCS. However, impacts would remain significant and unavoidable.

e. Cultural Resources

As described in Section 4.5, *Cultural Resources*, some of the 2045 MTP/SCS projects may be located in proximity to historical resources or include repair or replacement of potentially historical structures (e.g., bridges). Under this alternative, many of the projects that would include repair or replacement of potentially historic resources would still occur, such as the Gonzales River Road Bridge Replacement and Johnson Road Bridge Replacement in Monterey County. Impacts to historical resources would therefore be similar compared to the 2045 MTP/SCS. Land use development impacts under this alternative could be greater as there is greater potential to redevelop and demolish historic structures in urbanized areas.

Land use development and ground disturbance activities would be less than under the 2045 MTP/SCS. As such, the potential for uncovering known or unknown archaeological resources

as a result of land use development would be reduced under this alternative. Implementation of this alternative would involve less ground disturbance associated with transportation improvements than would occur under the 2045 MTP/SCS, as fewer road widening projects and other ground-disturbing transportation infrastructure projects would be developed. As such, impacts to archaeological resources from transportation projects would also be reduced when compared to the 2045 MTP/SCS. Although overall archaeological resources impacts would be reduced, the potential would remain for unearthing known or previously unidentified resources. As such, impacts would remain significant and unavoidable.

f. Energy

Energy use will increase over time as the result of regional socioeconomic (population and employment) growth, regardless of implementation of the 2045 MTP/SCS. The Infill and Transit Focus Alternative would rely on telecommuting which would result in increased energy use in areas slated for development but would reduce energy use in office development areas. Additionally, an emphasis on telecommuting would reduce energy use from vehicles as more people would not be driving to and from office areas. As discussed in Section 4.6, *Energy*, the 2045 MTP/SCS would not result in inefficient, unnecessary, or wasteful direct or indirect consumption of energy, and would be consistent with applicable energy conservation policies. Because this alternative would result in less construction of transportation infrastructure, such as roadway widening, overall energy use associated with transportation construction activities would be reduced when compared to the 2045 MTP/SCS. This alternative would not include many of the capital improvements envisioned under the proposed 2045 MTP/SCS that would improve transportation efficiency and reduce regional energy demand. Because this alternative would reduce vehicular travel, energy use would be reduced. Impacts related to inefficient, unnecessary, or wasteful direct or indirect energy consumption would be reduced when compared to the 2045 MTP/SCS, and would similarly remain less than significant.

g. Geology and Soils

Similar to the proposed 2045 MTP/SCS, this alternative would replace inadequate existing structures, such as existing buildings and bridges, and would reduce the potential for these existing structures and people using these structures to be harmed by geologic hazards and would be the same as the proposed 2045 MTP/SCS. Development under the Infill and Transit Focus Alternative would also be required to comply with the California Building Code and requirements set forth by the Alquist Priolo Zone Act. The land use development pattern under this alternative would be higher density, which would increase seismic hazards and potential risks to people. Overall, seismic related impacts would be similar to the 2045 MTP/SCS. Implementation of mitigation measures, as under the 2045 MTP/SCS, would still be required and impacts would remain significant and unavoidable.

Impacts related to erosion and loss of topsoil would be less than significant pursuant to compliance with existing regulations, similar to the 2045 MTP/SCS. Because this alternative does not include as many new interchanges, bridges, roads and fixed facilities, there would be less exposure of new structures to hazardous geologic conditions, including liquefaction,

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expansive soils, landslides, ground-shaking and flooding. Implementation of this alternative would also involve less ground disturbance associated with transportation improvements than would occur under the 2045 MTP/SCS, as construction of infrastructure for transit would disturb a smaller area. Development under the Infill and Transit Focus Alternative would also be required to comply with the California Building Code and requirements set forth by the Alquist Priolo Zone Act. Therefore, impacts would be less compared to the 2045 MTP/SCS and impacts would remain less than significant.

Impacts to paleontological resources would be less under this alternative compared to the 2045 MTP/SCS as development outside of urbanized areas would be less, but would still result in significant and unavoidable impacts, similar to the 2045 MTP/SCS. Projects located within mineral resource zones would still be required to comply with the California Surface Mining and Reclamation Act, as would all projects under the 2045 MTP/SCS, and as such impacts would remain less than significant, as under the 2045 MTP/SCS. Therefore, impacts to geology and soils and mineral resources would be reduced compared to the 2045 MTP/SCS and would remain less than significant. Impacts to paleontological resources would be significant and unavoidable but would be reduced under this alternative.

h. Greenhouse Gas Emissions

The Infill and Transit Focus Alternative would result in fewer impacts associated with GHG emissions during construction activities for transit projects as the scale of construction would be smaller. Table 7-6 compares the total GHG emissions and the per capita GHG emissions for Alternative 3 and the 2045 MTP/SCS. As shown therein, Alternative 3 would decrease total GHG emissions from 4,151,818 MT CO₂e/year for the 2045 MTP/SCS to 4,139,793 MT CO₂e/year, a decrease of 12,025, or 0.29 percent. Per capita emissions would decrease from 4.77 to 4.76 MT CO₂e per service population per year, a decrease of 0.01 percent. This decrease is negligible (less than a one percent change) such that GHG impacts would be similar as compared to the 2045 MTP/SCS. Impacts would remain significant and unavoidable, as they are for the 2045 MTP/SCS.

Table 7-6 Alternative 3, Net Change in Total GHG Emissions

Scenario	Alternative 3	2045 MTP/SCS
On-Road Mobile Emissions from VMT (MT CO ₂ e/year)	1,856,210	1,868,236
Land Use Emissions from Table 4.8-1 ¹ (MT CO ₂ e/year)	2,283,582	2,283,582
Total	44,139,793	4,151,818
Population (persons)	869,776	869,776
Per Capita (MT CO ₂ e per service population per year)	4.76	4.77

MT = metric tons; CO₂ = carbon dioxide; CO₂e = carbon dioxide equivalent

¹ Refer to Section 4.8, *Greenhouse Gas Emissions/Climate Change*

Source: Total GHG emissions were calculated by AMBAG. Refer to 2045 MTP/SCS Chapter 5 and Appendix F for complete methodology.

i. Hazards and Hazardous Materials

This alternative would result in fewer infrastructure projects being constructed, thereby reducing hazardous material use, storage and transportation resulting from construction of those projects. However, the volume of hazardous materials being transported to support land use development in the region would remain the same. Because the Infill and Transit Focus Alternative would be subject to existing regulations and programs, impacts relating to routine transport, use, or disposal of hazardous materials; risk of upset and accident conditions; emissions within one-quarter mile of a school; airport hazards; and interference with emergency response and evacuation plans would be less than significant, similar to 2045 MTP/SCS. Overall hazards and hazardous materials impacts would be similar under this alternative as under the 2045 MTP/SCS.

j. Hydrology and Water Quality

This alternative would further emphasize an infill approach to land use and housing. As such, land development would result in fewer impervious surfaces than would be expected under the 2045 MTP/SCS. Nonetheless, infill development would generate runoff that would include urban pollutants such as heavy metals from auto emissions, oil, and grease, similar to projects under the 2045 MTP/SCS. Therefore, impacts to water quality would be less than those of the 2045 MTP/SCS because less development would occur that would result in additional impervious surfaces. Infill development would generate runoff that would include urban pollutants similar such as heavy metals from auto emissions, oil, and grease, similar to the 2045 MTP/SCS. Therefore, impacts to water quality would be similar to water quality impacts of the 2045 MTP/SCS.

This alternative would result in similar transportation infrastructure projects being constructed as the 2045 MTP/SCS. Therefore, this alternative would result in similar water quality impacts resulting from construction-related erosion and sedimentation and would generate the same water demand for dust suppression activities. These impacts would remain less than significant pursuant to compliance with existing regulations, similar to the 2045 MTP/SCS.

Transportation improvements under this alternative, as under the 2045 MTP/SCS, would result in an increase of overall impervious surface area throughout the AMBAG region. New bridges and rail projects would result in new impervious surfaces in the region that would generate significant adverse impacts to surface water quality. Pollutants and chemicals from urban activities would potentially flow into nearby bodies of water and could result in adverse impacts to water quality. Construction projects that would disturb more than one acre, such as new bridges, would be subject to regulations under a NPDES permit. As such, compliance with regulations under the NPDES permit would reduce impacts from new impervious surfaces created from new transportation projects to less than significant. Operation of this alternative, as under the 2045 MTP/SCS, would be required to implement best management practices as listed in the NPDES program to reduce post project stormwater flows to be the same or less than pre project stormwater flows. Transportation projects under this alternative would be required to comply with applicable regulations such as NPDES permits

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to reduce discharge of pollutants and as such, impacts would be less than significant. The Infill and Transit Focus Alternative would be anticipated to result in impacts to water quality that are overall comparable to the 2045 MTP/SCS; water quality impacts would remain less than significant, pursuant to compliance with existing regulations.

Overall hydrology and water quality impacts would be similar under the Infill and Transit Focus Alternative as the 2045 MTP/SCS and impacts would remain significant and unavoidable.

k. Land Use

As noted in Section 4.11, *Land Use*, the 2045 MTP/SCS includes a list of planned and programmed projects including local and regional capital improvements that have been anticipated or accounted for in local general plans and regional, statewide, and federal transportation improvement programs. Higher density housing in urbanized areas, primarily infill, would be anticipated to result in greater conflicts with local land use plans as this alternative would prioritize higher density beyond existing growth projections and would be inconsistent with growth projections of local General Plans, Local Coastal Plans, and Specific Plans.

Development under this alternative would be concentrated in urbanized areas and would consist of primarily infill projects. As such, the land use pattern under this alternative would not result in the physical division of communities and impacts would be similar to the 2045 MTP/SCS.

Development under this alternative could conflict with land use plans, policies, and programs and would continue to require mitigation. As such, implementation of this alternative would conflict with State and local policies and regulations adopted for the purpose of avoiding or mitigating environmental effects.

The Infill and Transit Focus Alternative would not provide vehicular capital improvements anticipated within applicable general plans and transportation improvement programs; however, it would result in greater potential to guide development to meet social, economic, and environmental goals and policies of the region as anticipated under the 2045 MTP/SCS.

Under this alternative, impacts related to physically dividing an established community would be similar and impacts due to a conflict with any land use plan, policy, or regulation would be greater when compared to the 2045 MTP/SCS and would remain less than significant.

l. Noise

Land use development under this alternative would occur primarily in infill and TOD areas. As such, increased noise levels from increased transit onto development in the area would be greater than under the 2045 MTP/SCS and would result in more sensitive receivers exposed to greater sound levels. Increased ambient noise levels for sensitive receivers in these areas would be significant and unavoidable under this alternative, as it is for the 2045 MTP/SCS.

From a programmatic perspective, this alternative would result in less construction activity. This would reduce temporary noise impacts throughout the AMBAG region.

Although vehicular transportation projects would not be prioritized in this alternative and noise would generally be reduced as compared to the 2045 MTP/SCS, cumulative regional traffic volumes would increase regardless of implementation of the 2045 MTP/SCS or this alternative. Whether noise impacts would be greater or less than those anticipated under the 2045 MTP/SCS remains dependent on site specific considerations that cannot currently be known. Regionally, the difference in VMT between the 2045 MTP/SCS and the Infill and Transit Focus Alternative is not enough to noticeably change overall noise levels in the region. Mobile source noise levels resulting from traffic would be slightly less under the Infill and Transit Focus Alternative than the 2045 MTP/SCS as this alternative would result in less VMT.

Because additional transit improvements would be implemented under this alternative, the potential for increased transit noise would be increased under the Infill and Transit Focus Alternative.

Construction and operation of future development under this alternative could be located in close proximity to a public airport or private airstrip, as under the 2045 MTP/SCS, and would result in exposure of people residing or working in the area to excessive noise levels. As under the 2045 MTP/SCS, this alternative could result in the exposure of people residing or working near public airports or private airstrips to excessive noise levels. Mitigation measures identified in Section 4.12, *Noise*, would continue to be required under this alternative and impacts would be similar as under the 2045 MTP/SCS and would remain significant and unavoidable.

Construction vibration of transportation projects or land use projects under this alternative could result in excessive groundborne vibration. Some cities and counties in the AMBAG region include specific regulations in their municipal code to reduce construction vibration impacts. As under the 2045 MTP/SCS, this alternative would include mitigation to reduce physical impacts due to vibration and as such, impacts would be similar to the 2045 MTP/SCS and would remain significant and unavoidable.

Overall, noise-related impacts across the region would be similar to the 2045 MTP/SCS, and would continue to be significant and unavoidable.

m. Population and Housing

The Infill and Transit Focus Alternative would result in the same population increase in the region by 2045 as the proposed 2045 MTP/SCS. As such, impacts related to population growth would be to the same as for the 2045 MTP/SCS and would continue to be significant and unavoidable. Temporary displacement as a result of more infill projects could occur; however, this displacement would be offset by an increase in housing units. Compliance with regulations under the Federal Uniform Relocation and Real Property Acquisition Policies Act would further reduce impacts to less than significant, as under the 2045 MTP/SCS. Overall population and housing impacts would be similar to the 2045 MTP/SCS.

n. Public Services, Recreation, and Utilities

Implementation of this alternative would result in the same population increase in the region by 2045 as the proposed 2045 MTP/SCS. As such, expected demand on public services and recreation would be similar to the 2045 MTP/SCS, and may require the construction of new or expanded facilities to meet demand. This impact would remain significant and unavoidable, as it is for the 2045 MTP/SCS. This alternative would further emphasize on transit projects and higher density, infill housing. Higher density housing in transit and urban areas would reduce impacts related to the provision of public services, since services already exist in these areas. Thus, impacts to utilities would be reduced compared to the 2045 MTP/SCS, but would remain significant and unavoidable.

Increases to water demand are primarily associated with increased population levels. This alternative assumes the same population growth and land use pattern that would increase density compared to the 2045 MTP/SCS. Water supply system demands would be similar as population growth would be the same. Demand would increase in urbanized areas where water infrastructure already exists. As such, future water demand associated with this alternative would be similar to water demand of the 2045 MTP/SCS. This impact, which is significant and unavoidable for the 2045 MTP/SCS, would be similar under this alternative, and mitigation measures under the 2045 MTP/SCS would still apply. Impacts would remain significant and unavoidable.

o. Transportation

This alternative incorporates less dispersed land use and development and a more compact growth footprint than the proposed MTP/SCS, and increased use of regional and interregional transit service to generate an increase in regional and interregional transit ridership and corresponding decrease in VMT. Alternative 3 would generate 19,904,230 daily VMT in 2045 compared to 20,032,142 daily VMT for the 2045 MTP/SCS – a decrease of 127,912, or 0.64 percent. This decrease is negligible (less than a one percent change) such that VMT would be similar as compared to the 2045 MTP/SCS. Overall, impacts related to transportation would be similar under this alternative, and would remain significant and unavoidable.

p. Tribal Cultural Resources

Under this alternative, land use development would occur in infill areas to a greater extent than the 2045 MTP/SCS. Higher density development within already urbanized areas would reduce ground disturbance, as less disturbance would occur outside these areas. Implementation of this alternative would also involve less ground disturbance associated with transportation improvements than would occur under the 2045 MTP/SCS. As such, the potential to disturb tribal cultural resources, including ancestral remains and sacred sites, would decrease under this alternative. Future projects would still be required to comply with AB 52, which would encourage tribal consultation with local California Native American tribes and require the identification of project specific substantial adverse effects on tribal cultural resources and appropriate project specific mitigation measures. If it is determined that a specific project would result a substantial adverse change in the significance of a tribal

cultural resource, the impact would be significant. This significant impact would occur for projects under the Infill and Transit Focus Alternative, as it would for the 2045 MTP/SCS. Therefore, impacts would be significant and unavoidable, as they would be for the 2045 MTP/SCS, but would be reduced compared to the 2045 MTP/SCS due to the reduced level of ground disturbance outside of urban areas.

q. Wildfire

The land use pattern under this alternative would construct higher density housing in urban areas which would reduce the amount of land development within and near wildland urban interface areas. However, there is still the potential for development under this alternative to result in exacerbated wildfire risk. Exacerbated wildfire risk would result in additional impacts related to flooding, landslides, and other associated hazards. Under this alternative, mitigation would still be required; however, impacts would still be significant and unavoidable, as under the 2045 MTP/SCS.

The proposed 2045 MTP/SCS would focus housing on infill and TOD areas and would decrease the vulnerability of people and structures to wildland fire by reducing development in urban wildland interface areas. While development of both land use and transportation structures under this alternative would still be required to comply with the California Fire Code, and mitigation would still be required, impacts under this alternative would remain significant and unavoidable as potential risks from wildfire cannot be feasibly reduced to less than significant. Overall, wildfire impacts would be reduced when compared to the 2045 MTP/SCS, but would remain significant and unavoidable.

7.6 Environmentally Superior Alternative

State CEQA Guidelines Section 15126.6 requires that an EIR identify the environmentally superior alternative among the alternatives analyzed. Section 15126.6(d)(2) states that if the No Project Alternative is identified as the environmentally superior alternative, the EIR shall also identify an environmentally superior alternative from among the other alternatives analyzed. This section compares the impacts of the three alternatives under consideration to those of the 2045 MTP/SCS, in compliance with the *State CEQA Guidelines*.

Table 7-7 shows whether each alternative would have impacts that are less than, similar to, or greater than the 2045 MTP/SCS for each of the issue areas studied.

Based on the above analysis and summary in Table 7-7, Alternative 3 is the environmentally superior alternative, assuming all environmental issue areas are weighted equally. Under Alternative 3, land use patterns would be concentrated in infill and TOD areas. Alternative 3 would result in a higher density development pattern than the 2045 MTP/SCS. Alternative 3 could be considered environmentally superior to the 2045 MTP/SCS primarily because, as shown in Table 7-7, overall impacts to the following resources would be less: aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, energy, geology and soils, and tribal cultural resources. GHG emissions and VMT would also

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decrease under this alternative, though this decrease would be negligible (less than a one percent change).

However, Alternative 3 would substantially increase congested VMT and would result in increased delay for freight compared to the 2045 MTP/SCS and as such, would not meet mobility goals of the project. Alternative 3 may not be feasible in that AMBAG does not have land use authority and cannot require local agencies to make major changes to their general plans that would be required in order for Alternative 3 to be implemented.

The No Project Alternative (Alternative 1) would result in a less dense development pattern compared to the 2045 MTP/SCS, with Alternative 1 continuing existing land use trends. Because of the increased land development outside of existing urbanized areas, Alternative 1 would result in more ground disturbance than the 2045 MTP/SCS. Consequently, compared to the 2045 MTP/SCS, Alternative 1 would have greater overall impacts to aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, geology and soils, land use, noise, transportation, and tribal cultural resources, as shown in Table 7-7. It would also fail to meet most basic project objectives.

Alternative 2 would result in the same development pattern as the 2045 MTP/SCS. As such, this alternative would result in the same conflicts with land use plans, policies, and regulations as the 2045 MTP/SCS. As shown in Table 7-7, Alternative 2 would result in mostly similar impacts, with some reduced impacts related to aesthetics, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, population and housing, and tribal cultural resources.

Table 7-7 Impact Comparison of Alternatives

Impacts	2045 MTP/SCS	Alternative 1: No Project Alternative	Alternative 2: Alternative Transportation Modes	Alternative 3: Infill and Transit Focus
Aesthetics and Visual Resources				
Impact AES-1: Have a substantial adverse effect on a scenic vista or substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway	SU	<	=	<
Impact AES-2: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site or its surroundings; if the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality	SU	>	<	<
Impact AES-3: Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area	SU	>	=	<
Agriculture and Forestry Resources				
Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use; OR Conflict with existing zoning for agricultural use, or a Williamson Act contract; OR Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use	SU	>	=	<
Impact AG-2: Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)); AND Result in the loss of forest land or conversion of forest land to non-forest use	LTS	>	=	<
Air Quality				
Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan	LTS	>	=	=
Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard	SU	>	>	<

Impacts	2045 MTP/SCS	Alternative 1: No Project Alternative	Alternative 2: Alternative Transportation Modes	Alternative 3: Infill and Transit Focus
Impact AQ-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard	SU	>	>	<
Impact AQ-4 & 5: Expose sensitive receptors to substantial pollutant concentrations	SU	<	=	<
Impact AQ-6: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people	LTS	<	=	<
Biological Resources				
Impact BIO-1: Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	SU	>	<	<
Impact BIO-2: Would the project 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 the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service; AND Would the project have a substantial adverse effect on state or federally protected wetlands (including but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	SU	>	<	<
Impact BIO-3: Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	SU	>	<	<
Impact BIO-4: Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	LTS	>	=	<
Impact BIO-5: Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	NI	>	=	<

Impacts	2045 MTP/SCS	Alternative 1: No Project Alternative	Alternative 2: Alternative Transportation Modes	Alternative 3: Infill and Transit Focus
Cultural Resources				
Impact CR-1: Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5	SU	<	<	=
Impact CR-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to <i>State CEQA Guidelines</i> Section 15064.5	SU	>	=	<
Impact CR-3: Disturb any human remains, including those interred outside of formal cemeteries	LTS	>	=	<
Energy				
Impact E-1: Result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation (including transportation), based on whether the project would: a) Result in an increase in overall per capita energy consumption relative to baseline conditions, or otherwise use energy in an inefficient, wasteful, or unnecessary manner	LTS	=	=	<
Impact E-2: Result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation (including transportation), based on whether the project would: b) Result in an increased reliance on fossil fuels and decreased reliance on renewable energy sources	LTS	=	=	<
Impact E-3: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	LTS	=	=	=
Geology and Soils				
Impact GEO-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides	LTS	>	<	=
Impact GEO-2: Result in substantial soil erosion or the loss of topsoil	LTS	>	<	<
Impact GEO-3: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse; OR Be located on expansive soil, creating substantial risks to life or property	LTS	>	=	<

Impacts	2045 MTP/SCS	Alternative 1: No Project Alternative	Alternative 2: Alternative Transportation Modes	Alternative 3: Infill and Transit Focus
Impact GEO-4: 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	LTS	>	=	=
Impact GEO-5: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	SU	>	<	<
Impact GEO-6: 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; AND Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan	LTS	=	=	=
Greenhouse Gas Emissions				
Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. An increase that exceeds the following threshold would be considered a significant impact: a) A net increase in GHG emissions by 2045 compared to baseline 2020 conditions	SU	=	=	=
Impact GHG-2: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. An increase that exceeds the following threshold would be considered a significant impact: a) A net increase in GHG emissions by 2045 compared to baseline 2020 conditions	LTS	=	=	=
Impact GHG-3: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Any conflict with the following thresholds would be considered a significant impact: a) Conflict with regional SB 375 per capita passenger vehicle CO ₂ emission reduction targets of 6 percent by 2035 from 2005 levels. b) Conflict with state's ability to achieve SB 32 GHG reduction target, which aims to reduce statewide emissions to 40 percent below 1990 levels by 2030 c) Conflict with state's ability to achieve EO S-3-05 GHG reduction 2050 goal, which aims to reduce statewide emissions to 80 percent below 1990 levels by 2050 and EO B-55-18; or d) Conflict with applicable local GHG reduction plans	SU	=	=	=

Impacts	2045 MTP/SCS	Alternative 1: No Project Alternative	Alternative 2: Alternative Transportation Modes	Alternative 3: Infill and Transit Focus
Hazard and Hazardous Materials				
Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials; OR Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	LTS	=	<	=
Impact HAZ-2: Emit hazardous emissions or handles hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school	LTS	=	=	=
Impact HAZ-3: Be located on a site which is included on a list of hazardous materials compiled by the Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment	SU	=	=	=
Impact HAZ-4: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area	LTS	=	=	=
Impact HAZ-5: Impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan	LTS	=	=	=
Hydrology and Water Quality				
Impact HWQ-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality; AND Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: a) Result in substantial erosion or siltation on- or off-site	LTS	=	<	=
Impact HWQ-2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin; AND Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan	LTS	>	=	=

Impacts	2045 MTP/SCS	Alternative 1: No Project Alternative	Alternative 2: Alternative Transportation Modes	Alternative 3: Infill and Transit Focus
Impact HWQ-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: <ul style="list-style-type: none"> b) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site c) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff 	LTS	<	<	=
Impact HWQ-4: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would <ul style="list-style-type: none"> d) Impede or redirect flood flows; AND In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation	LTS	<	<	=
Land Use				
Impact LU-1: Physically divide an established community	LTS	=	=	=
Impact LU-2: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation (including, but not limited to, the General Plan, Local Coastal Program, or Zoning Ordinance) and result in a physical change to the environment not already addressed in other resource chapters of this EIR	LTS	>	=	>
Noise				
Impact N-1: Generation of 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; AND Generation of a substantial absolute noise increase over existing noise levels	SU	=	<	=
Impact N-2: Generation of excessive ground-borne vibration or ground-borne noise levels	SU	>	=	=
Impact N-3: Generation of 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; AND Generation of a substantial absolute noise increase over existing noise levels	SU	=	=	=

Impacts	2045 MTP/SCS	Alternative 1: No Project Alternative	Alternative 2: Alternative Transportation Modes	Alternative 3: Infill and Transit Focus
Impact N-4: Generation of 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; AND Generation of a substantial absolute noise increase over existing noise levels	SU	=	=	=
Impact N-5: Generation of excessive ground-borne vibration or ground-borne noise levels	SU	>	=	=
Impact N-6: 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 or public use airport, expose people residing or working in the project area to excessive noise levels	SU	>	=	=
Population and Housing				
Impact PH-1: Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)	LTS	=	=	=
Impact PH-2: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere	LTS	<	<	=
Public Services, Recreation, and Utilities				
Impact PSU-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: a. Fire protection, b. Police services, d. Parks, or e. Other public facilities	SU	=	=	=

Impacts	2045 MTP/SCS	Alternative 1: No Project Alternative	Alternative 2: Alternative Transportation Modes	Alternative 3: Infill and Transit Focus
Impact PSU-2: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: c. Schools	SU	=	=	=
Impact PSU-3: Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; Include recreational facilities or require construction or expansion of recreational facilities which might have an adverse physical effect on the environment	SU	=	=	=
Impact PSU-4: Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects; Result in a determination by the wastewater treatment provider which serves or may serve the project that has inadequate capacity to serve the project's projected demand in addition to the provider's existing communities	SU	=	=	=
Impact PSU-5: Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals	SU	=	=	=
Impact PSU-6: Not comply with federal, state and local statutes and regulations related to solid waste	LTS	=	=	=
Impact PSU-7: Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years	SU	>=	=	=
Transportation				
Impact T-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Any increase in the following performance indicators would be considered a significant impact: a. Percent of jobs outside of ½ mile of a high-quality transit stop; b. Substantially disrupt transit service; or c. Result in inconsistencies with adopted bicycle and pedestrian facilities plans	LTS	>	=	=

Impacts	2045 MTP/SCS	Alternative 1: No Project Alternative	Alternative 2: Alternative Transportation Modes	Alternative 3: Infill and Transit Focus
Impact T-2: Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b) in either of the following manners: <ul style="list-style-type: none"> a. A change in vehicle miles traveled per capita in the region that fails to reach 15 percent below existing VMT per capita conditions would be considered a significant impact; or b. A substantial increase in induced travel due to roadway capacity expansions would be considered a significant impact 	LTS	=	=	=
Impact T-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)	LTS	=	=	=
Impact T-4: Result in inadequate emergency access	LTS	=	=	=
Tribal Cultural Resources				
Impact TCR-1: Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k); AND Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1	SU	>	<	<
Wildfire				
Impact W-1: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones: <ul style="list-style-type: none"> a) 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 b) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment c) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes 	SU	>	=	<

Impacts	2045 MTP/SCS	Alternative 1: No Project Alternative	Alternative 2: Alternative Transportation Modes	Alternative 3: Infill and Transit Focus
d) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires				
Note: Comparison of impacts is based on the overall impact of the alternative on the resource or issue.				
< Alternative impacts would be less than those of the 2045 MTP/SCS				
= Alternative would result in impacts similar to the 2045 MTP/SCS				
> Alternative impacts would be greater than those of the 2045 MTP/SCS				

8 References and List of Preparers

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