Carmel Valley Traffic Improvement Program

Draft
Subsequent Environmental Impact Report

August 2007

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County of Monterey

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Carmel Valley Traffic Improvement Program Draft Subsequent Environmental Impact Report

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Acronyms and Abbreviations

µ/m3	micrograms per cubic meter
µPa	micro-Pascals
µS/cm	microSiemens per centimeter
AAQS	ambient air quality standards
AB	Assembly Bill
ADAM	Aerometric Data Analysis and Management System
ADT	average daily traffic
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
AMBAG	Association of Monterey Bay Area Governments
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
B.P.	Before Present
BA	biological assessment
Basin Plan	Water Quality Control Plan for the Central Coast Region
BMPs	best management practices
Business Plan Act	Hazardous Materials Release Response Plans and Inventory Act of 1985
C-14	carbon 14 dates
CAA	federal Clean Air Act
CAAA	Clean Air Act Amendments of 1990
Cal Am	California American Water Company
Caltrans	California Department of Transportation
CAWD	Carmel Area Wastewater District
CBC	California Building Code
CCR	California Code of Regulations
CDF	California Department of Forestry and Fire Protection
CDFA	California Department of Food and Agriculture
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFO	Community Field Office
cfs	cubic feet per second
CHP	California Highway Patrol
CIP	Capital Improvement Program
CIWMB	California Integrated Waste Management Board
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
Corps	U.S. Army Corps of Engineers
County	County of Monterey

CRHR	California Register of Historical Resources
CUSD	Carmel Unified School District
CVMP	Carmel Valley Master Plan
CVMP	Carmel Valley Master Plan
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibels
DFG	California Department of Fish and Game
DPS	District Population Segment
DUI	driving under the influence
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
ESA	federal Endangered Species Act
ESCP	erosion and sediment control plan
F	Fahrenheit
FFS	Forest Fire Stations
FMMP	Farmland Mapping and Monitoring Program
FN/m2	micro-Newtons per square meter
FR	Federal Register
General Construction Permit	NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity
GHG	Greenhouse gas emissions
GMPAP	Greater Monterey Peninsula Area Plan
HCM	2000 Highway Capacity Manual
HCP	Habitat Conservation Plan
Hz	Hertz
IPCC	Intergovernmental Panel on Climate Change
ITP	incidental take permit
kHz	kilohertz
Ldn	Day-Night Level
Leq	Equivalent Sound Level
Leq[h]	1-hour A-weighted equivalent sound level
Lmax	Maximum Sound Level
LOS	level of service
LOS	Level of service
LOS	level of service
Lx	Percentile-Exceeded Sound Level
MBTA	Migratory Bird Treaty Act
MBUAPCD	Monterey Bay Unified Air Pollution Control District
mg/L	milligrams per liter
mgd	million gallons per day
mph	miles per hour
MPRPD	Monterey Peninsula Regional Park District
MPWMD	Monterey Peninsula Water Management District
MS4s	municipal separate storm sewer systems
NAHC	Native American Heritage Commission
NCCAB	North Central Coast Air Basin
NCCPs	Natural Community Conservation Plans
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act

NMFS	National Oceanic and Atmospheric Administration National Marine Fisheries Service
NO_2	nitrogen dioxide
NOI	Notice of Intent
NOP	notice of preparation
NOx	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTU	nephelometric turbidity units
NWPs	Nationwide permits
^oF	degrees Fahrenheit
PG&E	The Pacific Gas and Electric Company
PM10	particulate matter 10 microns or less in diameter
PM2.5	particulate matter 2.5 microns or less in diameter
Porter Cologne Act	Porter-Cologne Water Quality Control Act
ppm	parts per million
PRC	California Public Resources Code
proposed program, or proposed project	proposed Carmel Valley Traffic Improvement Program
RCRA	Resource Conservation and Recovery Act
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SHPO	State Historic Preservation Officer
SIP	state implementation plan
SO_2	sulfur dioxide
SPL	sound pressure level
SR	State Route
SR 1	Highway 1
SRA	state responsibility area
State Water Board	State Water Resources Control Board
SWMP	stormwater management program
SWPPP	stormwater pollution prevention plan
TACs	Toxic air contaminants
TMDL	total maximum daily load
UBC	Uniform Building Code
US 101	U.S. Highway 101
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VMT	Vehicle miles traveled
WPCP	Water Pollution Control Plan

Executive Summary

Introduction

This summary presents the major findings of this Draft Subsequent Environmental Impact Report (DEIR) including the following:

- A brief overview of the Carmel Valley Traffic Improvement Program (proposed program or proposed project);
- Discussion of the results of analysis of key issues;
- A description of the alternatives considered and their impacts;
- Discussion of areas of known controversy; and
- A summary of impacts and mitigation measures.

Program Overview

Program Location

Carmel Valley, an unincorporated area of Monterey County, is southeast of Monterey and east of Carmel (Figure 2-1). The proposed traffic improvements would occur along Carmel Valley Road extending from just east of Holman Road in the east to Highway 1 in the west, and along Laureles Grade from Carmel Valley Road in the south to SR 68 in the north (Figure 2-2). This area is referred to as the "program area" or "project area" in this EIR. The roads that intersect Carmel Valley Road are also included in the program area at the place of intersection. As illustrated in Figure 2-2, the program area is divided into ten study segments. Table ES-1 describes these segments.

Table ES-1. Traffic Study Segments in the Road Program Area

Segment Number	Roadway	Segment ends
1	Carmel Valley Road	East of Holman Road
2		Holman Road to Esquiline Road
3		Esquiline Road to Ford Road
4		Ford Road to Laureles Grade
5		Laureles Grade to Robinson Canyon Road
6		Robinson Canyon Road to Schulte Road
7		Schulte Road to Rancho San Carlos Road
8		Rancho San Carlos Road to Rio Road
9		Rio Road to Carmel Rancho Boulevard
10		Carmel Rancho Boulevard to Highway 1

Program Background

The Carmel Valley Master Plan (CVMP) that was developed in the 1980s contains a policy (39.3.2.1) that requires that specified road segments in Carmel Valley (as identified in the Carmel Valley Master Plan EIR) meet a designated level of service (LOS) defined by the level of service at the time of the original CVMP traffic study in 1986. Any road segment that does not meet this level of service will cause approval of development that would result in significant traffic impacts in the corresponding area of Carmel Valley to be deferred.

Deferment of approval will be until an EIR is prepared that:

- Contains mitigation to return affected segments to the baseline level of service as defined by the Carmel Valley Master Plan EIR and
- Demonstrates that the proposed development would not impact the level of service along any segment of Carmel Valley Road to the point that the level of service would fall to the next lower level (Monterey County 1986; DKS Associates 2005; DKS Associates 2007).

In 2002, the Monterey County Board of Supervisors issued a resolution (Resolution No. 02-024) providing policy direction to staff and guidance to the Planning Commission to disapprove subdivisions proposed for the Carmel Valley Planning Area. This resolution was based in part[1] on a December 11, 2001 report by the Monterey County Department of Public Works that two segments of Carmel Valley Road (Segment 4 and Segment 7; see *Road Segments Analyzed* below for further discussion of road segments) had exceeded the established level of service threshold. In response to traffic reaching these thresholds and due to

[1] The resolution was also based on compliance with Carmel Valley Master Plan Policy 39.1.6, which requires development in Carmel Valley to be limited pending capacity improvement of SR1 in the area of Carmel-by-the-Sea.

the 1999 elimination of the prior plan to build the Hatton Canyon Freeway, pursuant to CVMP policies, the County Board of Supervisors resolved that residential and commercial subdivisions be denied, pending the following: 1) construction of left turn pockets on Segments 6 and 7 of Carmel Valley Road (from Robinson Canyon Road to Rancho San Carlos Road); 2) the construction of capacity-increasing improvements to State Highway 1 between its intersections with Carmel Valley Road and Morse Drive; 3) and the adoption of updated General Plan/Master Plan policies related to Level of Service on Carmel Valley Road.

Residential subdivisions with applications submitted before October 19, 1999 were allowed to proceed provided they addressed their traffic and other impacts. Scine the implementation of Resolution No. 02-034, approvals of subdivisions have been delayed in the CVMP area. The policy is intended to remain in place until the criteria above are met.

Program Objectives

- To address existing and forecasted level of service deficiencies in the CVMP area; and
- To allow development to proceed in accordance with all CVMP policies.

Program Components

The proposed program includes roadway improvements, a potential change in roadway segment level of service (LOS) standard, and several interim options for one intersection improvement.

Roadway Improvements

The Proposed Program includes the following specific projects within the Carmel Valley Road corridor, which are included in the current CIP:

- Left-turn channelization on Carmel Valley Road west of Ford Road;
- Shoulder widening on Carmel Valley Road between Laureles Grade and Ford Road;
- Paved turnouts, new signage, shoulder improvements, and spot realignments on Laureles Grade;
- Grade separation at Laureles Grade and Carmel Valley Road;
- Passing Lanes in front of the proposed September Ranch development;
- Passing Lanes opposite Garland Park;
- A climbing lane on Laureles Grade; and

- Upgrade all new road improvements within Carmel Valley Road Corridor to Class 2 bike lanes.

The Proposed Program also includes two additional projects that are not included in the current CIP:

- Passing lane (1/4 mile) between Schulte Road and Robinson Canyon Road; and
- Passing lane (1/4 mile) between Rancho San Carlos Rd and Schulte Road.

Analysis in the traffic study has found that these improvements will result in traffic operations at CVMP intersection and roadway segments that meet the established LOS standards, with the exception of Segment 3 through the Carmel Valley Village.

Interim Optional Improvements at Laureles Grade/ Carmel Valley Road Intersection

Without improvement, the intersection of Laureles Grade and Carmel Valley Road would operate at a deficient in both A.M. and P.M. peak periods. The CIP includes a grade separation improvement but the fee program only generates sufficient funding for this improvement by 2022, and thus deficient operations would occur for the interim period without interim improvements.

Two other optional interim improvement measures (improved geometry and traffic signalization) have been developed to improve the LOS and are described below. These options are considered in this EIR as Alternatives to the project.

- **All-way Stop and Modified Geometry** - The intersection would be modified to an all-way stop, provide an additional through lane in the east and westbound directions, and provide right turns (receiving lanes) for vehicles traveling in the southbound and westbound direction. Implementing these modifications would improve the LOS from F (without the CIP improvement) to LOS D in the A.M. and P.M. peak periods.
- **Signalized Intersection** - The intersection meets a traffic signal warrant during both the A.M. and P.M. peak periods. Converting the intersection to a signalized intersection would improve the LOS from F (without the CIP improvement) to LOS C in the A.M. peak period and LOS B in the P.M. peak period. In addition to the listed improvements, all existing substandard facilities (i.e., shoulders, signage, sight distance, etc.) would be upgraded to current standards.

Change in LOS Standard

As described in the traffic study, under all traffic study scenarios, traffic through the Carmel Valley Village would be LOS D and would not meet the LOS standard of C for this segment.

While the traffic study identified several options to improve traffic along this segment (such as left-turn pockets and medians, passing lanes, multiple lanes, or routing traffic through side streets through residential areas), none are considered consistent with the overall direction and policies of in the CVMP Area Plan and policies.

This program includes the proposal to lower the LOS standard from C to D for this segment instead of pursuing physical road improvements that are considered likely to result in substantial disruption of the commercial areas in the center of the Carmel Valley Village.

Subdivision Moratorium Removal

The program analyzed in this EIR includes removal of the subdivision moratorium adopted in Resolution 02-024 once the stipulated conditions are met. The resolution allows the moratorium to be removed once the following awere completed:

- Construction of left turn pockets on Segments 6 and 7 of Carmel Valley Road (from Robinson Canyon Road to Rancho San Carlos Road). These left-turn pockets will be completed in 2007.
- Construction of capacity-increasing improvements to SR1 between its intersections with Carmel Valley Road and Morse Drive. The Transportation Agency of Monterey County (TAMC) completed a northbound climbing lane on SR1 between Carmel Valley Road and Ocean Avenue in 2001 that has improved operations substantially along this portion of SR1.
- The adoption of updated General Plan/Master Plan policies related to Level of Service on Carmel Valley Road. As described above, this program includes adoption of a revised CVMP policy relative to Segment 3 LOS Standard due to a lack of feasible alternatives to maintain the established LOS standard. No other CVMP policies are proposed to be changed.

Upon completion of the left-turn pocket lanes, the conditions will be met, and the moratorium can be lifted, if the Board of Supervisors so determines. This EIR analyzes the lifting of the moratorium in the event that the Board decides to take this action.

Traffic Fee Program

Traffic fees were originally adopted by Monterey County for the CVMP in late 1992 through the adoption of Ordinance No. 3649, which was temporary. This ordinance was extended twice prior to 1995. In 1995, pursuant to Ordinance No. 3833, the County made the traffic fee program permanent. Pursuant to subsequent Resolution 95-140, the County established the current version of the traffic fee program.

An updated traffic fee program was developed as a result of the current traffic study in order to develop a fee program to pay for the current proposed improvements considered necessary to address traffic levels of service.

The costs for the roadway and intersection improvements described above were updated using current data and assumptions. The total costs of the proposed projects at each project's year completion would be approximately $61,557,000.

Based on these adjustments, the updated traffic fee program is summarized in Table ES-2. The updated fees would represent an increase of approximately $2,000 for a market rate unit on an existing lot and approximately $4,000 for new market rate units on a new low. The new rates represent an increase of 18 % over the existing rates.

Table ES-2. Recommended 2009 Impact Fee Structure

	CVMP Area	Expanded Area
Development on Existing Lots of Record (before 8/25/92)		
Market Rate Unit	$13,052	$6,526
Senior Unit	$6,526	$3,263
Caretaker Unit	$13,052	$6,526
2nd Unit / Apartment	$13,052	$6,526
Low / Moderate Income Unit	$0	$0
Development on New Lots of Record (after 8/25/92)		
Market Rate Unit	$26,104	$13,052
Senior Unit	$13,052	$6,526
Caretaker Unit	$26,104	$13,052
2nd Unit / Apartment	$26,104	$13,052
Low / Moderate Income Unit	$0	$0
Commercial		
New Hotel / Motel Unit (per room)	$26,104	$13,052
Existing Hotel / Motel Expansion (per room)	$12,752	$6,376
Commercial Uses (per 1,000 sf)	$6,526	$3,263
Service Centers (per 1,000 sf)	$3,263	$1,632

Source: Appendix G

Required Permits and Other Approvals

Monterey County

As the lead agency under the California Environmental Quality Act (CEQA), Monterey County will certify the Environmental Impact Report (EIR). This EIR is intended to be used solely for the consideration for approval of the proposed program and not used for the approval of individual projects included in the proposed program. However, information in this document may be referenced as applicable in later project-specific environmental reviews.

Other Agencies

The preparation of this program EIR does not relieve the proponents of individual projects listed in the proposed program of the responsibility to comply with the requirements of CEQA (and/or National Environmental Policy Act [NEPA] for projects requiring federal funding or approvals). This EIR represents the first tier of environmental review for the specific projects under the proposed program. The lead agency responsible for reviewing individual projects will determine the level of further, project-level environmental review needed, as project details are refined. The agencies may reference the discussion of regional impacts in this EIR as a basis of their assessment of regional or cumulative transportation impacts.

Project implementation may also require permits from other agencies including the following: U.S. Army Corps of Engineers; U.S. Fish and Wildlife Service; National Marine Fisheries Service; Federal Emergency Management Agency; California Department of Fish and Game; Regional Water Quality Control Board; and Other agencies not yet identified.

Analysis of Key Issues

This section discusses the key issues of concern relative to the proposed program and the conclusions of this DEIR regarding those issues. This is not a comprehensive discussion of impacts of the proposed program, of which the reader is directed to Table ES-1 at the end of this Executive Summary, and Chapters 3 and 4 of this DEIR.

- **Biological Resources—**Clearing and grading of the project sites for construction of roadway improvements may result in the removal of trees and shrubs that currently provide suitable nesting habitat for migratory birds and/or removal of habitat for special-status wildlife and plant species. Waters and wetlands may be temporarily or permanently affected Proposed roadway improvements could adversely affect and displace special-status fish species due to impacts on aquatic systems and removal of riparian vegetation. With the proposed mitigation, project impacts can likely be mitigated to a less than significant level but in some cases there may be significant and unavoidable impacts.
- **Aesthetics**—Introduction of new visual elements into the foreground could obstruct views of prominent topographic features relative to the existing setting. While most of the improvements are limited in nature, others, such as the grade separation at Laureles Grade / Carmel Valley Road represent a larger intrusion into the setting context. Sensitive natural landforms along the locally designated scenic roadway of Carmel Valley Road could be visibly altered. The project could introduce a new source of light and glare, or move existing sources of light and glare closer to adjacent sensitive land uses. With the proposed mitigation, projects can be mitigated to a less than significant level.

- **Agricultural Resources—**The proposed roadway improvements have the potential to result in the conversion of some Important Farmland (defined as Prime Farmland, Farmland of State Importance, or Unique Farmland) to nonagricultural uses. There is only limited Important Farmland along Carmel Valley Road and Laureles Grade, but some of it could be affected by proposed improvements. This impact is considered potentially significant because Monterey County cannot guarantee that conversion of farmland can be avoided as part of future projects. Mitigation could reduce the impact, but not to a less-than-significant-level for all projects. Therefore, this impact is considered significant and unavoidable.
- **Transportation and Circulation—**The program would not generate trips directly, but could allow further growth in the CVMP area that, combined with growth outside the CVMP area could result in the deterioration of LOS at one intersection (Laureles Grade / Carmel Valley Road) and along some Carmel Valley Road segments (Segment 3, 5, 6, and 7) to conditions that violate the established standards. Proposed program improvements and mitigation would reduce these impacts to less than significant, except along Segment 3, which is significant and unavoidable because no allowable mitigation measure has been identified. The program could significantly alter present vehicular circulation and increase delays and roadway hazards temporarily during construction of specific projects, which would be mitigated to a less than significant with implementation of project traffic controls.
- **Noise**—The project would result in increased noise during construction and operation and would expose persons to ground borne vibration during construction. Mitigation is expected to reduce impacts to a less-than-significant level. The program's contribution to cumulative traffic noise could be reduced with mitigation, but not to less than significant, and is therefore, considered significant and unavoidable.
- **Air Quality**—The program would result in increased emissions of exhaust, dust, and soil during construction, but would be mitigated to a less-than-significant level. Construction would also cause significant elevated health risks to sensitive receptors from exposure to emissions, which could likely be mitigated to a less-than-significant level; however, given that construction details for individual projects is not known at this time, it is possible that construction period emissions of toxic air contaminants could be significant and unavoidable.
- **Greenhouse Gases/Climate Change** - Due to growth inside the CVMP and outside the CVMP, vehicle-miles traveled will increase in the CVMP by 2030. The amount of vehicle-related greenhouse gas emissions will also likely increase, at least before taking into account future changes in fuel carbon content and future vehicle efficiency improvements that are likely to be mandated by the state as part of implementation of AB-32. Vehicle-miles traveled with and without program implementation are similar, as are estimated greenhouse gas emissions associated with vehicle travel. Residential greenhouse gas emissions would be higher with the program, as the program allows further subdivision within the CVMP rather than continuation of the current subdivision moratorium. Whether or not

residential (or other) growth in the CVMP results in an increase in global GHG emissions or only displaces those emissions from one location to another is not known due to the difficulty to discern the baseline emissions of future residents. However, as of the writing of this EIR, the agencies with jurisdiction over air quality regulation and GHG emissions such as the ARB and the MBUAPCD have not established regulations, guidance, methodologies, significance thresholds, standards, or analysis protocols for the assessment of greenhouse gas emissions and climate change. Thus, the methodology to establish an appropriate baseline, to develop a project-level inventory for the program, or to evaluate the significance of GHG emission changes has not yet been established that would allow for an appropriate analysis of the impact of the program on climate change.

- **Construction Disruption**—Construction may adversely affect traffic, access, and emergency access (especially on Carmel Valley Road), air quality, and noise. These are likely to be significant, but temporary impacts that can be mitigated to less than significant by proposed mitigation for traffic control plans.
- **Public Services and Utilities**—Construction of the proposed roadway improvements could conflict with existing underground utilities and interrupt service in Carmel Valley. Water service interruptions could also affect fire flows. Construction activities associated with the proposed roadway improvements could increase the amount of solid waste in the service area; however this is considered temporary. With the proposed mitigation, impacts would be less than significant.
- **Cultural Resources—**Individual projects as part of the program have the potential to damage the eligibility or eligibility potential of resources for listing in the NRHP or CRHR. Construction activities present the possibility that previously unrecorded archaeological sites will be disturbed. Long-term use of a specific project area could result in the exposure of buried archaeological resources that were not visible or uncovered during archaeological survey, or construction of the specific project. With the proposed mitigation, impacts would be less than significant in many cases. However, as the exact alignment and location of proposed improvements will only be determined during later design, it is possible that unavoidable cultural resources may be present and mitigation may not be feasible and thus there is a potential for significant and unavoidable impacts.
- **Population/Housing—**A proposed grade separation at Laureles Grade and Carmel Valley Road, if implemented, could potentially require acquisition of new right-of-way from adjacent residential areas resulting in displacement of existing housing and/or residents. With the proposed mitigation, impacts would be less than significant.
- **Growth Inducement—**The proposed program would not directly induce unplanned growth or growth at rates in excess of those supported by the County's original 1982 General Plan and the adopted CVMP. The proposed program would remove the moratorium for growth in the CVMP area by addressing existing and forecasted LOS deficiencies in the program area and allowing development to proceed in accordance with CVMP policies.

Development of the proposed program would thus indirectly contribute to growth in Carmel Valley by removing the obstacle to planned growth and allowing it to potentially proceed to CVMP buildout.

Alternatives Considered

A range of alternative options was identified with the potential to avoid or substantially reduce the significant impacts of the program. The range of alternatives considered was determined to represent a reasonable range for the programmatic level of the analysis and considering the nature of the proposed program and the significant impacts identified for the proposed program.

Alternatives were screened for feasibility, their ability to meet some or all of the project objectives, and their potential to avoid or substantially reduce significant impacts of the program.

The following alternatives are analyzed further in the document. A summary of analysis is provided below.

No Project Alternative

Under the No Project Alternative, there would be no additional residential or commercial subdivisions, as it is assumed that the existing subdivision moratorium will continue. It is assumed that additional single-family dwellings, visitor-serving units, and commercial developments can be approved within the CVMP land use framework without the need for subdivision up to the growth limits in the CVMP. It is also assumed that previously approved projects will be completed.

Alternative Characteristics

This alternative assumes that Monterey County Board Resolution 02-024 becomes permanent policy for the duration of CVMP buildout to 2030. This resolution does not stop development, but rather land subdivision. Without the program (and thus with a continued moratorium), it is still possible that single-family residential development could occur on certain existing lots of record within the CVMP area. Construction of one single-family residence or a second dwelling unit in a residential zone can be exempt from CEQA review (CEQA Guidelines 15303), although the exemption is not absolute. In the program area, 655 residential units are associated with prior approvals. Based on County data, there are 258.5 remaining vacant lots of record in the program area that meet the criteria of compatible uses and that do not already contain substantive development. It is assumed that one (1) unit per lot would be built in this scenario (DKS Associates 2007). It cannot be known for certain that such residential development will or will not actually occur; however this residential

development is considered possible and thus disclosed as a potential characteristic of the No Project Alternative.

Commercial development is assumed to not be impeded by lack of ability to subdivide land under this alternative and the AMBAG projections for commercial growth by 2030 are assumed for this alternative (the same as the proposed program). Visitor-serving development would include 285 additional units, would be allowed in various locations within Carmel Valley through 2030 under the No Project scenario. It is assumed that the lack of ability to subdivide land does not affect visitor-serving development.

Pursuant to the moratorium resolution and CVMP Policy 39.3.2.1(2006 CVMP Update Policy 2.18), the County cannot approve development that results in a significant impact to CVMP roads unless an EIR is prepared that includes mitigation of operations to acceptable levels, but which may include statements of overriding considerations.

Under this alternative, it is assumed that some traffic mitigation measures would be advanced as projects come forward (particularly for larger-scale visitor-serving and commercial projects), and the current fee program would continue to be implemented to administer traffic mitigation measures such that effects of development are addressed as they occur. This alternative represents a "lesser buildout" alternative as it represents less than 50% of potential residential development than with the proposed program. The scale and timing of traffic improvements was not determined although the overall scale would be less than the proposed program due to the lower amount of fees collected.

Impact Analysis

With the prohibition of subdivision, residential growth would be less and more dispersed throughout the Valley than with the proposed program. Thus, secondary impacts associated with residential growth, such as biological impacts, aesthetic impacts, etc. would be dispersed more widely.

Traffic conditions would have acceptable levels of service except at the Laureles Grade/ Carmel Valley Road intersection and along Carmel Valley Road Segments 3, 5, 6, and 7. Although some traffic improvements would occur with this alternative, the timing and scale of such improvements is unknown, and thus it is possible that traffic conditions may worsen over time.

Impacts related to traffic improvement construction would be similar to those of the proposed program, but on a more limited scale.

Due to the constraint on residential growth, this alternative could result in increased growth pressure in other parts of the County.

Alternative 1—Grade Separation Alternatives 1A and 1B

This alternative would be the same as the proposed program but would include a signal or an all-way stop instead of a grade separation at the intersection of Laureles Grade and Carmel Valley Road.

The intersection of Laureles Grade and Carmel Valley Road would operate at a deficient LOS under the No Project. The proposed program includes a grade separation at the southbound left turn movement, which would improve LOS operations from LOS F to LOS C in both A.M. and P.M. peak periods.

Two alternatives for addressing operations at the intersection of Laureles Grade and Carmel Valley Road without implementing a grade separation are analyzed below as Grade Separation Alternative 1A and Grade Separation Alternative 1B.

The Grade Separation Alternatives 1A and 1B would meet the program objective to address level of service deficiencies in the CVMP area.

Grade Separation Alternative 1A Characteristics

Grade Separation Alternative 1A involves implementation of a signal at Laureles Grade and Carmel Valley Road to address LOS operation deficiencies. The intersection meets the need for a signal warrant during both A.M. and P.M. peak periods. Grade Separation Alternative 1A would convert the intersection of Laureles Grade and Carmel Valley Road to a signalized intersection, improving the LOS operations from LOS F to LOS C in the A.M. peak period and to LOS B in the P.M. peak period.

A generic estimate of a signalized intersection with all features would cost approximately $250,000, which would include signal study, the equipment purchase, installment, maintenance, and operation.

Grade Separation Alternative 1B Characteristics

Grade Separation Alternative 1B involves modification to the Laureles Grade and Carmel Valley Road intersection geometry and traffic control to address LOS operation deficiencies. The intersection would be modified to an all-way stop. An additional through lane would be constructed in the east- and westbound directions and right turn lanes (receiving lanes) would be provided for vehicles traveling in the south- and westbound directions. These modifications would improve the LOS from LOS F to LOS D in the A.M. and P.M. peak periods.

A generic estimate of this alternative is $200,000 assuming that the extra eastbound and westbound lanes would start approximately 300 feet before the intersection. In addition right turn receiving lanes in the northbound and westbound directions would extend for approximately 200 feet.

Impact Analysis

Both alternatives to the proposed grade separation at Laureles Grade and Carmel Valley Road would avoid the use of a grade-separated structure at the project site, thereby eliminating impacts associated with the structure identified under the proposed program. Furthermore, excavation at the project site would be avoided and the construction timeframe and intensity would be reduced. All construction impacts associated with erection of the grade separation would be eliminated in the areas of biological resources; hydrology and water quality; agricultural resources; air quality; noise; public services and utilities; cultural resources; and population and housing. All visual impacts associated with the proposed grade-separated structure would be avoided, although there would be an all-way stop or signal at this location that some individuals might find to be aesthetically different than the present condition.

Both of these alternatives would be more cost effective than the grade separation. In addition, given the failing operations at this intersection at present and the time necessary to collect fees to fund a grade separation, both of these alternatives would improve traffic conditions far sooner than the proposed program.

Alternative 2—Carmel Valley Village Alternative 2A and 2B

This alternative would be the same as the proposed program but would include a multi-lane segment through the Carmel Valley Village or would route Carmel Valley Road traffic on Via Contenta and Ford Drive.

Village Alternative 2A Characteristics

Carmel Valley Village Alternative 2A would widen Carmel Valley Road in the segment near Carmel Valley Village to two (2) lanes in each direction. The feasibility of adding two lanes is unknown, as no evaluation of right-of-way and alignments has been done. For this EIR, this is considered potentially feasible barring further analysis.

Village Alternative 2B Characteristics

Carmel Valley Village Alternative 2B would reroute traffic off of Carmel Valley Road on to Via Contenta and/or Holman Road/Ford Road and back on to Carmel

Valley Road by increasing the speed limits and replacing signage in these locations. The traffic re-routing under this alternative would divert local and regional traffic through residential neighborhoods.

Impact Analysis

While potentially improving traffic conditions on Carmel Valley Road, widening to 4-lanes through the Carmel Valley Village would change the current ambiance and character of the Carmel Valley Village shopping area. Circulation and safety impacts would likely occur with the need to provide for left-turns across two lanes of traffic and the need to provide for safe pedestrian crossings. Widening would also result in the removal of street trees and may require land acquisition or building removal. Such changes are also considered inconsistent with the policies of the CVMP.

Via Contenta, Holman Road, and Ford Road are not designed to carry through traffic. While increasing speed limits along these roads is feasible as well as providing directional signage, this alternative would likely increase safety risks for drivers and residences along this road and would change the residential character of these side roads at present.

Alternatives Considered But Eliminated from Detailed Consideration

The following alternatives were initially considered but dismissed from more detailed impact analysis because they are either considered infeasible, would not meet at least some of the project objectives, or would not avoid or substantially lower the significant impacts identified for the proposed program. Chapter 5 discusses the reason for not being considered in greater detail.

- Alternative A—Zero Growth Alternative
- Alternative B—Four-Lane Alternative
- Alternative C—Rio Road Extension to Carmel Valley Road
- Alternative D—Transit Alternative
- Alternative E—Clustered Land Use Pattern Alternative
- Alternative F—Regional Improvements Alternative
- Alternative G—Policy Change Alternative

Environmentally Superior Alternative

The No Project Alternative would result in a lower level of impacts related to traffic improvement construction and lesser level of impacts related to residential buildout (although this may be offset by residential development elsewhere). The No Project Alternative would result in greater traffic deficiencies compared to the proposed program and would not meet the project objectives. Thus, the No Project Alternative is not considered the environmentally superior alternative.

Based on the assessment of environmental impacts for the feasible alternatives described above, the environmentally superior alternative is Grade Separation Alternative 1A which would meet the project objectives while avoiding the impacts of the proposed grade separation, particularly as the Laureles Grade/Carmel Valley Road intersection is failing now and it will be many years before sufficient fee is collected to build the grade separation.

Areas of Controversy

Development in Carmel Valley has been the focus of public attention and has been discussed at length during the Monterey County Resources Management Agency – Planning Department's General Plan Update process. Intensification of Commercial and Residential development is a particular area of concern that has been raised during project review of prior development projects in Carmel Valley.

Based on prior planning, historical projects that have been processed, and scoping for this EIR, areas of know controversy include the following:

- Traffic Congestion – Concern was raised in scoping comments about increasing traffic congestion due to existing traffic within the Valley, as well as traffic from outside the Valley and tourist traffic. Emergency access was also a concern raised in comment.
- Rural Character – Concern was raised about the compatibility of potential traffic improvements with the rural character of the Valley.
- Land Use Forecasting – The methodology used to forecast potential future land use and traffic generation has been an area of concern as well, in particular as it relates to the treatment of approved but not yet built projects, development on legal lots, future development projects, and the treatment of second units.
- Growth within the CVMP Area – The amount, character, and location of residential, visitor-serving, and commercial growth within the CVMP area has been an area of concern for various parties over the years.
- Natural Resource Impacts – Impacts of traffic improvements and future growth on biological resources and the Carmel River are also key concerns raised in comment

This is not a complete list of every concern raised related to traffic and growth in the CVMP area, but these issues were raised most consistently and most prevalently during the scoping period and during prior planning processes.

Summary of Impacts and Mitigation Measures and Levels of Significance

The impacts of the proposed program, proposed mitigation, and significance conclusions are discussed in detail in Chapters 3 and 4 of this DEIR. Table ES-3 summarizes the impacts, mitigation measures, and levels of significance identified in this document.

Table ES-3. Summary of Impacts

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
3.1 Geology, Soils, and Seismicity			
A. Seismic Hazards			
GEO-1: Expose People or Structures to Risk of Rupture of a Known Earthquake Fault	LTS	None Required	–
GEO-2: Expose People or Structures to Risk of Seismic Groundshaking	PS	GEO-2.1: Conduct Project-Level Geotechnical Investigations and Design all Project Facilities to Avoid or Minimize Groundshaking-Related Impacts	LTS
GEO-3: Expose People or Structures to Risk of Earthquake-Induced Liquefaction	PS	GEO-3.1: Conduct Site-Specific Geotechnical Investigations for Liquefaction and Implement Appropriate, Proven Geotechnical Methods	LTS
B. Landslides and Slope Stability			
GEO-4: Expose People or Structures to Risk of Landslide or Slope Failure	PS	GEO-4.1: Conduct Site-Specific Geotechnical Investigations for Slope Stability and Implement Appropriate, Proven Geotechnical Methods	LTS
GEO-5: Destabilize Steep Slopes	SI	GEO-5.1: Implement Recommended Design Criteria of the Geotechnical Investigation Wherever Steep Slopes Would Be Graded or Manufactured	LTS
C. Erosion			
GEO-6: Cause Soil Erosion or Loss of Topsoil and Subsequent Sedimentation	PS	GEO-6.1: Prepare and Implement an Erosion and Sediment Control Plan, Storm Water Pollution Prevention Plan, or Water Pollution Control Plan at the Project Level	LTS
D. Soil Constraints			
GEO-7: Expose People or Structures to Risks Resulting from Expansive Soils and Sediments	LTS	None Required	–

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
GEO-8: Expose People or Structures to Risks Resulting from Land Subsidence or Settlement	PS	GEO-8.1: Conduct Site-Specific Geotechnical Investigations for Settlement and Subsidence and Implement Appropriate, Proven Geotechnical Methods	LTS
E. Hazardous Materials			
GEO-9: Expose People to Untreated Human Waste	NI	None Required	–
GEO-10: Expose People or the Environment to Hazardous Waste Contamination	PS	GEO-10.1: Perform a Phase 1 Preliminary Environmental Site Assessment Before Beginning Construction Activities GEO-10.2: Coordinate Construction Activities with Health Department and Waste Handler	LTS
Cumulative Impacts			
Cumulative Impact GEO-1: Cumulative Impacts of Development on Geologically Hazardous Areas	CC	Project-level mitigation noted above	LCC
Cumulative Impact GEO-2: Cumulative Accelerated Runoff, Erosion, and Sedimentation	CC	Project-level mitigation noted above	LCC
Cumulative Impact GEO-3: Cumulative Significant Hazards to the Public or Environment	CC	Project-level mitigation noted above	LCC
3.2 Hydrology and Water Quality			
A. Alteration of Drainage Patterns			
HYD-1: Potential Alteration of Drainage Patterns	LTS	None Required	–
B. Stormwater Runoff and Drainage Infrastructure			
HYD-2: Potential Increases in Runoff or Exceedances in Stormwater Capacity	PS	H-2.1: Design and Implement Stormwater Management Measures	LTS
C. Water Quality			

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
Impact HYD-3: Temporary Impairment of Water Quality Associated with Roadway Construction	PS	H-3.1: Prepare a Stormwater Pollution Prevention Plan	LTS
HYD-4: Long-Term Impacts Resulting in Impaired Water Quality Associated with the New Roadways	PS	H-4.1: Conduct Site Specific Water Quality Analysis and Treatment	LTS
D. Groundwater Supply			
HYD-5: Potential Interference with Groundwater Recharge	PS	H-5.1: Design and Install Infiltration Devices	LTS
E. Risk of Flooding			
HYD-6: Potential Exposure of People or Structures to Significant Risk from Flooding	PS	H-6.1: Prevention of Risk to People or Structures from Flooding	LTS
F. Risk of Inundation by Seiche, Tsunami, or Mudflow			–
HYD-7: Increased Likelihood of Inundation by Seiche, Tsunami, or Mudflow	LTS	None Required	–
Cumulative Impacts			
Cumulative Impact H-1: Cumulative Impacts to Hydrology and Water Quality	CC	Project-level mitigation noted above.	LCC
3.3 Biological Resources			
A. Impacts on Vegetation			
BIO-1: Potential Disturbance or Loss of Sensitive Vegetation Types	PS	BIO-1.1: Conduct Focused Biological Surveys of Sensitive Vegetation Areas BIO-1.2: Avoid Impacts on Sensitive Woodland and/or Forest Habitats BIO-1.3: Conserve Sensitive Woodland and/or Forest Habitats to Mitigate for Loss of a Potentially Native Stand	LTS

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
BIO-2: Potential Disturbance or Loss of Sensitive Riparian and/or Water/Aquatic Habitat including Wetlands	SU	BIO-2.1: Identify and Document Riparian Habitat	SU
		BIO-2.2: Avoid or Minimize Disturbance of Riparian Habitats	
		BIO-2.3: Compensate for the Loss of Riparian Habitat	
		BIO-2.4: Identify and Delineate Waters of the United States, Including Wetlands	
		BIO-2.5: Avoid or Minimize Disturbance of Waters of the United States, Including Wetland Communities	
		BIO-2.6: Compensate for the Loss of Wetland Habitat	
BIO-3: Potential Disturbance or Loss of Special Status Plant Populations	PS	BIO-3.1: Document Special-Status Plant Species Populations	SU
		BIO-3.2: Avoid or Minimize Impacts on Special-Status Plant Species Populations by Redesigning the Project, Protecting Populations, and Developing a Transplantation Plan (if necessary)	
BIO-4: Potential Disturbance or Loss of Common Vegetation Habitats	LTS	None Required	–
BIO-5: Potential Loss of Protected Trees	PS	BIO-5.1: Redesign Specific Projects or Compensate for Removal of Protected Trees	LTS
BIO-6: Potential Introduction or Spread of Noxious Weeds	PS	BIO-6.1: Conduct a Noxious Weed Survey and Document Noxious Weed Infestation	LTS
		BIO-6.2: Avoid or Minimize the Dispersal of Noxious Weeds Into Uninfested Areas	
B. Impacts on Wildlife			

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
BIO-7: Potential Disturbance or Loss of Special Status Wildlife Species and Their Habitats	PS	BIO-7.1: Document Special-Status Wildlife Species and Their Habitats	SU
		BIO-7.2: Avoid or Minimize Impacts on Special-Status Wildlife Species by Redesigning Specific Projects, Protecting Special-Status Wildlife Habitat, and Developing a Mitigation Monitoring Plan (if Necessary)	
		BIO-7.3: Coordinate with Resource Agencies and Develop Appropriate Compensation Plans for State- and Federally Listed Wildlife Species	
BIO-8: Potential Disturbance and Loss of Common Wildlife Species and Wildlife Migration	LTS	None Required	–
BIO-9: Potential Loss or Disturbance of Nesting Migratory Birds and Raptors	PS	BIO-9.1: Remove Vegetation During the Nonbreeding Season and Avoid Disturbance of Nesting Migratory Birds, Including Raptors, as Appropriate	LTS
BIO-10: Temporary and Permanent Impacts to Steelhead Trout and other Carmel River Fish	PS	BIO-10.1: Assess and Document Habitat for Special-Status Fish Species	LTS
		BIO-10.2: Avoid or Minimize Impacts on Special-Status Fish Species and Their Habitat	
BIO-11: Conflicts with Local Policies or Ordinances that Protect Biological Resources	Significant	BIO-11.1: Review Local County Policies, Ordinances, and Conservation Plans, and Comply with Requirements	LTS
Cumulative Impacts			
Cumulative Impact BIO-1: Cumulative Loss of Biological Resources Including Habitats and Special Status Species	CC	Project-level mitigation noted above	CCU
3.4 Aesthetics			
A. Visual Character and Quality			

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
AES-1: Changes in Visual Character or Quality Related to Roadway Improvements	LTS	None Required	_
B. Scenic Vistas and Corridors			
AES-2: Changes in Views from Adjacent Land Uses and Other Public Viewpoints	PS	AES-2.1: Implement Measures to Reduce Visual Intrusion for Existing Residences and other Public Viewpoints	LTS
AES-3: Degrade Scenic Resources or Visibly Alter Sensitive Natural Landforms along a State Scenic Highway Related to Traffic Improvements	PS	AES-3.1: Implement Measures to Minimize Loss of Scenic Resources and Alteration of Natural Landforms within Scenic Roadway Corridors	LTS
C. Light and Glare			
AES-4: Creation of New Sources of Light and Glare	PS	AES-4.1: Implement Measures to reduce Temporary and/or Permanent Sources of Light and Glare	LTS
Cumulative Impacts			
Cumulative Impact AES-1: Cumulative Degradation of the Existing Visual Character of the Region	CC	Project-level mitigation	LCC
3.5 Land Use			
A. Land Use Compatibility			
LU-1: Potential Conflicts in Compatibility of Proposed Roadway Improvements with Surrounding Land Uses	LTS	None Required	_
B. Plan/Policy Consistency			
LU-2: Conflicts with Land Use Plans, Policies, or Regulations	LTS	None Required	_
C. Division of an Established Community			
LU-3: Potential Division of an Established Community	LTS	None Required	_

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
Cumulative Impacts			
Cumulative Impact LU-1: Cumulative Impact on Communities and Local Land Uses	LCC	None required	–
3.6 Agricultural Resources			
A. Convert Farmland to Nonagricultural Use			
AG-1: Direct Conversion of Important Farmland to Nonagricultural Use	PS	AG-1.1: Evaluate the Potential for Direct Farmland Conversion at the Project Level and Avoid, Minimize, and Compensate for Loss of Farmland	SU
AG-2: Indirect Conversion of Important Farmland to Nonagricultural Use	LTS	None Required	–
B. Conflict with Existing Use or Legal Status			
AG-3: Conflict with Existing Williamson Act Contracts	LTS	None Required	–
AG-4: Conflict With Use of Adjacent Lands That Induces Conversion to Nonagricultural Use	LTS	None Required	–
Cumulative Impacts			
Cumulative Impact AG-1: Cumulative Impact on Agricultural Land	CC	Project-level mitigation noted above	CCU
3.7 Transportation and Circulation			
A. Intersection Improvements			
T-1: Substantial Increase in Traffic at Project Intersection Relative to the Existing Traffic Load and Capacity	LTS		LTS
B. Roadway Segment LOS			

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
T-2: Violation (Cumulatively) of the LOS Standard Established by the County for Segment 3 - Esquiline Road to Ford Road	SI	No feasible mitigation identified	SU
C. Roadway Hazards and Emergency Access			
T-3: Potential Alteration of Present Patterns of Vehicular Circulation, Increased Traffic Delay, and Increased Roadway Hazards During Construction of Specific Projects	S	T-3.1: Develop and Implement a Traffic Control Plan	LTS
D. Parking Capacity			
T-4: Cause Inadequate Parking Capacity	LTS	None Required	–
E. Alternative Transportation Plans and Policies			
T-5: Conflict with Alternative Transportation Plans and Policies	NI	None Required	–
Cumulative Impacts			
Cumulative Impact T-1: Result in Traffic that exceeds LOS Standards Established by the County (Segment 3)	CC	No feasible mitigation identified	CCU
Cumulative Impact T-2: Traffic Delays due to Simultaneous Construction	CC	Project-level mitigation noted above	LCC
3.8 Air Quality			
A. Air Quality Plan Consistency			
AIR-1: Consistency with the 2004 Air Quality Management Plan for the Monterey Bay Region	LTS	None Required	–
B. Long-Term Emissions			

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
AIR-2: Exposure of Sensitive Receptors to Substantial Concentrations of CO	LTS	None Required	–
AIR-3: Generation of ROG and NO_X, CO, and PM10 Emissions in Excess of MBUAPCD Thresholds	LTS	None Required	–
C. Construction Emissions			
AIR-4: Generation Construction Emissions in Excess of MBUAPCD Thresholds	S	AIR-4.1: Limit Construction Activities AIR-4.2: Implement MBUAPCD Mitigation Measures for Construction PM10 Emissions	LTS
AIR-6: Elevated Health Risk from Exposure to Construction-Related Emissions	PS	AIR-5.1: Implement MBUAPCD Mitigation Measures for Off-Road Mobile Source and Heavy Duty Equipment Emissions	SU
D. Odors			
AIR-6: Generation of Objectionable Odors Affecting a Substantial Number of People	LTS	None Required	–
E. Greenhouse Gases/ Climate Change			
AIR-7: Increase in Greenhouse Gas Emissions	LTS – direct Undeterminable for Cumulative	None Required	–
Cumulative Impacts			
Cumulative Impact AIR-1: Cumulative Effect on Air Quality (Less than Considerable Contribution)	LCC	None Required	–
Cumulative Impact AIR-2: Cumulative Elevated Health Risk from Exposure to Construction-Related Emissions	CC	Project-level mitigation noted above	(Potentially) CCU

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
Cumulative Impact AIR-3: Increased Greenhouse Gas Emissions May Contribute to Climate Change	Undeterminable	None Required	–
3.9 Noise			
A. Long-Term Program-Related Increases in Traffic Noise			
N-1: Exposure of Noise-Sensitive Land Uses adjacent to Carmel Valley Road to Increased Traffic Noise with Implementation of the Program	S	N-1.1: Implement Noise-Reducing Treatments at the Grade Separation Project	LTS
B. Short-Term Construction Noise			
N-2: Exposure of Noise Sensitive Land Uses to Construction Noise Levels Associated with Roadway Improvements	S	N-2.1: Limit hours of Construction Operations N-2.2: Locate Noise-Generating Equipment as Far as Practicable from Noise-Sensitive Receptors N-2.3: Use Sound-Control Devices on Combustion-Powered Equipment N-2.4: Use Shortest Possible Traveling Routes When Practicable N-2.5: Disseminate Essential Information to Residences and Implement a Complaint Response and Tracking Program N-2.6: Implementation of Additional Mitigation Measures, as Needed and/or Required	LTS
C. Vibration			
N-3: Potential Exposure of Sensitive Receivers to Excessive Groundborne Vibration Levels Associated with Construction of Traffic Improvements	PS	N-2.1, N-2.2, N-2.5, and N-2.6, above	LTS
Cumulative Impacts			

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
Cumulative Impact N-1: Exposure of Noise-Sensitive Land Uses adjacent to Carmel Valley Road to Cumulative Traffic Noise that Exceed County Noise Compatibility Standards	CC	Mitigation Measure N-3: Construct Noise Barriers Between Roadways and Residents Such that Traffic Noise Does Not Exceed 60 Ldn in Outdoor Use Areas Mitigation Measure N-4: Use Low Noise Pavement	CCU
3.10 Public Services and Utilities			
A. Fire and Police Services			
PSU-1: Change in Demand for Fire or Police Services Requiring New or Expanded Facilities	LTS	None Required	–
B. Emergency Access			
PSU-2: Result in Inadequate Emergency Access	PS	PSU-2.1: Implement Construction Traffic Control Plan to Ensure that Construction Does Not Obstruct Emergency Response or Evacuation	LTS
C. Wildland Fire Hazard			
PSU-3: Exposure of People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires	LTS	None Required	–
D. Water Demand			
PSU-4: Increased Water Demand that Would Exceed Available Water Supplies and/or Require New or Expanded Supplies	LTS	None Required	–
E. Infrastructure Capacities			
PSU-5: Increased Water Demand That Would Exceed Capacity or Require Substantial Expansion of Water Supply, Treatment, Or Distribution Facilities	LTS	None Required	–
F. Wastewater Treatment			

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
PSU-6: Increased Wastewater Flows that Would Exceed Sewer Line or Treatment Plant Capacity	LTS	None Required	–
G. Utility Disruption During Construction			
PSU-7: Utility Disruption During Construction	PS	PSU-7.1: Coordinate with the Appropriate Utility Service Providers and Related Agencies to Reduce Service Interruptions	LTS
H. School Enrollments			
PSU-8: Increased Student Enrollments That Would Cause School Capacities to be Exceeded or Increase Existing Overcrowding in Schools	LTS	None Required	–
I. Recreational Demand			
PSU-9: Increased Use of Existing Parks or Other Recreational Facilities, Resulting in Construction or Expansion of Facilities or Leading to Substantial Physical Deterioration	LTS	None Required	–
J. Open Space			
PSU-10: Diminished Quality or Quantity of Open Space Areas	LTS	None Required	–
K. Landfill Capacity			
PSU-11: Increase in Solid Waste Disposal That Would Exceed Current Permitted Landfill Capacity	PS	PSU-11.1: Develop a Solid Waste Reuse Plan	LTS
Cumulative Impacts			
Cumulative Impact PSU-1: Cumulative Increase in Demand for Utility Infrastructure and Capacities	LCC	None Required	–

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
3.11 Cultural Resources			
CR-1: Potential Demolition, Destruction, Relocation, or Alteration of Historical Resources	PS	CR -1.1: Avoid Historic Architectural and Archaeological Resources CR-1.2: Architectural and Archaeological Resources—Conduct Project-Specific Records Searches, Background Research, and Field Surveys; and Prepare Technical Reports CR-1.3: Architectural Resources—Conform to the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings in the Event of Relocation CR-1.4: Architectural and Archaeological Resources—Review Project Design CR-1.5: Archaeological Resources—Recover Archaeological Data CR-1.6: Architectural Resources—Document Historical Resources Through Public Interpretation	SU
CR-2: Potential Disturbance to Previously Unidentified Buried Archaeological Resources	PS	CR-2.1: Conduct Geomorphological Analysis on Specific Project Basis and Conduct Archaeological Test Excavations for Projects that are Determined To Be Located in Highly Sensitive Areas CR-2.2: Archaeological Resources—Stop Work If Buried Cultural Deposits Are Encountered During Construction Activities CR-2.3: Conduct Archaeological Monitoring During Ground Disturbing Activities Within the Specific Project Area During Construction CR-2.4: Archaeological Resources—Stop Work If Human	LTS

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
		Remains Are Encountered During Construction Activities	
		CR-2.5: Paleontological Resources—Stop Work If Vertebrate Remains Are Encountered During Construction	
CR-3: Expose Buried Archaeological Resources Due to Long-Term Use and Exposure	PS	CR-3.1: Consult with Qualified Archaeologist to Identify the Resources and Assess the Impacts	LTS
Cumulative Impacts			
Cumulative Impact CR-1: Cumulative Impacts on Known and Undiscovered Cultural Resources	CC	Project-level mitigation noted above	CCU
3.12 Population and Housing			
A. Population Growth			
PH-1: Induce Substantial Population Growth	LTS	None Required	–
B. Cause Displacement of People or Housing			
PH-2: Displace Existing Housing or Population	LTS	PH-1.1: Comply with Uniform Relocation Assistance and Real Property Acquisition Policies Act	–
Cumulative Impacts			
Cumulative Impact PH-1: Cumulative Impacts on Population and Housing	LCC	None Required	–

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Chapter 1
Introduction

Purpose of the EIR

The County of Monterey (County) has prepared this environmental impact report (EIR) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of the proposed Carmel Valley Traffic Improvement Program (proposed program or proposed project). This EIR was prepared in compliance with the California Environmental Quality Act (CEQA) of 1970 (as amended) and the State CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.).

As described in the CEQA Guidelines, Section 15121(a), an EIR is a public information document that assesses potential environmental effects of a proposed project, as well as identifies mitigation measures and alternatives to the project that could reduce or avoid adverse environmental impacts (14 CCR 15121[a]). CEQA requires that state and local government agencies consider the environmental consequences of projects over which they have discretionary authority. The proposed Carmel Valley Traffic Improvement Program constitutes a "project" under CEQA. The EIR is an informational document used in the planning and decision-making process. It is not the purpose of an EIR to recommend either approval or denial of a project.

The procedures required by CEQA "…are intended to assist public agencies in systematically identifying both the significant effects of proposed projects and the feasible alternatives or feasible mitigation measures which would avoid or substantially lessen such significant effects." (13 California Public Resources Code [PRC] 21002). As a general rule, CEQA policy states: "Public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects." However, "…in the event specific economic, social, or other conditions make infeasible such project alternatives or such mitigation measures, individual projects may be approved in spite of one or more significant effects thereof" (13 PRC 21002). Stated differently, under CEQA, a lead agency must make certain determinations before it can approve or carry out a project if the EIR reveals that the project would result in one or more significant environmental impacts.

The lead agency must certify the final EIR. According to the CEQA Guidelines, "certification" consists of three separate steps. The agency's decision-making body must conclude, first, that the document "…has been completed in compliance with CEQA;" second, that the body has reviewed and considered the information within the EIR prior to approving the project; and third, that "…the final EIR reflects the lead agency's independent judgment and analysis." (14 CCR 15090[a], 13 PRC 21082.1[c].)

Before approving a project for which a certified final EIR has identified significant environmental effects, the lead agency must make one or more of the following specific written findings for each of the identified significant impacts (14 CCR 15091[a]).

1. Changes or alternations have been required in, or incorporated into, the project, which avoid or substantially lessen the significant environmental effect as identified in the EIR.
2. Such changes or alternations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
3. Specific economic, legal, social, technological or other considerations make infeasible the mitigation measures or project alternatives identified in the final EIR.

If significant environmental effects remain following the adoption of all feasible mitigation measures or alternatives, the lead agency must adopt a "statement of overriding considerations" before it can proceed with the project. The statement of overriding consideration must be supported by substantial evidence in the record (14 CCR 15092-3).

These overriding considerations include the economic, legal, social, technological, or other benefits of the proposed project. The lead agency must balance these potential benefits against the project's unavoidable environmental risks when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits of a proposed project outweigh the unavoidable adverse environmental effects, the lead agency may consider the adverse environmental impacts to be acceptable (14 CCR 15093[a]). These benefits should be set forth in the statement of overriding considerations, and may be based on the final EIR and/or other information in the record of proceedings (14 CCR 15093[b]).

Subsequent EIR

Once an EIR has been certified for a project, no subsequent EIR is required unless there is a substantial change in the conditions analyzed in the original EIR indicating that there is a new or more severe significant effect. Specifically, a subsequent EIR is necessary when the agency determines, on the basis of substantial evidence in light of the whole record, that substantial changes

proposed in the project or conditions under which the project would be undertaken, including new information that was not known when the previous EIR was certified, will require major revisions to the previous EIR because of the involvement of new significant environmental effects or a substantial increase in the severity of previously identified effects.

To address local concerns regarding retention of rural qualities within Carmel Valley, growth limit and traffic thresholds were established as mitigation measures in the 1984 Carmel Valley Master Plan and EIR (certified in 1986). These mitigations were adopted as policies of the current CVMP. Specifically, Policy 39.3.2.1 of the CVMP requires monitoring and reporting of traffic conditions in Carmel Valley to determine whether traffic thresholds are being reached. On October 11, 1988 the Monterey County Board of Supervisors found that traffic volumes on Carmel Valley Road had not exceeded the threshold levels for purposes of policy 39.3.2.1 of the CVMP. However, because traffic threshold conditions were being approached in certain areas, the Board directed staff to proceed with the preparation of a subsequent EIR addressing traffic impacts and mitigation on Carmel Valley Road. This subsequent EIR focused on traffic improvements and was prepared and certified in 1990 (County of Monterey 1990). Because there have been substantial changes since certification in both (1) the circumstances under which traffic improvements would be undertaken and (2) changes in the proposed traffic improvement program, preparation of this new subsequent EIR was determined to be warranted for the proposed project.

Program-Level Analysis and Tiering

Because of the nature of the proposed traffic improvement program, this EIR is a program-level EIR. The State CEQA Guidelines encourage agencies to use a program EIR in circumstances that involve a series of related projects. A program EIR provides a framework for conducting future environmental analyses for the more specific projects, a process known as *tiering*. In this case, environmental analyses of individual traffic improvement projects would be tiered off this program EIR. The concept of tiering is described in State CEQA Guidelines Section 15152 as follows:

> (a) "Tiering" refers to using the analysis of general matters contained in a broader EIR (such as one prepared for a general plan or policy statement) with later EIRs and negative declarations on narrower projects; incorporating by reference the general discussions from the broader EIR; and concentrating the later EIR or negative declaration solely on the issues specific to the later project.
>
> (b) Agencies are encouraged to tier the environmental analyses which they prepare for separate but related projects.... This approach can eliminate repetitive discussions of the same issues and focus the later EIR or negative declaration on the actual issues ripe for decision at each level of environmental review.

This approach reduces repetitive analysis of issues that may be relevant to multiple projects. In this case, use of a program EIR allows the County (the lead agency) to characterize the proposed program as the "project" being analyzed

and approved and to consider broad policy alternatives and program-wide mitigation measures early in the planning effort for the traffic improvements.

This program EIR is the first tier of environmental documentation and would be augmented by second-tier environmental documents as appropriate when additional details for the specific traffic improvements are developed during the engineering design process. Specific traffic improvements included in the proposed program would be reevaluated when they are proposed for implementation. Planning for each improvement would involve refining project information to indicate the type of project to be implemented, the location of the project, and a description of actions to be taken throughout implementation of the project.

Project-level environmental documents would incorporate by reference appropriate information from this program EIR regarding secondary effects, cumulative impacts, broad alternatives, and other relevant factors. These environmental documents would focus solely on site-specific issues that have not been considered in this program EIR. If activities were later found to have effects that were not examined in this program EIR, additional CEQA review would be required. If the County 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.

Scope of the EIR

This EIR contains a description of the proposed program, a description of the environmental setting, discussions of potentially significant program impacts, discussions of measures to be implemented to mitigate impacts found to be potentially significant, as well as an analysis of alternatives to the proposed program.

In accordance with State CEQA Guidelines (14 CCR 15082[a], 15103, 15375), the County circulated a notice of preparation (NOP) of an EIR for the proposed program on August 30, 2006 (see Appendix A). The NOP, in which the County was identified as lead agency for the proposed project, was circulated to the public; to local, state, and federal agencies; and to other interested parties. The purpose of the NOP was to inform responsible agencies and the public that the proposed program could have significant effects on the environment and to solicit their comments. Concerns raised in response to the NOP were considered during preparation of this EIR.

This EIR evaluates the potential impacts of the proposed program in relation to the following:

- geology and soils;
- hydrology and water quality;
- biological resources;

- aesthetics;
- land use;
- transportation and circulation;
- air quality;
- noise;
- public services and utilities;
- cultural resources; and
- population and housing.

This EIR also analyzes the following:

- significant unavoidable impacts;
- significant irreversible changes in the environment;
- growth-inducement;
- cumulative impacts; and
- alternatives to the proposed program.

Impact Terminology

This EIR uses the following terminology to describe environmental effects of the proposed program.

- **Significance Criteria:** A set of criteria used by the lead agency to determine at what level or "threshold" an impact would be considered significant. Significance criteria used in this EIR include some that are set forth in the CEQA Guidelines (or can be discerned from the CEQA Guidelines); criteria based on factual or scientific information; criteria based on regulatory standards of local, state, and federal agencies; and criteria based on goals and policies identified in the County's general plan and the Carmel Valley Specific Plan.
- **No Impact:** A no impact response is provided if, based on the current environmental setting, the stated impact simply does not apply in the context of the Proposed Project.
- **Less-Than-Significant Impact:** A project impact is considered less than significant when it does not reach the standard of significance and would therefore cause no substantial change in the environmental (no mitigation required).
- **Potentially Significant Impact:** A potentially significant impact is an environmental effect that may cause a substantial adverse change in the environment; however, additional information is needed regarding the extent of the impact to make the determination of significance. For CEQA

purposes, a potentially significant impact is treated as if it were a significant impact.

- **Significant Impact:** A project impact is considered significant if it results in a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by the evaluation of project effects in the context of specified significance criteria. Mitigation measures and/or project alternatives are identified to reduce these effects to the environment.
- **Significant Unavoidable Impact:** A project impact is considered significant and unavoidable if it would result in a substantial adverse change in the environment that cannot be avoided or mitigated to a less-than-significant level if the project is implemented.
- **Cumulative Significant Impact:** A cumulative impact can result when a change in the environment results from the incremental impact of a project when added to other related past, present, or reasonably foreseeable future projects. Significant cumulative impacts may result from individually minor but collectively significant projects.

The EIR also identifies particular mitigation measures that are intended to lessen project impacts. The CEQA Guidelines (14 CCR 15370) define mitigation as:

(a) avoiding the impact altogether by not taking a certain action or parts of an action;

(b) minimizing impacts by limiting the degree or magnitude of the action and its implementation;

(c) rectifying the impact by repairing, rehabilitating, or restoring the impacted environment;

(d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and

(e) compensating for the impact by replacing or providing substitute resources or environments.

Review Process for the Proposed Project

This document will be circulated to local, state, and federal agencies and to interested organizations and individuals who may wish to review and comment on the report. Its publication marks the beginning of a 45-day public review period. Written comments or questions concerning this EIR should be directed to the name and address listed below.

Submittal of written comments via e-mail (Microsoft Word format) would be greatly appreciated.

Chad Alinio
Civil Engineer
Monterey County Resource Management Agency
Department of Public Works

168 West Alisal Street, 2nd Floor
Salinas, CA 93901-2680
(831) 755-4937
(831) 755-4958 (fax)
email: aliniocs@co.monterey.ca.

Documents related to this project can be reviewed between the hours of 7:30 A.M. and 4:00 P.M. Monday through Thursday, and 7:30 A.M. and 12:30 P.M. on Fridays at the Monterey County Resource Management Agency – Planning Department Permit Center, located at the following address:

Monterey County Resource Management Agency
Planning Department
168 West Alisal Street, 2nd Floor
Salinas, CA 93901-2680

Written comments received in response to the Draft EIR will be addressed in a Response to Comments addendum document, which, together with the Draft EIR, will constitute the final EIR. After review of the project and the EIR, County staff will recommend to the Planning Commission and Monterey County Board of Supervisors whether to approve or deny the project. This governing body will then review the project, the final EIR, staff recommendations, and public testimony and decide whether to certify the EIR and whether to approve or deny the project.

If the Board of Supervisors or other agency approves the proposed project in spite of significant impacts identified by the EIR that cannot be mitigated, the Board or other agency must state in writing the reasons for its actions. A Statement of Overriding Considerations must be included in the record of the project approval and mentioned in the Notice of Determination (14 CCR 15093[c]).

Chapter 2
Program Description

This chapter describes the area covered under the proposed program, describes the background for the preparation of the proposed program and this EIR, lists the program objectives, and summarizes the proposed program components and alternatives that were considered by Monterey County. This chapter also describes the required permits and approvals.

Location

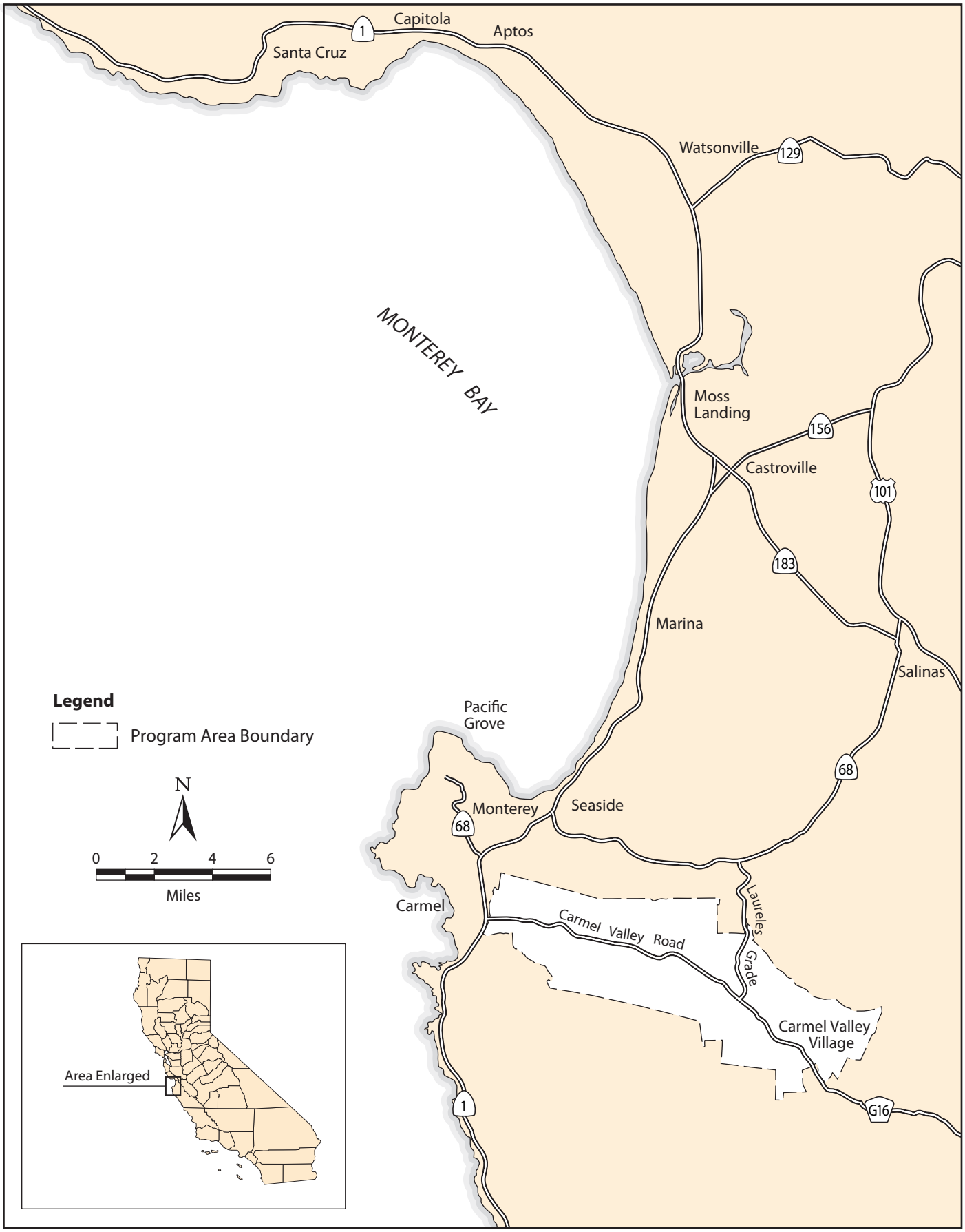
Carmel Valley, an unincorporated area of Monterey County, is located south of Monterey and north of Carmel (Figure 2-1). The proposed traffic improvements would occur along Carmel Valley Road extending from just east of Holman Road in the east to Highway 1 in the west, and along Laureles Grade from Carmel Valley Road in the south to SR 68 in the north (Figure 2-2). This area is referred to as the "program area" or "project area" in this EIR. The roads that intersect Carmel Valley Road are also included in the program area at the place of intersection. As illustrated in Figure 2-2, the program area is divided into ten key study segments and includes 7 study intersections.

Roadway Segments

For the purpose of this analysis, Carmel Valley Road has been divided into ten roadway segments[1], the same roadway segments analyzed in the previous SEIR.

- Segment 1: East of Holman Road
- Segment 2: Holman Road to Esquiline Road
- Segment 3: Esquiline Road to Ford Road
- Segment 4: Ford Road to Laureles Grade
- Segment 5: Laureles Grade to Robinson Canyon Road
- Segment 6: Robinson Canyon Road to Schulte Road
- Segment 7: Schulte Road to Rancho San Carlos Road

[1] Segments 2 and 3 were previously called Segments 2A and 2B and Segment 4 was previously called Segment 3 in the 1991 SEIR. However, the traffic study provides a sequential numbering of the ten roadway segments.



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Jones & Stokes

Figure 2-1
Project Vicinity

CARMEL

LOWER VALLEY

10

9

8

7

6

5

4

3

2

1

See Inset Below

See Inset Above

HWY 1

CARMEL VALLEY RD

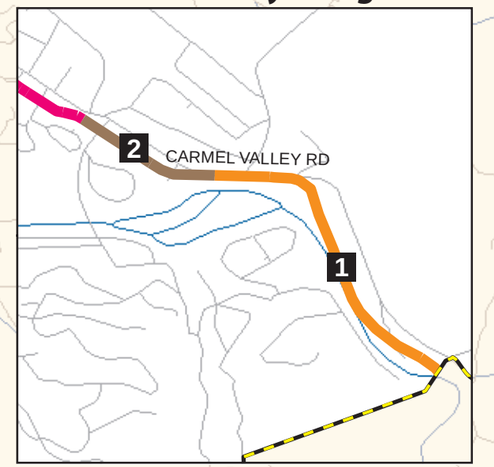
MID-VALLEY

CARMEL RIVER

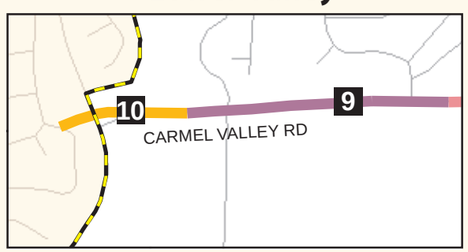
LAS GAZAS CR

CARMEL VALLEY VILLAGE

Carmel Valley Village



Lower Valley



N
W E
S

0 0.5 1 2
Miles

Program Area Boundary

Roads

1 Traffic Study Segments

Carmel Valley Traffic Improvement Program SEIR

Figure 2-2
Program Area

Jones & Stokes

S:\GIS\PROJECTS\COUNTY_OF_MONTEREY\05335_05\MAPDOC\FIG2-2_PROGRAMAREA_20070723.MXD PG (07-23-07)

- Segment 8: Rancho San Carlos Road to Rio Road
- Segment 9: Rio Road to Carmel Rancho Boulevard
- Segment 10: Highway 1 to Carmel Rancho Boulevard

Study Intersections

The following intersections were selected for analysis, as they are the most likely to be potentially affected by the program.

- Highway 1 & Carmel Valley Road
- Carmel Rancho Boulevard & Carmel Valley Road
- Highway 1 & Rio Road
- Crossroads Driveway & Rio Road
- Carmel Center Place & Rio Road
- Carmel Rancho Boulevard & Rio Road
- Laureles Grade & Carmel Valley Road

Background

Carmel Valley Master Plan (CVMP)

The CVMP was developed in the early 1980s to address the specific planning issues in Carmel Valley. The CVMP included growth controls and traffic monitoring measures, thresholds, and procedures. An Environmental Impact Report (EIR) was prepared concerning the impacts of the CVMP, was certified in 1986, and the CVMP was adopted.

Policy 39.3.2.1 was adopted as follows:

39.3.2.1 (CV) To implement traffic standards to provide adequate streets and highways in Carmel Valley, the County shall conduct and implement the following:

a. Twice yearly monitoring by Public Works (in June and October) of average daily traffic at 12 locations identified in the Keith Higgins report in Carmel Valley on Carmel Valley Road, Carmel Rancho Boulevard and Rio Road.

b. A yearly evaluation report (December) prepared jointly by the Public Works and Planning Departments to indicate segments approaching a traffic volume which would lower existing level service and which would compare average daily traffic (ADT) counts with service volumes for levels of service.

c. Public hearings to be held in January immediately following a December report in (b) above in which only 100 or less ADT remain before a lower level of service would be reached for any of the 12 segments described on figure B-1 of EIR 85-002 on the Carmel Valley Master Plan.

d. With respect to those 12 identified road segments that are at level of service (LOS) C or below, approval of development will be deferred if the approval would significantly impact roads in he Carmel Valley Master Plan area which area at level of service (LOS) C or below unless and until an EIR is prepared which includes mitigation measures necessary to raise the LOS to an acceptable level and appropriate findings as permitted by law are made which may include a statement of overriding considerations. For purposes of this policy, "acceptable level" shall mean, at a minimum, baseline LOS as contained in the Carmel Valley Master Plan EIR. To defer approval if there is significant impact means that, at a minimum, the County will not approve development without such an EIR where the traffic created by the development would impact the level of service along any segment of Carmel Valley Road (as defined in the Keith Higgins Traffic Report which is part of the Environmental Impact Report (EIR) for the Carmel Valley Master Plan "CVMP") to the point where the level of service would fall to the next lower level. As for those road segments which are at LOS C, D and E, this would, at a minimum, occur when the LOS F, this would occur when it would cause a significant impact and worsening of traffic conditions as compared with the present condition. Specific findings will be made with each project and may depend on the type and location of any proposed development. Cumulative traffic impacts from development in areas outside the CVMP area must be considered and will cause the same result as development within the plan area.

1991 Carmel Valley Road Improvement Plan

In 1991, the County of Monterey determined that traffic increases in the CVMP area had exceeded their expectations and that traffic thresholds were approaching the volumes established by Policy 39.3.2.1. The County prepared the Carmel Valley Road Improvement Plan Subsequent Environmental Impact Report (SEIR). The SEIR was a subsequent EIR to the 1986 EIR for the CVMP and updated traffic, noise, and air quality conditions and updated the suite of traffic improvements then determined necessary to maintain established CVMP traffic LOS standards. The Monterey County Resource Management Agency – Planning Department and the Public Works Department certified the SEIR and adopted the project in November 1991.

Resolution No. 02-024 (Subdivision Moratorium)

In 2002, the Monterey County Board of Supervisors issued a resolution (Resolution No. 02-024) providing policy direction to staff and guidance to the Planning Commission to disapprove subdivisions proposed for the Carmel Valley

Planning Area. This resolution was based in part[2] on a December 11, 2001 report by the Monterey County Department of Public Works that two segments of Carmel Valley Road (Segment 4 and Segment 7; see *Road Segments Analyzed* below for further discussion of road segments) had exceeded the established level of service threshold.

In response to traffic reaching these thresholds and due to the 1999 elimination of the prior plan to build the Hatton Canyon Freeway, pursuant to CVMP policies, the County Board of Supervisors resolved that residential and commercial subdivisions be denied, pending:

- the construction of left turn pockets on Segments 6 and 7 of Carmel Valley Road (from Robinson Canyon Road to Rancho San Carlos Road);
- the construction of capacity-increasing improvements to State Highway 1 between its intersections with Carmel Valley Road and Morse Drive; and
- the adoption of updated General Plan/Master Plan policies related to Level of Service on Carmel Valley Road.

Residential subdivisions with applications submitted before October 19, 1999 were allowed to proceed provided they addressed their traffic and other impacts.

Since the time of approval of Resolution No. 020-024, approval of subdivisions has been delayed in Carmel Valley.

Recent Traffic Improvements

According to the Monterey County Public Works Department, some of the required left-turn pockets have been constructed along Carmel Valley Road between Robinson Canyon Road and Rancho San Carlos Road (Segment 3) (those currently scheduled to be completed by 2007 are Boronda and Country Club as listed under the Monterey County CIP 2006-2012). All other work along Segment 3 is scheduled for completion by 2008. The Transportation Agency of Monterey County (TAMC) completed a northbound climbing lane on SR1 between Carmel Valley Road and Ocean Avenue in 2001 that has improved operations substantially along this portion of SR1. The County in conjunction with TAMC and Caltrans is also completing the SR1 northbound climbing lane north of Rio Road. The project is fully funded with STIP funding and is expected to be completed by 2010.

[2] The resolution was also based on compliance with Carmel Valley Master Plan Policy 39.1.6, which requires development in Carmel Valley to be limited pending capacity improvement of SR1 in the area of Carmel-by-the-Sea.

General Plan Update

On January 3, 2007 Monterey County adopted an update to the General Plan for Monterey County, which includes an updated CVMP Area Plan, to include traffic improvements developed to address this level of service deficiency. In June 2007, the General Plan Update (commonly referred to as "GPU4") was the subject of three different ballot measures concerning the General Plan: Measure A asked the voters if they approved of an alternative Community General Plan; Measure B asked the voters if they wanted to repeal the approval of GPU4; and Measure C asked the voters if they approved of GPU4. All three measures were defeated. On July 11, 2007, the Board of Supervisors determined that the existing 1982 General Plan (and the existing CVMP) was in effect as the legal General Plan pending a future General Plan Update.

Carmel Valley Road Traffic Study

In order to address the requirements of CVMP Policy 39.3.2.1 and Resolution No. 02-024, Monterey County requested Jones & Stokes and DKS Associates to conduct a traffic study to analyze whether improvements were needed to address current and future level of service deficiencies along Carmel Valley Road and to prepare an EIR analyzing a program of the needed improvements.

The traffic study (included in Appendix F) evaluates current traffic conditions, identifies existing and potential future land use changes, and identifies potential traffic improvements to maintain established CVMP traffic level of service (LOS) standards.

Land Use Changes Since 1986

The traffic study includes an update of land use conditions that have changed since the 1986 EIR on the CVMP. From 1987 through 2005, building permits were issued for 522 single-family dwelling units and adjunct units. Including the recent approval of the September Ranch subdivision. Approximately 322 residential units were approved within the CVMP area within new subdivisions, with an additional 288 units approved outside the CVMP area in the Rancho San Carlos/Santa Lucia Preserve development (this area contributes directly to traffic on Carmel Valley Road), although not all of the units approved in new subdivisions have been built yet or have had building permits issued. In addition, 140 visitor-serving units were approved in the CVMP area between 1987 and 2005. Commercial growth has also occurred in some parts of the CVMP. In addition to growth within the CVMP area, Monterey County has experienced substantial growth over the last two decades.

The methodology used to update traffic conditions as a result of past, pending, and future development within the CVMP area and outside the CVMP area is described in detail in the traffic study in Appendix F.

Roadway Improvements Since 1991

The following roadway improvements have been partially or fully completed since the 1991 EIR. These improvements are included the CIP list that is part of the Master Plan Fee.

- Enforcement and Signage Program (Completed).
- Sight Improvements, parking restrictions, and signage in Carmel Valley Village (Completed).
- Class II Bike Lanes (Partially Completed) – Class II bike striping was installed from Valley Greens to Dorris. A Class III bike route was installed on Valley Greens to a point about 0.5 miles west of Rancho San Carlos.
- Left-Turn Channelization – West of Ford (Partially Completed - currently working on the left-turn pockets at Boronda and Country Club Drive).
- Upgrade to Class II bike lanes on Carmel Valley Road (Completed).
- Widen Refuge Area at Via Mallorca (Completed).
- Passing Lanes in front of September Ranch (Conditional - adopted as a condition of approval for the September Ranch Subdivision).
- Various improvements along Carmel Valley Road and the Carmel Valley Village include shoulder widening, left-turn channelization, as well as various safety enhancements.

Traffic Study Methodology

To evaluate existing and future traffic conditions, the Level of Service (LOS) was evaluated at study intersections and roadway segments. The LOS evaluation indicates the degree of congestion that occurs during peak travel periods and is the principal measure of intersection performance.

Land Use Forecasting

In order to analyze the program conditions for the traffic study, DKS Associates used the AMBAG Regional Travel Demand Model, hereafter referred to as the AMBAG model, built using TransCAD software. The model was created by the Association of Monterey Bay Area Governments (AMBAG) and is the primary tool for forecasting in the AMBAG region. This model was significantly updated and migrated to TransCAD in 2005. The new AMBAG model was redesigned based on new traffic analysis zone structures, an updated roadway and transit network, updated land use forecasts, and updated socioeconomic data via surveys. The model has the capability to forecast 2000, 2010, 2020, 2025, and 2030 land use scenarios. For the purposes of this study, only the base 2000 and 2030 model was used to generate traffic volume changes. A detailed description

of the model structure and changes made for this analysis is provided in Appendix F.

Traffic Study Scenarios

Five scenarios were evaluated in the traffic study:

- **No Project Scenario:** This scenario assumes no new traffic improvements and no additional residential or commercial subdivisions, as it is assumed that the existing subdivision moratorium will continue. It is assumed that additional single-family dwellings, visitor-serving units, and commercial developments can be approved within the CVMP land use framework without the need for subdivision up to the growth limits in the CVMP Area Plan. It is also assumed that previously approved projects will be completed.
- **Scenario A:** This scenario assumes buildout of the CVMP under the adopted CVMP Area Plan with anticipated additional residential subdivisions to be evenly distributed across potential development locations, and no new traffic improvements beyond those completed or in development as listed in Section 1.1. Pending development proposals are not assumed to be built, but the land on which they are proposed is instead assumed to be developed in accordance with existing land use designations and zoning.
- **Scenario B:** This scenario assumes buildout of the CVMP under the adopted CVMP Area Plan with existing development proposals incorporated into the analysis, and with anticipated additional residential subdivisions to be evenly distributed across potential development locations, and no additional traffic improvements beyond those completed or in development as listed in Section 1.1.
- **Scenario C:** This scenario assumes buildout of the CVMP under the adopted CVMP Area Plan with existing development proposals incorporated into the analysis, and with anticipated additional residential subdivisions to be evenly distributed across potential development locations (same as Scenario B). This scenario includes certain traffic improvements in the current County Capital Improvement Program (CIP) Carmel Valley Road Improvement List.
- **Scenario D:** This scenario is the same as Scenario C, except that it also includes two passing lanes along Segments 6 and 7.

Traffic LOS Standards

Roadway Segment LOS Standards

CVMP Policy 39.2.1 described above requires that roadway segment levels of service be defined by the level of service at the time of the original CVMP traffic study in 1986. According to the 1986 study (CVMP Traffic Analysis, Keith B.

Higgins), the baseline LOS along Carmel Valley Road is as follows (LOS standards are noted applying the CVMP policy noted above in parentheses):

- Holman Road to Ford Road – Operated at LOS C or better in 1986 (standard of LOS C).
- Ford Road to Rancho San Carlos Road – Operated at LOS D in 1986 (standard of LOS D).
- Rancho San Carlos Road to Carmel Ranch Boulevard – Operated at LOS C or better in 1986 (standard of LOS C).
- Carmel Rancho Boulevard to SR1 – This portion of Carmel Valley Road operated at LOS E in 1986 (standard of LOS E).

Intersection LOS Standards

According to Monterey County Public Works, the following LOS standards are the standard of acceptable level of service for intersections as follows:

- Signalized intersections - LOS C; and
- Unsignalized intersections - LOS E.

Traffic Study Results

The results of the traffic study are presented in Appendix F and are summarized as follows:

- **Intersections:** All study intersections meet or exceed the applicable LOS standards under all scenarios with the exception of Highway One/ Rio Road and Laureles Grade/Carmel Valley Road intersections. TAMC is planning an improvement to the Highway One/Rio Road intersection that would take place before projected buildout and is likely to result ina cceptable level of service. The LOS standard for Laureles Grade / Carmel Valley Road is not met in the No Project Scenario, Scenario A, and Scenario B at each of these intersections. The LOS Standard is met for Laureles Grade/Carmel Valley Road in Scenario C and Scenario D due to the inclusion of a grade separation at this intersection in these scenarios.
- **Roadway Segments:** Six roadway segments (Segments 1, 2, 4, 8, 9, and 10) meet or exceed the applicable LOS standards under all scenarios. Segment 3 (through the Carmel Valley Village) has failing LOS under all scenarios. Three roadway segments (Segments 5, 6, and 7) will have deficient LOS under the No Project Scenario and Scenarios A and B. In Scenario C, Segment 5 would meet the LOS standard due to inclusion of CIP improvements. In Scenario D, Segments 6 and 7 would meet the LOS standard in Scenario D due to the inclusion of 0.25-mile passing lanes along each of the segments in this scenario.

- **Laureles Grade/Carmel Valley Road Intersection Improvement Options:** The grade separation in the current CIP will improve LOS at this intersection to an acceptable level. Because the traffic fee program (see description below) will only generate funding for this improvement in 2022, two additional interim improvement options (a signalized intersection and an all-way stop intersection) were identified in the study as potential means to address intersection options between now and 2022.
- **Carmel Valley Village (Segment 3):** LOS under all traffic study scenarios would be LOS D and would not meet the LOS standard of C for this segment. While the traffic study identified several options to improve traffic along this segment (such as left-turn pockets and medians, passing lanes, multiple lanes, or routing traffic through side streets through residential areas), none are considered consistent with the overall direction in the CVMP Area Plan and policies. The traffic study suggests that if further development approvals are anticipated that would affect this segment, the County may need to consider lowering the LOS Standard for this segment to D.
- **Rio Road:** The traffic study also concluded that the Rio Road extension between Carmel Valley Road and SR1 is not required in order to meet CVMP LOS standards. The Rio Road extension would cause traffic diversions from segments 8, 9, and 10 along Carmel Valley Road that currently operate at acceptable LOS. Diversion of traffic is not required to improve LOS to acceptable levels today or in the future.

The results of the traffic study were used to identify the components of the Carmel Valley Traffic Improvement Program, which is described below.

Program Objectives

- To address existing and forecasted traffic level of service deficiencies in the CVMP area; and
- To allow development to proceed in accordance with all CVMP policies.

Program Components

The Carmel Valley Traffic Improvement Program includes a specified list of road improvements, several interim improvement options for one intersection, a change in LOS standard for one segment, lifting of the subdivision moratorium, and a traffic fee program to pay for the proposed improvements through collection of fees from new development. This program constitutes the "project" analyzed in this EIR for the purposes of CEQA. This EIR is a programmatic EIR and is not intended as a project-level CEQA document for the proposed improvements. Project-level CEQA compliance would need to be completed for proposed improvements at the point at which designs have been developed to allow site-specific analysis of environmental impacts.

Roadway Improvements

Based on the results of the traffic study, the Carmel Valley Traffic Improvement Program should include the following specific projects:

- Left-turn channelization on Carmel Valley Road west of Ford Road (those currently scheduled to be completed by 2007 are Boronda and Country Club as listed under the Monterey County CIP 2006-2012);
- Shoulder widening on Carmel Valley Road between Laureles Grade and Ford Road;
- Paved turnouts, new signage, shoulder improvements, and spot realignments on Laureles Grade;
- Rio Road extension and signalization (including relocation of school access point);
- Grade separation at Laureles Grade and Carmel Valley Road;
- Passing lanes in front of the proposed September Ranch development;
- Passing lanes opposite Garland Park;
- Climbing Lane on Laureles Grade;
- Upgrade all new road improvements within Carmel Valley Road Corridor to Class 2 bike lanes;
- Passing lane (1/4 mile) between Schulte Road and Robinson Canyon Road; and
- Passing lane (1/4 mile) between Rancho San Carlos Rd and Schulte Road.

Analysis in the traffic study has found that these improvements will result in traffic operations at CVMP intersection and roadway segments that meet the established LOS standards, with the exception of Segment 3 through the Carmel Valley Village.

Interim Optional Improvements at Laureles Grade/ Carmel Valley Road Intersection

Without improvement, the intersection of Laureles Grade and Carmel Valley Road would operate at a deficient in both A.M. and P.M. peak periods. The CIP includes a partial grade separation improvement but the fee program only generates sufficient funding for this improvement by 2022, and thus deficient operations would occur for the interim period without interim improvements.

Two other optional interim improvement measures (improved geometry and traffic signalization) have been developed to improve the LOS and are described below.

- **All-way Stop and Modified Geometry** - The intersection would be modified to an all-way stop, provide an additional through lane in the east and westbound directions, and provide right turns (receiving lanes) for vehicles traveling in the southbound and westbound direction. Implementing these modifications would improve the LOS from F (without the CIP improvement) to LOS D in the A.M. and P.M. peak periods.
- **Signalized Intersection** - The intersection meets a traffic signal warrant during both the A.M. and P.M. peak periods. Converting the intersection to a signalized intersection would improve the LOS from F (without the CIP improvement) to LOS C in the A.M. peak period and LOS B in the P.M. peak period. In addition to the listed improvements, all existing substandard facilities (i.e., shoulders, signage, sight distance, etc.) would be upgraded to current standards.

Change in LOS Standard

As described in the traffic study under all traffic study scenarios, traffic through the Carmel Valley Village would be LOS D and would not meet the LOS standard of C for this segment.

While the traffic study identifies several options to improve traffic along this segment (such as left-turn pockets and medians, passing lanes, multiple lanes, or routing traffic through side streets through residential areas), none are considered consistent with the overall direction and policies of the CVMP.

This program includes the proposal to lower the LOS standard from C to D for this segment instead of pursuing physical road improvements that are considered likely to result in substantial disruption of the commercial areas in the center of the Carmel Valley Village.

Subdivision Moratorium Removal

The program analyzed in this EIR includes removal of the subdivision moratorium adopted in Resolution 02-024 once the stipulated conditions are met. The resolution allows the moratorium to be removed once the following are completed:

- Construction of left turn pockets on Segments 6 and 7 of Carmel Valley Road (from Robinson Canyon Road to Rancho San Carlos Road). These left-turn pockets will be completed in 2007.
- Construction of capacity-increasing improvements to SR1 between its intersections with Carmel Valley Road and Morse Drive. The Transportation Agency of Monterey County (TAMC) completed a northbound climbing lane on SR1 between Carmel Valley Road and Ocean Avenue in 2001 that has improved operations substantially along this portion of SR1.

- The adoption of updated General Plan/Master Plan policies related to Level of Service on Carmel Valley Road. As described above, this program includes adoption of a revised CVMP policy relative to Segment 3 LOS Standard due to a lack of feasible alternatives to maintain the established LOS standard. No other CVMP policies are proposed to be changed.

Upon completion of the left-turn pocket lanes, the conditions will be met, and the moratorium can be lifted, if the Board of Supervisors so determines. This EIR analyzes the lifting of the moratorium in the event that the Board decides to take this action.

Traffic Fee Program

Traffic fees were originally adopted by Monterey County for the CVMP in late 1992 through the adoption of Ordinance No. 3649, which was temporary. This ordinance was extended twice prior to 1995. In 1995, pursuant to Ordinance No. 3833, the County made the traffic fee program permanent. Pursuant to subsequent Resolution 95-140, the County established the current version of the traffic fee program.

The unit of measure for the fee program is different depending on the type of development. New lots, discretionary lots, and lots of record are based upon dwelling units. Service and commercial developments are assessed per 1,000 square feet, and visitor accommodations are assessed on a per room basis.

The traffic fees apply to areas within the CVMP area and within the Greater Carmel Valley Area adjacent to the CVMP that also contributes traffic to Carmel Valley Road (referred to as the "Expanded Area". Fee amounts within the expanded area are half that of the areas within the CVMP area. Fee amounts are updated annually. The current traffic fees for fiscal year 2007 – 2008 are shown in Table 2-1.

Table 2-1. 2007 – 2008 Traffic Mitigation Fees (adopted in FY 2007-2008)

	CVMP Area	Expanded Area
Development on Existing Lots of Record (before 8/25/92)		
Market Rate Unit	$11,038	$5,519
Senior Unit	$5,519	$2,760
Caretaker Unit	$11,038	$5,519
2nd Unit / Apartment	$11,038	$5,519
Low / Moderate Income Unit	$0	$0
Development on New Lots of Record (after 8/25/92)		
Market Rate Unit	$22,076	$11,038
Senior Unit	$11,038	$5,519
Caretaker Unit	$22,076	$11,038
2nd Unit / Apartment	$22,076	$11,038
Low / Moderate Income Unit	$0	$0
Commercial		
New Hotel / Motel Unit (per room)	$24,008	$12,004
Existing Hotel / Motel Expansion (per room)	$11,729	$5,865
Commercial Uses (per 1,000 sf)	$5,795	$2,898
Service Centers (per 1,000 sf)	$2,898	$1,449

Source: Appendix G.

An updated traffic fee program was developed as a result of the current traffic study in order to develop a fee program to pay for the current proposed improvements considered necessary to address traffic levels of service. The costs for the roadway and intersection improvements described above were updated using current data and assumptions. This fee program is described in further detail in Appendix G.

The total costs of the proposed projects at each project's year completion would be approximately $61,557,000. The completion years were assumed to vary in order to spread the capital costs over time. The targeted completion years reflect what would occur should new homes be constructed at an even rate over the twenty-year period. If all projects were to be built and completed by 2008, it would cost the county approximately $42,750,000. However, it is not realistic to assume that all roadway projects would be built and completed within a year. Conversely, if all projects are postponed for twenty years, then built and completed in 2027, the total cost to the County would be approximately $90,100,000.

Based on these adjustments, the updated traffic fee program is summarized in Table 2-2. As shown below, the updated fees would represent an increase of approximately $2,000 for a market rate unit on an existing lot and approximately $4,000 for new market rate units on a new low. The new rates represent an increase of 18 % over the existing rates.

Table 2-2. Recommended 2009 Impact Fee Structure

	CVMP Area	Expanded Area
Development on Existing Lots of Record (before 8/25/92)		
Market Rate Unit	$13,052	$6,526
Senior Unit	$6,526	$3,263
Caretaker Unit	$13,052	$6,526
2nd Unit / Apartment	$13,052	$6,526
Low / Moderate Income Unit	$0	$0
Development on New Lots of Record (after 8/25/92)		
Market Rate Unit	$26,104	$13,052
Senior Unit	$13,052	$6,526
Caretaker Unit	$26,104	$13,052
2nd Unit / Apartment	$26,104	$13,052
Low / Moderate Income Unit	$0	$0
Commercial		
New Hotel / Motel Unit (per room)	$26,104	$13,052
Existing Hotel / Motel Expansion (per room)	$12,752	$6,376
Commercial Uses (per 1,000 sf)	$6,526	$3,263
Service Centers (per 1,000 sf)	$3,263	$1,632

Source: Appendix G.

Required Permits and Other Approvals

Monterey County

As the lead agency under CEQA, Monterey County will certify the EIR. This EIR is intended to be used solely for the consideration for approval of the proposed program and not used for the approval of individual projects included in the proposed program. However, information in this document may be referenced as applicable in later project-specific environmental reviews.

As the program represents a circulation program for the CVMP, Monterey County will consider adoption of the program.

Other Agencies

The preparation of this program EIR does not relieve individual projects listed in the proposed program of the responsibility to comply with the requirements of CEQA (and/or National Environmental Policy Act [NEPA] for projects requiring federal funding or approvals). This EIR represents the first tier of environmental review for the specific projects and actions under the proposed program.

As projects are advanced further in the design phase, the lead agency responsible (at this time likely Monterey County Public Works Department) will determine the level of further, project-level environmental review needed, as project details are refined. New CEQA documents may reference the discussion of regional impacts in this EIR as a basis of their assessment of regional or cumulative transportation impacts.

Project implementation may also require permits from the following other agencies:

- U.S. Army Corps of Engineers - Clean Water Act Section 404 Permit;
- U.S. Fish and Wildlife Service – Federal Endangered Species Act Compliance;
- National Marine Fisheries Service – Federal Endangered Species Act Compliance;
- Federal Emergency Management Agency – If floodplain encroachment is proposed;
- California Department of Fish and Game – California Endangered Species Act Compliance and Streambed Alteration Agreement;
- Regional Water Quality Control Board – Clean Water Act Section 401 and 402 compliance and Porter-Cologne Water Quality Act Waste Discharge Requirements; and
- Other agencies not yet identified such as Monterey Peninsula Water Management District (if new water hookups are proposed).

Chapter 3
Environmental Analysis

Introduction

This chapter contains individual sections that describe the potential environmental impacts of the proposed program. Each topical section (3.1 through 3.12) describes the existing setting and background information to help the reader understand the conditions that could be affected by the proposed program. According to CEQA, an EIR should define the threshold of significance and explain the criteria used to determine whether an impact is above or below that threshold. Significance criteria are identified for each environmental category to determine whether implementation of the program or project would result in a potentially *significant environmental impact* when evaluated against the environmental setting. In general, effects can be either significant (above threshold) or less than significant (below threshold). Finally, each section recommends mitigation measures, where possible, for those impacts identified as potentially significant.

Proposed Traffic Improvements

Proposed traffic improvements described in Chapter 2 include specific roadway improvements, e.g. passing lanes, turning lanes, shoulder widenings, paved turnouts, roadway extensions, and other lane additions or grade separations, upgrading bicycle lanes, and changes in signage and/or signalization at intersections.

Section 3.1

Geology, Soils, and Seismicity

Introduction

This section analyzes the proposed program's potential effects related to geology, geologic hazards, including earthquake and landslide hazards. It also discusses the proposed program's potential effects on soil resources and hazardous materials. Related discussions regarding water quality are found in Section 3.2, *Hydrology and Water Quality*.

Methodology

Key sources of data used in the preparation of this section include the following.

- Regional geologic maps and fault maps prepared by the California Department of Conservation's California Geological Survey (formerly the Division of Mines and Geology) and U.S. Geological Survey (USGS).
- Soils information from the Soil Survey of Monterey County (Soil Conservation Service 1978) and the Natural Resource Conservation Service's *Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin* (Natural Resource Conservation Service 2006).
- *Uniform Building Code* (1997) and *Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada* (1998) from International Conference of Building Officials.
- California Geological Survey Special Publication 42: *Fault-Rupture Hazard Zones in California—Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps*.
- Preliminary geotechnical exploration for the proposed Rancho Canada Village development (ENGEO Incorporated 2004).
- Draft Environmental Impact Report for Carmel Valley Road Improvement Plan, Monterey County (1990).
- Monterey County Municipal Code (December 2005).

- General Plan for Monterey County, Greater Monterey Peninsula Area Plan, and Carmel Valley Master Plan.

Specific reference information is provided in the text. No additional fieldwork was performed for this program EIR.

Environmental Setting

The following sections describe the physiographic setting, geomorphology, and geology of the proposed program area, with an emphasis on Quaternary geology and geologic hazards.

Physiography

The proposed program area is located in the Carmel Valley, a broad alluvial low that drains westward via the Carmel River into the Pacific Ocean. The program area lies within the Coast Ranges Geomorphic Province. This province extends from the northern California border with Oregon south to the Transverse Ranges, and from the western continental borderland inland to the Great Valley (Norris and Webb 1990). The Coast Ranges are a discontinuous complex of mountain ranges and valleys, characterized by a series of northwest trending mountains and valleys (Norris and Webb 1990). The ranges and valleys lie subparallel to the San Andreas fault, which is to the east of the program area, extending more than 600 miles from Pt. Arena to the Gulf of California (California Geological Survey 2002). The peaks range from 2,000 to 4,000 elevation above sea level, with some peaks as high as 6,000 feet above sea level. The relief can be large; Cone Peak (near the program area) is 5,155 feet (1,572 meters) high but lies only 4 miles (6.5 kilometers) from the coast (Harden 1998, Norris and Webb 1990).

Slopes in the program area range from flat on the valley floor to steep on surrounding hillsides. North of Carmel Valley Road, slopes are steep with a gradient of 30% or more. South of Carmel Valley Road, slopes are less steep, 0–20% (Monterey County 1990).

Geologic Framework

The following paragraphs describe the geology of the proposed program area and vicinity, focusing on the Coast Ranges and the San Andreas fault/plate boundary system. Regional geomorphic features within the Carmel and Monterey areas are largely related to complex tectonics of the San Andreas fault zone.

The Coast Ranges geomorphic province (geographic extent described above in *Physiography*) is characterized by en echelon northwest-trending mountain ranges formed over the past 10 million years or less by active uplift related to

complex tectonics of the San Andreas fault/plate boundary system (e.g., Norris and Webb 1990, Buising and Walker 1995, Atwater and Stock 1998).

The Coast Range province is geologically complex and is characterized by extensive folding and faulting. The eastern rangefront along the Great Valley margin is defined by faults that have been interpreted as contractile features associated with shortening along an axis approximately normal to the rangefront (e.g., Wong et al. 1988, Sowers et al. 1992, Unruh et al. 1992; see also Jennings 1977 for regional mapping), but may also locally accommodate a right-lateral component of motion (e.g., Richesin 1996). The eastern border is characterized by strike-ridges and valleys in resistant Mesozoic units (California Geological Survey 2002). The western border of the Coast Ranges includes the Pacific coast. The coastline is uplifted, terraced, and wave-cut (California Geological Survey 2002).

Two primary basement terranes underlie the Coast Ranges: mélange of the Franciscan Complex and crystalline rocks of the Salinian Block. The Franciscan Complex lies to the east of the San Andreas fault on the North American tectonic plate. The Salinian Block is west of the San Andreas on the Pacific plate. The proposed program area is located on the Salinian Block.

The Salinian Block extends from the southern extremity of the Coast Ranges to the north of the Farallon Islands. It consists of Cretaceous granitoid basement—granodiorite, quartz monzonite, quartz diorite, and other plutonic units, along with associated contact metamorphic units—overlain by sedimentary rock and alluvial deposits (Norris and Webb 1990). The sedimentary units consist of a thick layer of Cretaceous and Tertiary sedimentary rocks, which are in turn overlain by late Pleistocene and/or Holocene alluvial deposits of poorly consolidated clay, silt, sand, and gravel (California Geological Survey 2002, ENGEO 2004). In the program area, the Carmel River Valley fill is made up of alluvium, and the surrounding mountains are principally of middle Miocene marine and non-marine sedimentary rock overlying and faulted against granitic rock (Jennings and Strand 1958).

Soils

Over 25 soil associations have been identified in the program area (Monterey County 1986). They have been mapped by the U.S. Department of Agriculture's Natural Resources Conservation Service (formerly the Soil Conservation Service), and are described in detail in the soil surveys for Monterey County. Additional information is available through the National Soil Survey Geographic (SSURGO) Database and State Soil Geographic (STATSGO) database (Natural Resources Conservation Service 2004b, Natural Resources Conservation Service 2004c).

Table 3.1-1 lists the soils found in the program area and rates their speed of runoff, erosion hazard, shrink-swell potential, and risk of corrosion.

Table 3.1-1. Characteristics of Soils in Carmel Valley

Soil Label	Description	Notes	Speed of Runoff	Erosion Hazard	Shrink-Swell Potential	Risk of Corrosion Uncoated Steel	Risk of Corrosion Concrete
AsB	Arroyo Seco gravelly sandy loam, 2 to 5 percent slopes.	This is a gently sloping soil on alluvial fans and plains. The available water capacity is 4 to 6 inches and is reduced by the coarse fragments in the soil.	slow	slight	low	moderate	low
Am	Arnold-San Andreas complex, 50 to 75 percent slopes.	This soil complex is on hills and escarpments. The soils have little vegetation and are eroded in places.	rapid to very rapid	high	low	moderate	moderate
AvB	Arroyo Seco sandy loam, 2 to 5 percent slopes.	This soil is gently sloping on alluvial fans. The surface layer contains approximately 20% angular gravel 2 to 5 millimeters in diameter. The substratum is sand or sandy loam.	slow	slight	low	moderate	low
CbB	Chualar loam, 2 to 5 percent slopes.	This is a gently sloping soil of fans and terraces.	slow	slight	low	low	low
CcG	Cieneba fine gravelly sandy loam, 30 to 75 percent slopes.	This is a steep and very steep soil on mountainsides that have mainly southern exposures. The elevation is 1,000 to 4,000 feet.	very rapid	very high	low	low	low
EbC	Elder very fine sandy loam, 2 to 9 percent slopes.	This is a gently sloping and moderately sloping, slightly hummocky soil that occupies small areas in narrow valleys. It formed on alluvial fans, terraces, and flood plains. Permeability is moderate. The available water capacity is about 6 to 11 inches.	slow	moderate	low	moderate	moderate
Ga	Gamboa-Sur complex, 50 to 100 percent slopes..	The Gamboa series consists of somewhat excessively drained soils on uplands. Available water capacity is 2 to 4 inches.	very rapid	very high	low	moderate	moderate

Table 3.1-1. Continued

Soil Label	Description	Notes	Speed of Runoff	Erosion Hazard	Shrink-Swell Potential	Risk of Corrosion Uncoated Steel	Risk of Corrosion Concrete
GkB	Gorgonio sandy loam, 0 to 5 percent slopes.	This is a level to gently sloping soil on valley floors.	slow	slight	low	moderate	moderate
JbG	Junipero sandy loam, 30 to 75 percent slopes.	This is a steep and very steep soil on mountains. Elevations are 200 to 5,000 feet.	rapid	high	low	high	high
Jc	Junipero-Sur complex, 50 to 85 percent slopes..	The is a very steep and extremely steep soil.	very rapid	very high	low	high	high
LeC	Lockwood loam, 2 to 9 percent slopes.	This is a gently sloping to moderately sloping soil on alluvial fans and terraces. The available water capacity is 8 to 10 inches.	medium	moderate	moderate	high	low
Pf	Pico fine sandy loam.	This is a nearly level soil on floodplains. If left exposed during periods of high winds, the soil is subject to some soil blowing.	slow	slight	low	high	low
PnC	Placentia sandy loam, 2 to 9 percent slopes.	This is a gently sloping and moderately sloping soil on old alluvial fans and terraces. The available water capacity is 2 to 5 inches.	slow or medium	slight or moderate	low	moderate	low
Pm	Pits and dumps.	Areas where soil and underlying rock have been removed, and where waste accumulates; examples are quarries and sand and gravel pits.	variable	high	no estimate	no estimate	no estimate
Ps	Pavements and fluvents, frequently flooded.	This mapping unit consists of undulating areas of stratified sandy, gravelly, and cobbly sediments on floodplains. These areas are subject to annual flooding, scouring, and deposition. Drainage is excessive, and permeability is very rapid.	slow or very slow	moderate	low	moderate	low
Rc	Rock outcrop-Xerorthents association.	This mapping unit consists of rock outcrop and very shallow soils on strongly sloping to extremely steep mountains. The content of gravel, cobblestones, and stones; and of silt and debris varies considerably.	rapid	very high	no estimate	no estimate	no estimate

Table 3.1-1. Continued

Soil Label	Description	Notes	Speed of Runoff	Erosion Hazard	Shrink-Swell Potential	Risk of Corrosion Uncoated Steel	Risk of Corrosion Concrete
ScE	San Andreas fine sandy loam, 15 to 30 percent slopes.	This is a moderately steep soil on lower hillsides. The available water capacity is 3.5 to 6.5 inches.	rapid	moderate	low	moderate	moderate
ScG	San Andreas fine sandy loam, 30 to 75 percent slopes.	This is a steep and very steep soil on low hills. The available water capacity is 2 to 6.5 inches.	rapid or very rapid	high	low	moderate	moderate
SfD	Santa Lucia shaly clay loam, 2 to 15 percent slopes.	This is an undulating to rolling soil on ridgetops and foot slopes or in narrow valleys. The available water capacity is 2 to 5.5 inches.	medium	moderate	low	high	high
SfE	Santa Lucia shaly clay loam, 15 to 30 percent slopes	This is a moderately steep soil on uplands. The available water capacity is 2 to 5.5 inches.	medium	moderate	low	high	high
SfF	Santa Lucia shaly clay loam, 30 to 50 percent slopes.	This is a steep soil on uplands. The available water capacity is 2 to 5.5 inches.	rapid	high	low	high	high
Sg	Santa Lucia-Reliz association, 30 to 75 percent slopes.	The steep and very steep soils in this association are on uplands. The available water capacity is 2 to 5.5 inches.	rapid or very rapid	very high	low	high	high
ShE	Santa Ynez fine sandy loam, 5 to 15 percent slopes, eroded.	This is a gently rolling to rolling soil on low hills and terraces. The available water capacity is 2.5 to 3.5 inches.	medium	moderate	low	moderate	low

Table 3.1-1. Continued

Soil Label	Description	Notes	Speed of Runoff	Erosion Hazard	Shrink-Swell Potential	Risk of Corrosion Uncoated Steel	Risk of Corrosion Concrete
SnD	Shedd silty clay loam, 15 to 30 percent slopes.	This is a rolling soil on hilltops and ridgetops. The available water capacity is 5.5 to 8.5 inches. The surface layer seals over and becomes puddle very easily.	medium	moderate	moderate	high	low
SpD	Snelling-Greenfield complex, 5 to 15 percent slopes.	The gently rolling to rolling soils in this complex are on fans and wind-modified terraces.	medium	moderate	low	low	low
TbB	Tujunga fine sand, 0 to 5 percent slopes.	This is a level and undulating soil on flood plains and alluvial fans, mainly in small, narrow areas along drainageways.	slow	slight (but some channel erosion occurs)	low	low	low
VaG	Vista coarse sandy loam, 30 to 70 percent slopes.	This is a steep to very steep soil on ridges, characterized by cobbles, stones, and rock outcrops at the surface. The water capacity is 2 to 5 iches.	rapid	high	low	moderate	moderate
Xc	Xerorthents, loamy, 9 to 50 percent slopes.	These well drained, moderately steep and steep soils are on bluffs and banks along major rivers, on escarpments of terraces, on fans or alluvial plains, and along drainageways. Slopes are commonly 15 to 50 percent, but are 9 percent along narrow escarpments that have only a few feet of relief. Permeability is moderately slow. The available water capacity is 6 to 9 inches.	variable	variable	moderate	high	
Xd	Xerorthents, dissected, 35 to 90 percent slopes..	These are steep to extremely steep soils on bluffs along major rivers, on steep escarpments of fans and terraces, and on the banks of deeply entrenched streams and gullies that have narrow bottoms. Slopes are typically 50 to 65 percent, but range from 35 to 90 percent.	rapid or very rapid	high or very high	no estimate	no estimate	

Source: *Soil Survey of Monterey County*, United States Department of Agriculture Soil Conservation Service, 1978.

Geologic Hazards

Primary Seismic Hazards—Surface Fault Rupture and Groundshaking

Surface Fault Rupture

The program area is not within any Earthquake Fault Zone designated by the State of California under the Alquist-Priolo Earthquake Fault Zoning Act (California Division of Mines and Geology 2000) (see discussion below under *State Regulations and Policies*). The risk of surface fault rupture in the program area is thus considered minimal.

Groundshaking

Earthquakes on any of the region's principal active faults could cause groundshaking during the lifespan of the proposed program. The Uniform Building Code (UBC) defines active faults as faults "that have evidence of Holocene displacement (last 11,000 years), are exposed at the ground surface, [and] have reported slip rates greater than about 0.1 mm per year" (International Conference of Building Officials 1998). The state of California defines an active fault as a fault "that has had surface displacement during Holocene time (last 11,000 years)" (Hart and Bryant 1997). The intensity of ground shaking at any given location is a function of earthquake magnitude, distance from the earthquake epicenter, and the nature of the substrate.

Numerous active faults have been mapped in the vicinity of the program area. Note that many faults that have not yet been classified as "active" by the Alquist-Priolo Act are considered active by geologists because of the lengthy process for adding new faults to the list of active faults (Monterey County 1984). The UBC has identified the following faults[1] near the program area as type "B" faults, or faults which have an intermediate but substantial maximum moment magnitude and slip rate (International Conference of Building Officials 1998, California Geological Survey 1998, ENGEO Incorporated 2004, International Conference of Building Officials 1998, Monterey County 1990).[2]

- Monterey Bay–Tularcitos fault, which runs through Carmel Valley.
- Rinconada fault, around 6 miles (10 kilometers) north of Carmel Valley.
- San Gregorio fault (Sur region)[3], approximately 10 miles (16 kilometers) south of Carmel Valley.

[1] Faults classified by the UBC are considered in assessments of near-source factors for development sites because of their potential to generate groundshaking affecting the program area.
[2] UBC Type A faults are those which are "capable of producing large magnitude events and that have a high rate of seismic activity," and "C" faults are those which are "not capable of producing large magnitude events and that have a relatively low rate of seismic activity" (International Conference of Building Officials 1997). Type B faults are all faults other than type A or C faults.
[3] The segment of the San Gregorio fault that is present near Carmel Valley is a type B fault. Farther north, the San Gregorio fault is a type A fault.

The San Andreas fault should also be considered in assessing the potential for groundshaking effects (California Geological Survey 1998, ENGEO Incorporated 2004, Monterey County 1990). An earthquake of moderate magnitude or greater on other, more distant faults in the San Francisco Bay region could also cause groundshaking (ENGEO Incorporated 2004).

Figure 3.1-1 shows the location of the faults in the region that could affect Carmel Valley (Monterey County 1984), and Table 3.1-2 summarizes current information on earthquake recurrence intervals and maximum credible earthquakes for this area.

Table 3.1-2. Maximum Credible Earthquake and Recurrence Interval for Principal Active Faults in the Program Area

Fault	Magnitude of Maximum Credible Earthquake	Approximate Recurrence Interval
Program area faults		
Monterey Bay–Tularcitos	7.1[a]	2,600 years[a]
Rinconada	6.5–7.0[b]	N/A
San Gregorio (Sur region)	6.7[e]	N/A
Regional faults		
San Andreas	7.0–7.9[c]	210–400[c]
San Gregorio	7.0[c]	1,500 years[e]
Hayward	Entire fault: 7.1[c] Southern segment: 6.5[c]–6.9[e]	Entire fault: 330 years[c] Southern segment: 161[e]–167[d] years
Calaveras (southern)	6.2[c]	75 years[e]
Greenville	6.9[c]	Southern segment: 623 years[e] Northern segment: 644 years[e]

Note: See Figure 3.1 for fault locations.

Sources: [a] Santa Clara Valley Transportation Authority 2004, [b] City of El Paso de Robles 2003, [c] International Conference of Building Officials 1997, [d] Anderson et al. 1982, [e] U.S. Geological Survey Working Group on California Earthquake Probabilities 2003.

Secondary Seismic Hazards—Liquefaction and Ground Failure

Secondary seismic hazard refers to liquefaction and related types of ground failure, as well as seismically induced landsliding (see *Landslide and Other Slope Stability Hazards* below).

Liquefaction is a process by which soils and sediments lose shear strength and fail during episodes of intense seismic ground shaking. The susceptibility of a given soil or sediment to liquefaction is primarily a function of local groundwater

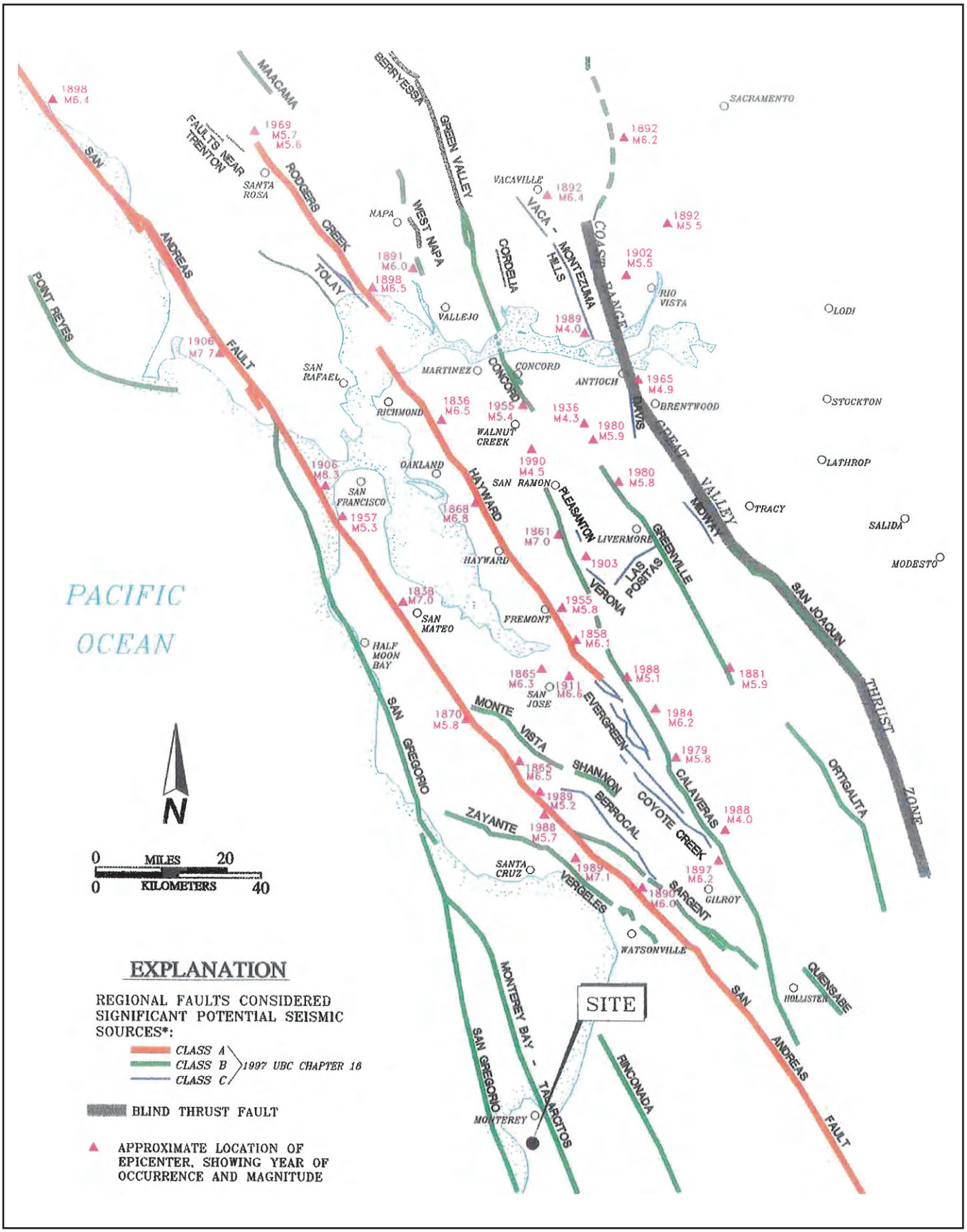


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Figure 3.1-1
Regional Faulting and Seismicity

conditions and soil and sediment properties such as particle size distribution and bulk density. Water-saturated fine sands and silts located within 50 feet of the surface are typically considered to be the most susceptible to liquefaction. Unsaturated, well-consolidated soils and sediments that consist of coarser or finer materials are generally less susceptible to liquefaction. The potential for liquefaction to occur in a given area is a function of a soils susceptibility to liquefaction and groundshaking potential (i.e., proximity to active faults).

As discussed in *Regulatory Setting* below, the State of California maps areas subject to secondary seismic hazards pursuant to the Seismic Hazards Mapping Act of 1990. To date, this effort has focused on areas such as the Los Angeles Basin–Orange County region and the San Francisco Bay region, where dense populations are concentrated along active faults; seismic hazards maps have not been issued for the program area (California Geological Survey 2006). However, site-specific studies suggest that some risk exists for liquefaction in the program area. Maps showing liquefaction potential of soils in the region (Dupré 1990) indicate that younger flood plain deposits which are common in the program area have a "high" potential for liquefaction and older flood plain deposits have a "moderate" potential for liquefaction (ENGEO Incorporated 2004).

Liquefaction can cause other types of ground failures such as disruption, sand boils, and ground settlement (ENGEO Incorporated 2004). Disruption and sand boils occur when liquefied soils vent through the ground surface. The presence of a nonliquefiable surface layer can prevent this venting, if it is sufficiently thick. The program area includes sites that could be susceptible to disruption and sand boils because liquefiable soils are covered by nonliquefiable surface materials that are too thin to prevent liquefied materials from venting (ENGEO Incorporated 2004).

In addition to liquefaction hazards, densification of sandy soils above and below groundwater levels could result in ground settlement in some sites in the program area during an earthquake. Since some of the surface materials have densities ranging from loose to medium and are potentially liquefiable, it is estimated that up to 4 inches of settlement may occur as a result of densification in some parts of the program area (ENGEO Incorporated 2004).

Landslide and Other Slope Stability Hazards

As stated above, the State of California has not yet issued seismic hazard maps for the Monterey 7.5′ quadrangle (see California Geological Survey 2006). However, landslides are common in Carmel Valley (Monterey County 1990). The combination of steep slopes, unstable substrate materials such as Monterey shale and old landslide deposits, seismic activity, and saturation during the rainy season combine to create substantial landslide risk (Monterey County 1990).

Other Hazards (Relating to Hazardous Materials)

Hazardous materials and hazardous wastes are defined in the CCR Title 22, Sections 66260 through 66261.10. As defined in Title 22, hazardous materials are grouped into four general categories:

- toxic (causes human health effects);
- ignitable (has the ability to burn);
- corrosive (causes severe burns or damages materials); or
- reactive (causes explosions or generates toxic gasses).

Hazardous materials are generally considered to be substances with certain chemical or physical properties that may pose a substantial present or future hazard to human health or the environment when improperly handled, stored, disposed, or otherwise managed. In general, discarded, abandoned, or inherently waste-like hazardous materials are referred to as hazardous wastes A hazardous material or waste can be present in liquid, semi-solid, solid, or gaseous form.

This section describes general environmental conditions in terms of potential sources of hazardous materials in soil or groundwater in the program area. The discussion of environmental conditions is primarily based on a review of the U.S. Environmental Protection Agency's (EPA) on-line environmental database of EPA-regulated hazardous waste sites.

There are four EPA-regulated handlers of hazardous waste in Carmel Valley:

- Pacific Bell, 6 Carmel Valley Road, Carmel Valley CA.
- American Telephone and Telegraph, 3 miles NNW of Carmel Valley CA.
- Kim Carmel Valley Cleaners, 19 E Carmel Valley Road, Carmel Valley CA.
- UC Berkeley Hastings Reserve, 38601 E Carmel Valley Road, Carmel Valley CA.

None of these facilities has been reported for violations associated with toxic releases to land, water or air, and none of them has an active or archived hazardous waste clean-up report according to EPA's databases (U.S. Environmental Protection Agency 2006). These facilities are not expected to be significant hazardous waste generators.

In addition to these known, or recorded sites, potential for unknown or unrecorded hazardous waste sites associated with historical agricultural land uses, underground storage tanks and other past waste generating land uses exists within the program area.

Regulatory Setting

Federal Regulations

Clean Water Act Section 402[p]

Amendments to the federal Clean Water Act (CWA) in 1987 added Section 402[p], which created a framework for regulating municipal and industrial storm water discharges under the National Pollutant Discharge Elimination System (NPDES) program. In California, the State Water Resources Control Board is responsible for implementing the NPDES program; pursuant to the state's Porter-Cologne Water Quality Control Act (Porter Cologne Act) (see discussion in Section 3.2), it delegates implementation responsibility to the state's nine Regional Water Quality Control Boards.

Under the NPDES Phase II Rule, any construction project disturbing 1 acre or more must obtain coverage under the state's General Permit for Storm Water Discharges Associated with Construction Activity. The purpose of the Phase II rule is to avoid or mitigate the effects of construction activities, including earthwork, on surface waters. To this end, General Construction Permit applicants are required to file a Notice of Intent to Discharge Storm Water with the Regional Water Quality Control Board (RWQCB) that has jurisdiction over the construction area, and to prepare a stormwater pollution prevention plan (SWPPP) stipulating best management practices (BMPs) that will be in place to avoid adverse effects on water quality.

Additional information on other aspects of the CWA is provided in Section 3.2, *Hydrology and Water Quality*.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) enables the EPA to administer a regulatory program that extends from the manufacture of hazardous materials to their disposal, thereby regulating the generation, transport, treatment, storage, and disposal of hazardous waste at all facilities and sites in the nation.

Comprehensive Environmental Response, Compensation, and Liability Act, and Superfund Amendment and Reauthorization Act Title III

The Comprehensive Environmental Response, Compensation, and Liability Act, also known as Superfund, was passed to facilitate the cleanup of the nation's toxic waste sites. In 1986, Superfund was amended by the Superfund Amendment and Reauthorization Act Title III (community right-to-know laws), also called the Emergency Planning and Community Right-to-Know Act, which

states that past and present owners of land contaminated with hazardous substances can be held liable for the entire cost of the cleanup even if the material was dumped illegally when the property was under different ownership. These regulations also establish reporting requirements that provide the public with important information on hazardous chemicals in their communities to enhance community awareness of chemical hazards and facilitate development of state and local emergency response plans.

State Regulations and Policies

Alquist-Priolo Earthquake Fault Zoning Act

California's Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (PRC Sec. 2621 *et seq*.), originally enacted in 1972 as the Alquist-Priolo Special Studies Zones Act and renamed in 1994, 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[4] 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 for purposes of the Act as referring to approximately 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

Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (PRC Sections 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 groundshaking, liquefaction[5], and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act: the state is charged with

[4] With reference to the Alquist-Priolo Act, a *structure for human occupancy* is defined as one "used or intended for supporting or sheltering any use or occupancy, which is expected to have a human occupancy rate of more than 2,000 person-hours per year" (California Code of Regulations, Title 14, Div. 2, Section 3601[e]).

[5] *Liquefaction* is a phenomenon in which the strength and stiffness of a soil are reduced by earthquake shaking or other rapidly applied loading. Liquefaction and related types of ground failure are of greatest concern in areas where well-sorted sandy unconsolidated sediments are present in the subsurface and the water table is comparatively shallow.

identifying and mapping areas at risk of strong groundshaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped Seismic Hazard Zones.

Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for sites within Seismic Hazard Zones until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans.

State Hazardous Waste Management Regulations

California hazardous waste management regulations are equal to or more stringent than federal regulations. The EPA has granted the State primary oversight responsibility to administer and enforce hazardous waste management programs. State regulations require planning and management to ensure that hazardous wastes are handled, stored, and disposed of properly to reduce risks to human health and the environment. Key state laws pertaining to hazardous wastes include the following.

- Hazardous Materials Release Response Plans and Inventory Act of 1985 (Business Plan Act).
- Hazardous Waste Control Act.
- Emergency Services Act.
- California Occupational Safety and Health Administration Standards.
- Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65), which requires labeling of substances known or suspected by the state to cause cancer.
- California Government Code Section 65962.5, which requires the Office of Permit Assistance to compile a list of possible contaminated sites in the state.
- In addition to regulating the management of hazardous wastes, state law also governs the prevention and suppression of wildfires in state responsibility areas (SRAs), which are primarily the responsibility of state fire protection agencies operating under the Department of Forestry, and SRA areas that have been reclassified so as to become the responsibility of local jurisdictions. Key state laws pertaining to wildfires include the PRC definition of State Responsibility Areas (PRC Section 4125 et seq.) and Defensible Space requirements (PRC Section 4290).

Local Regulations

Many cities and counties include geologic hazards as a factor in their land use planning, with the result that their general plans, local code, zoning ordinances, and building and earthwork standards reflect policies specifically aimed at reducing risk to life and property as a result of seismic and other types of geologic hazards. Monterey County has developed such methods specifically to address reduction of geologic hazards.

In California, earthwork and construction activities are regulated at the local jurisdiction level through a multi-stage permitting process—grading permits are required for most types of earthwork, and additional permits are typically needed for various types of construction. The purpose of local jurisdiction permit review is to ensure that proposed earthwork will meet the jurisdiction's adopted codes and standards. Most jurisdictions in California have adopted either the UBC or the California Building Code (CBC) as a minimum standard. The UBC was specifically developed to foster consistency in building laws across the nation by offering local jurisdictions, agencies, and organizations adequate minimum standards to guide local regulation of design and construction. The CBC expands on the UBC by providing more stringent standards addressing reduction of earthquake risk to structures in this seismically active state; however, many jurisdictions have evaluated the UBC as providing adequate protection. Monterey County Building Code is based on the CBC (2001 edition) (LexisNexis 2006).[6]

Portions of the CBC incorporated by Monterey County into Monterey County Building Code that are particularly relevant to geology and geologic hazards include Chapter 16 Division IV (*Structural Design Requirements—Earthquake Design*) and Chapter 18 (*Foundations and Retaining Walls*).

Depending on the extent, nature, and location of proposed earthwork and construction, the local jurisdiction permit process may require preparation of a site-specific geotechnical investigation, sometimes called a soils report. In some cases, this is required by state regulations (see discussion of Alquist-Priolo and Seismic Hazards Mapping Acts above). It may also be required by the UBC or CBC. The purpose of a site-specific geotechnical investigation is to provide a geologic basis for the development of appropriate project design. Geotechnical investigations typically assess bedrock and Quaternary geology, geologic structure, soils, and previous history of excavation and fill placement; as appropriate, they may also include information specifically addressing the

[6] Title 18 Buildings and Construction, Chapter 18.08 Monterey County Building Code, 18.08.010 Building Code adopted:

> "The California Building Code, 2001 Edition, Volumes 1 and 2 (based upon the 1997 Uniform Building Code), copyrighted by the California Building Standards Commission and the International Conference of Building Officials, including the Chapters 12, 15, 23, and 31 of the Appendix, Division III of Chapter 34 of the Appendix, and the Appendix Chapter provisions mandated by the State of California Building Standards Codes, copies of which are on file as required by law, is adopted and incorporated into this Code by reference, with the modifications set forth in this Chapter. The above referenced California Building Code, as amended by this Chapter, shall be known as the Monterey County Building Code. (Ord. 4189, 2003; Ord. 3946, 1997.)

stipulations of the Alquist-Priolo Act, the Seismic Hazards Mapping Act, and/or local regulations.

Monterey County General Plan

Policy 3.1.1. Erosion control procedures shall be established and enforced for all private and public construction and grading projects.

Policy 3.2.2. Lands having a prevailing slope above 30% shall require adequate special erosion control and construction techniques.

Policy 15.1.4. All new development and land divisions in designated high hazard zones shall provide a preliminary seismic and geologic hazard report which addresses the potential for surface ruptures, ground shaking, liquefaction, and landsliding before the application is considered complete. This report shall be completed by a registered geologist and conform to the standards of a preliminary report adopted by the County.

Policy 15.1.6. Prior to the construction of a new public facility or critical structure within a high hazard zone, the County shall require a full geological investigation by a registered geologist.

Policy 15.1.7. Prior to the issuance of a building or grading permit, the County shall require liquefaction investigations for proposed critical use structures and multi-family dwellings over four units when located in areas of moderate or high hazard for liquefaction or subject to the following conditions:

- location in primary floodways; and
- groundwater levels less than 20 feet, as measured in spring and fall.

Policy 15.1.8. The County should require a soils report on all building permits and grading permits within areas of known slope instability or where significant potential hazard has been identified.

Policy 15.1.11. For high hazard areas, the County should condition development permits based on the recommendations of a detailed geological investigation and soils report.

Policy 15.1.12. The County shall require grading permits to have an approved site plan which minimizes grading and conforms to the recommendations of a detailed soils or geology investigation where required.

Policy 15.1.15. Side castings from the grading of roads and building pads shall be removed from the site unless they can be distributed on the site so as not to change the natural landform. An exception to this policy will be made for those cases where changes in the natural landform are required as a condition of development approval.

Policy 15.2.2. The County should encourage the State Department of Transportation (Caltrans) to review its facilities and roadways within the County to assess potential impact of seismic hazards; comments should be forwarded to the County.

Policy 18.1.1. The County shall establish land use controls to reduce undesirable effects of hazardous chemicals.

Greater Monterey Peninsula Area Plan

Policy 3.1.1. Erosion control procedures shall be established and enforced for all private and public land clearing projects.

Policy 15.1.1.1. The Greater Monterey Peninsula Seismic Hazards Map and Landslide and Erosion Susceptibility Map shall be used to delineate high hazard areas addressed by the countywide General Plan and this area plan. Hazard categories IV, V, and VI from these maps shall be considered to be "high hazard" areas for the purpose of applying General Plan and/or area plan policies in the Greater Monterey Peninsula Planning Area. These maps may be revised as new, accepted investigations dictate.

Policy 15.1.11.1. For high hazard areas, the County shall require, as a condition of development approval, a detailed geological investigation and soils report and shall further require, as a condition of approval, that the recommendations of that report be followed.

Policy 18.1.2. The County shall establish land use controls and other regulations to reduce undesirable effects of hazardous materials.

Policy 18.1.3. The Board of Supervisors shall direct the County Health Department to inventory all abandoned dump and landfill sites in the Planning Area. The Health Department shall report the results of its inventory to the Board of Supervisors and shall recommend criteria for determining the magnitude of possible health hazard present at each site, a procedure for determining which abandoned sites should be tested, and criteria which must be met as a condition of development approval on or adjacent to abandoned sites. The Health Department report shall also contain recommendations regarding payment for required testing.

Carmel Valley Master Plan

Policy 3.1.1.1 (CV) A soils report in accordance with the Monterey County Grading and Erosion Control ordinances shall be required for all changes in land use which require a discretionary approval in high or extreme erosion hazard areas as designated by the Soil Conservation Service manual "Soil Surveys of Monterey County". This report shall include a discussion of existing or possible future deposition of upslope materials or downslope slippage for each site.

Policy 3.1.1.2 (CV) As part of the building permit process, the erosion control plan shall include these elements:

- Provision for keeping all sediment on-site.

- Provision for slow release of runoff water so that runoff rates after development do not exceed rates prevailing before development.
- Revegetation measures that provide both temporary and permanent cover.
- Map showing drainage for the site, including that coming onto and flowing off the property.

Storm drainage facilities shall be designed to accommodate runoff from 10-year or 100-year storms as recommended by the Monterey County Flood Control and Water Conservation District.

Policy 3.1.1.3 (CV) All exposed areas within development projects subject to erosion and not involved in construction operations shall be protected by mulching or other means during the rainy season (October 15 - April 15).

Policy 3.1.4 (CV) Grading shall be minimized through the use of step and pole foundations, where appropriate.

Policy 3.1.5 (CV) The amount of land cleared at any one time shall be limited to the area that can be developed during one construction season. This prevents unnecessary exposure of large areas of soil during the rainy season.

Policy 3.1.6 (CV) Site control shall be established throughout the Master Plan area, including lots of record and utilities extensions, in order to minimize erosion and/or modification of landforms.

Policy 3.1.7 (CV) The combination of generally steep slopes and often thin and erosive soils will present a definite potential for erosion and siltation which may have adverse effects both on and off- site. Development shall therefore be carefully located and designed with this hazard in mind.

Policy 3.1.8 (CV) The native vegetative cover must be maintained on areas prone to rapid runoff as defined in the Soil Survey of Monterey County. These include the following soils:

a. Santa Lucia shaly clay loam, 30-50% slope

b. Santa Lucia-Reliz Association, 30-75% slope

c. Cieneba fine gravelly sandy loam, 30-70% slope

d. San Andreas fine sandy loam, 30-75% slope

e. Sheridan coarse sandy loam, 30-75% slope

f. Junipero-Sur complex, 50-85% slope (Jc)

Policy 3.1.9 (CV) A condition of approval requiring on-going maintenance of erosion control measures identified in the erosion control plan shall be attached to all permits allowing development in areas prone to slope failure, including, but not limited to, the following:

- all development in areas classified as highly susceptible to slope failure;
- all development on sites with slopes of greater than 20%; and

- where roadways are cut across slopes greater than 30%, or across slopes with thin and highly erosive soils.

Policy 3.1.10 (CV) In addition to required on-site improvements for development projects, the County shall impose a fee to help finance the improvement and maintenance of drainage facilities as identified in the Master Drainage Plan for Carmel Valley.

Policy 3.1.11 (CV) Development of on-site stormwater retention and infiltration basins is encouraged in groundwater recharge areas subject to approval by the Monterey Peninsula Water Management District, the County Health Department, the County Flood Control and Water Conservation District and the County Surveyor.

Policy 3.1.12 (CV) A comprehensive drainage maintenance program should be established by the formation of either sub-basins or valley-wide watershed zones through the cooperation of the County Department of Public Works, the Monterey County Flood Control and Water Conservation District and the Monterey Peninsula Water Management District.

Policy 3.1.14 (CV) Containment structures or other measures shall be required to control the runoff of pollutants for major commercial areas or other sites where chemical storage or accidental chemical spillage is possible.

Policy 3.1.15 (CV) An erosion control plan shall be required for all discretionary development permits and all submittals for areas identified as having a high or extreme erosion hazard prior to accepting such applications as complete.

Policy 3.2.3.1 (CV) Due to the highly erosive qualities of local soils and the fragileness of the native vegetation, livestock (i.e., horses, cattle, goats, etc.) shall not be permitted in proposed developments unless a livestock management plan is first approved.

Policy 4.2.4 (CV) Development adjacent to agricultural lands shall be planned to minimize adverse effects on the productivity of the agricultural soils.

Policy 17.4.15. In high and very high fire hazard areas, as defined by the California Department of Forestry and shown on California Department of Forestry Fire Hazard Maps, roof construction (except partial repairs) of fire retardant materials, such as tile, asphalt or asbestos combination, or equivalent, shall be required as per Section 3203 (e) (excluding 11) of the Uniform Building Code, or as approved by the fire district. Exterior walls constructed of fire resistant materials are recommended but not required. Vegetation removal will not be allowed as a means of removing high or very high fire hazard designation from an entire parcel.

Policy 17.4.16. Where feasible, proposed trail easements in high and extreme fire hazard areas shall be designed to provide effective firebreak zones and shall be designed for access to Laureles Grade, Tierra Grande, and other roads for emergency vehicle access.

Criteria for Determining Significance

In accordance with State CEQA Guidelines, applicable federal and state regulations, and local plans and policies, the proposed program would be considered to result in a significant impact if it would:

A. Seismic Hazards

Expose people or structures to potential substantial adverse effects resulting from the rupture of a known earthquake fault, seismic ground shaking, landslides, or seismic-related ground-failure, including liquefaction, and that cannot be mitigated through the use of standard engineering design techniques.

B. Landslides and Slope Stability

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 an onsite or offsite landslide or slope failure.

Be located on an existing slope with a gradient greater than 30 percent.

C. Erosion

Result in substantial soil erosion or the loss of topsoil and subsequent sedimentation into local drainage facilities and water bodies.

D. Soil Constraints

Be located on an expansive soil, as defined by the CBC (1997) or be subject or to other soil constraints that might result in deformation of foundations or damage to structures, creating substantial risks to life or property.

E. Hazardous Materials

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.

Create a significant hazard to the public or the environment through the release of hazardous materials into the environment.

Impacts and Mitigation Measures

A. Seismic Hazards

Impact GEO-1: Expose People or Structures to Risk of Rupture of a Known Earthquake Fault (Less Than Significant)

No earthquake fault zone as designated under the Alquist-Priolo Earthquake Fault Zoning Act traverses the project area. The risk of surface fault rupture is **less than significant**. No mitigation is required.

Impact GEO-2: Expose People or Structures to Risk of Seismic Groundshaking (Less Than Significant With Mitigation)

Because the proposed roadway improvements are located within a seismically active area, in close proximity to several major active faults, the area is likely to experience strong groundshaking during the lifespan of the proposed program. This groundshaking could cause substantial damage to improperly designed and constructed roadway improvements and result in injury to people. This is considered a potentially significant impact. Implementation of **Mitigation Measure GEO-2.1** would reduce this impact to a **less-than-significant** level.

> **Mitigation Measure GEO-2.1: Conduct Project-Level Geotechnical Investigations and Design all Project Facilities to Avoid or Minimize Groundshaking-Related Impacts**
> The County should conduct site-specific fault investigations during the preliminary and/or final design stage of all proposed roadway and intersection improvements. If it is determined at the project-level that groundshaking or seismically induced land failure poses a substantial threat to any of the proposed improvements, the affected improvements would be designed to avoid or minimize the potential for damage resulting from groundshaking or seismically induced land failure. The exact measures that would be used to avoid or minimize damage resulting from groundshaking are not currently known, but could include reinforcing project-related structures or relocating certain project facilities to avoid active fault traces.

Impact GEO-3: Expose People or Structures to Risk of Earthquake-Induced Liquefaction (Less Than Significant With Mitigation)

Much of Carmel Valley is located on Holocene deposits (Clark et al. 1997), which are susceptible to liquefaction (Monterey County 1984). Some of the proposed roadway improvements may be located on these deposits. Liquefaction

induced by an earthquake on any of the active and potentially active faults in the region could cause substantial damage to improperly designed and constructed roadway facilities and result in injury to people using these facilities. This is considered a potentially significant impact. Implementation of **Mitigation Measure GEO-3.1** would reduce this impact to a **less-than-significant** level.

Mitigation Measure GEO-3.1: Conduct Site-Specific Geotechnical Investigations for Liquefaction and Implement Appropriate, Proven Geotechnical Methods

The County will conduct site-specific geotechnical investigations before or during the preliminary and/or final design stages of the proposed traffic improvements to identify and characterize areas that may be susceptible to liquefaction. These site-specific investigations may range from limited screening investigations to identify obvious liquefaction hazards, to very detailed subsurface investigations. The findings of these site-specific investigations will serve as the basis for the final design of the proposed improvements and ensure that appropriate geotechnical methods are used to avoid or minimize the potential for liquefaction to damage project-related facilities. The exact measures that would be used to reduce the liquefaction hazard are not currently known, but the measures may include standard practices such as the following:

- removal or treatment of potentially liquefiable soils and sediments,
- construction of edge containment structures (e.g., berms, dikes, retaining structure, compacted soil zones),
- installation of drainage structures to lower the groundwater table,
- in-situ ground densification, and
- other types of ground improvement (California Division of Mines and Geology 1997).

B. Landslides and Slope Stability

Impact GEO-4: Expose People or Structures to Risk of Landslide or Slope Failure (Less Than Significant With Mitigation)

California's Seismic Hazards Mapping Program, which maps areas susceptible to risks as defined by the Seismic Hazards Mapping Act, has not yet mapped the program area and thus does not provide guidance at this time for secondary seismic hazards in this area (California Geological Survey 2006). However, Monterey County has identified Carmel Valley and the surrounding hillsides as being highly susceptible to landslide, erosion, and slope failure (Monterey County 1984). Construction of the proposed roadway improvements, as well as the post-construction phase, could induce onsite or offsite slope failures. In addition, slope failures caused by earthquakes, high rainfall, project activities, or other means could cause substantial damage to improperly designed and

constructed roadway facilities, and could result in injuries to people using these facilities. This is considered a potentially significant impact. Implementation of **Mitigation Measure GEO-4.1** would reduce this impact to a **less-than-significant** level.

Mitigation Measure GEO-4.1: Conduct Site-Specific Geotechnical Investigations for Slope Stability and Implement Appropriate, Proven Geotechnical Methods

The County will conduct site-specific geotechnical investigations before or during the preliminary and/or final design stages of the proposed traffic improvements to identify and characterize potential slope failure hazards. These site-specific investigations may range from limited screening investigations to identify obvious slope failure hazards, to very detailed subsurface investigations. The findings of these investigations will serve as the basis for the final design of the proposed improvements and ensure that appropriate geotechnical methods are used to avoid or minimize the potential for slope failures and associated damage. The exact methods that will be used to address potential slope failure hazards are not currently known, but will likely involve avoiding the failure hazard by relocating the project in question, protecting susceptible areas from the failure by constructing protective structures, and reducing the hazard to an acceptable level by stabilizing unstable slopes (California Division of Mines and Geology 1997).

Impact GEO-5: Destabilize Steep Slopes (Less Than Significant with Mitigation)

Some of the roadway improvements under the proposed program could be constructed on existing slopes with a gradient greater than 30 percent. Grading could destabilize existing slopes and create unstable manufactured (cut-and-fill slopes) slopes. Resulting slope failures (e.g., landslides and debris flows) could cause damage to existing structures and existing and newly constructed roadways, and thus expose people to a resultant risk. Potential impacts resulting from construction on steep slopes and manufacture of steep slopes are considered significant. Implementation of **Mitigation Measure GEO-5.1** would reduce this impact to a **less-than-significant** level.

Mitigation Measure GEO-5.1: Implement Recommended Design Criteria of the Geotechnical Investigation Wherever Steep Slopes Would Be Graded or Manufactured

The County shall implement the recommended design criteria of the geotechnical investigation during the final design and construction of the proposed improvements. All design criteria shall be in conformance with the standards of the California Building Code and all other applicable County and local building code standards. If seepage or groundwater is observed within cut or fill slopes, additional measures will be necessary.

C. Erosion

Impact GEO-6: Cause Soil Erosion or Loss of Topsoil and Subsequent Sedimentation (Less Than Significant With Mitigation)

Nearly all of the proposed roadway improvements would involve some land clearing, grading, and other ground-disturbing activities that could temporarily increase soil erosion rates during and shortly after project construction. Although the soils in the lowlands of Carmel Valley, because of slope and composition, are fairly resistant to erosion, construction-related erosion could result in the loss of a substantial amount of nonrenewable topsoil and could adversely affect water quality in nearby surface waters (see detailed discussion in Section 3.2, *Hydrology and Water Quality*). Further, there are soils on the slopes along Laureles Grade that are highly susceptible to erosion. This is considered a potentially significant impact. Implementation of **Mitigation Measure GEO-6.1** would reduce this impact to a **less-than-significant** level.

Mitigation Measure GEO-6.1: Prepare and Implement an Erosion and Sediment Control Plan, Storm Water Pollution Prevention Plan, or Water Pollution Control Plan at the Project Level

The County should prepare and implement an erosion and sediment control plan (ESCP), SWPPP, or Water Pollution Control Plan (WPCP) for each proposed improvement project as needed. Each of these documents would contain details and specifications for a variety of standard BMPs, such as those recommended by the California Department of Transportation (Caltrans) (Camp Dresser & Mckee 2000), that would be implemented to control erosion, stormwater runoff, sediment, and other construction-related pollutants during project construction. The ESCP would remain in effect until all areas disturbed during construction are permanently stabilized. The specific BMPs that would be incorporated into the ESCP would be determined during the final design phase of the selected alternative. They would likely include, but not be limited to, one or more of the following:

- **Time and sequence construction activities to minimize ground disturbance:** The County may develop a construction schedule prior to the commencement of construction to help avoid or minimize ground disturbing activities during the rainy season (October 15–April 15), sequence construction activities in a manner that would minimize the amount of ground disturbed at any given time, and allow for the timely and proper implementation of appropriate erosion and sediment control BMPs.
- **Stage construction equipment and materials away from surface water.** All equipment and construction materials may be staged away from existing stream channels and other surface water bodies.

To the extent possible, equipment and materials would be staged in areas that have already been disturbed.

- **Minimize ground disturbance and preserve existing vegetation.** The County may minimize ground disturbance and the destruction of existing vegetation during project construction. This would be accomplished in part through the establishment of designated equipment staging areas, ingress and egress corridors, and equipment exclusion zones before the any land clearing, grubbing, or grading operations begin.
- **Apply mulch and seed:** The County may apply mulch and seed mixtures hydraulically or using other appropriate methods to all graded and otherwise disturbed areas to reestablish vegetative ground cover and stabilize all graded and otherwise disturbed surfaces once construction is complete. Mulch and seed may also be applied to temporarily stabilize areas that would need to be re-disturbed after an extended period of inactivity. Hydraulic mulch and seed application may be used in conjunction with other erosion and sediment control BMPs and supplemented with the planting of native or ornamental trees and shrubs.
- **Install erosion control blankets:** The County may install erosion control blankets or other suitable materials to protect graded and otherwise disturbed surfaces from raindrop impact and wind erosion. Erosion control blankets are particularly well suited and appropriate for areas where slope gradients are steep, the hazard of erosion is high, or vegetation is likely to reestablish slowly because of harsh post-construction soil conditions.
- **Intercept and divert stormwater run-on:** If appropriate, the County may construct temporary earthen dikes, lined drainage swales, or slope drains to intercept and divert stormwater run-on away from areas with high erosion hazard (e.g., steep fill slopes) and toward stable outlets and watercourses. It may be necessary to use other erosion control methods, such as check dams or energy dissipater structures, to prevent the scouring and erosion of newly graded diversion structures.
- **Install silt fences or fiber rolls:** The County may install silt fences or fiber rolls in the construction area to slow and filter sediment from construction area runoff.
- **Install storm drain inlet protection:** The County may install filter fabric fence, drop inlet sediment traps, sandbag barriers, or other similar devices at storm drain inlets to detain and filter sediment-laden runoff from the construction area before it is discharged into drainage systems or natural watercourses.
- **Stabilize grading spoils:** Grading spoils generated during the construction may be temporarily stockpiled in stable areas located away from stream channels and other surface water bodies. Silt fences and fiber rolls may be installed around the base of the

temporary stockpiles to intercept runoff and sediment draining from the stockpiles. If necessary, temporary stockpiles may also be covered with an appropriate geotextile to provide protection from wind and water erosion.

D. Soil Constraints

Impact GEO-7: Expose People or Structures to Risks Resulting from Expansive Soils and Sediments (Less Than Significant)

The soil survey of Monterey County indicates that no soils with a shrink-swell potential (i.e., potentially expansive soils) greater than "moderate" occur in the program area. For this reason, the risk of adverse effects resulting from expansive soils is considered a **less-than-significant** impact. No mitigation is necessary.

Impact GEO-8: Expose People or Structures to Risks Resulting from Land Subsidence or Settlement (Less Than Significant With Mitigation)

Some of the proposed roadway improvements could be located on unconsolidated Holocene deposits (Clark et al. 1997) which could be susceptible to uneven settlement, which could cause substantial damage to improperly designed and constructed project facilities and result in injury to people using these facilities. This is considered a potentially significant impact. Implementation of **Mitigation Measure GEO-8.1** would reduce this impact to a **less-than-significant** level.

Mitigation Measure GEO-8.1: Conduct Site-Specific Geotechnical Investigations for Settlement and Subsidence and Implement Appropriate, Proven Geotechnical Methods

The County will conduct site-specific geotechnical investigations before or during the preliminary and/or final design stages of all proposed improvements to identify areas with the potential for settlement and subsidence. The findings of these investigations will serve as the basis for the final design and ensure that appropriate, proven geotechnical methods are used to avoid or minimize the potential for settlement and subsidence to damage project-related facilities. The exact methods that will be used to address potential land subsidence and settlement issues are not currently known, but will likely involve improvement of the ground conditions by removing or replacing problematic soils and sediments.

E. Hazardous Materials

Impact GEO-9: Expose People to Untreated Human Waste (No Impact)

The roadway improvements under the proposed program would not require new septic facilities or sewer lines. Therefore, there is **no impact**.

Impact GEO-10: Expose People or the Environment to Hazardous Waste Contamination (Less Than Significant With Mitigation)

None of the four facilities that handle hazardous waste in Carmel Valley has been cited for a violation of regulations or for release of hazardous waste into land, water or the air. Some of the proposed roadway improvements may be located adjacent to or near one of these four facilities, and construction activity could encroach on the operations of these facilities, thus potentially exposing people and the environment to hazardous waste contamination. In addition to the known hazardous waste handling facilities, there could be other, unknown and/or unrecorded hazardous waste sites within the program area that could be encountered during ground-disturbing activities associated with project construction. If construction activities disturbed any unknown hazardous waste sites, people and the environment could potentially be exposed to hazardous waste contamination. This impact is considered potentially significant. Implementation of **Mitigation Measures GEO-10.1 and GEO-10.2** would reduce this impact to a **less-than-significant** level.

Mitigation Measure GEO-10.1: Perform a Phase 1 Preliminary Environmental Site Assessment Before Beginning Construction Activities

Before beginning construction activities, the County will retain a qualified hazardous materials compliance engineer to perform a Phase 1 Environmental Site Assessment for specific project site(s) to identify locations of potential hazardous wastes sites within the specific project area. In addition to identification of potentially hazardous waste sites, the Phase I (Environmental Site Assessment) will propose recommendations on further study of potential contaminated sites, and/or further procedures to implement in order to comply with all applicable, federal, state, and local hazardous waste handling regulations.

Mitigation Measure GEO-10.2: Coordinate Construction Activities with Health Department and Waste Handler

If construction activities could encroach on a site where hazardous materials are present, as identified either by the EPA or by the Phase 1 Environmental Site Assessment, the County will coordinate with appropriate State agencies, Monterey County Health Department and with the waste handler, if applicable, prior to commencement of any construction activities to determine proper steps in handling any

encounters with contaminants, training construction personnel and all other procedures for the proper handling of hazardous wastes.

Section 3.2

Hydrology and Water Quality

Introduction

This assessment was limited to a qualitative evaluation of environmental impacts with respect to hydrology and water quality. The assessment did not include site-specific data review, laboratory analysis, or inspection of potential project sites. A more detailed hydrology and water quality impact analysis would be required during development of proposed individual roadway improvement projects.

Environmental Setting

General Climate

Carmel Valley is on the central California coast, immediately adjacent to the Pacific Ocean. The climate in this region consists of generally mild temperatures year-round, with high temperatures varying from the low 60s in the winter to the high 60s in the summer. Average annual precipitation is 18 to 20 inches, and the majority of rainfall occurs in winter.

Hydrology

Regional Hydrology

The proposed program is within the Carmel River Watershed in the northern portion of the Central Coast hydrological region, which spans the coastal portion of California from the northern reaches of Monterey Bay in the north to the Santa Barbara Channel Islands and adjacent coast in the south. The primary water features of the watershed's northern portion include the Pacific Ocean and the coastline of the Monterey Peninsula, small inland drainage basins of the Peninsula, the Carmel River, and Carmel Bay. The Carmel River originates in the Santa Lucia Range of the Coast Mountains and flows through the northwest-southeast trending Carmel Valley, with the river flowing toward the northwest

and draining into the Carmel Bay, which is situated opposite the Monterey Bay, south of the Monterey Peninsula.

Carmel Valley Hydrology

Surface Hydrology

The Carmel Valley Basin drains a 250-square-mile area that includes all of the Carmel Valley. Minor creeks and drainages generally lead to the Carmel River, which carries almost all of the area's drainage to the Carmel Bay. Precipitation provides the only source of water for the basin. Generally, the Carmel River flows naturally only during the winter and spring months, because the basin receives the majority of its annual rainfall between November and April. Rainfall averages between 15 to over 40 inches per year. Seasonal precipitation patterns are further complicated by the fact that demand in the watershed exceeds the available supply.

Dry season releases from the San Clemente and Los Padres Reservoirs, both upstream (southeast) of the proposed traffic improvement projects area, and the Carmel River, are timed to recharge the Carmel Valley Aquifer and to provide adequate flow for steelhead trout spawning, when necessary. Seasonal flow in the Carmel River is an important component of regional steelhead reproduction, as has historically supported a run of the federally listed species.

Groundwater Hydrology

The proposed program area is underlain by the Carmel Valley Aquifer, a highly permeable, unconfined alluvial aquifer present beneath the bed, floodplain, and terraces of the Carmel River. The aquifer extends from San Clemente Dam to the Carmel River Lagoon at the Pacific Ocean. Similar to flows in the river itself, groundwater levels in the aquifer are dependent on seasonal rain and are supplemented by releases from the nearby reservoirs, when necessary. The aquifer recharges rapidly after storm events following extended dry periods. Approximately 85 percent of the recharge in the aquifer occurs through the Carmel Riverbed, with additional water coming from tributary drainages, precipitation, inflow from surface bedrock, and return flow from irrigation systems and septic tanks. The Carmel Valley Aquifer system functions as a water supply source for a large portion of the local area.

Flooding

Major flood events have occurred in Monterey County during the flowing years: 1911, 1914, 1922, 1926, 1931, 1937, 1938, 1941, 1943, 1945, 1952, 1955, 1956, 1958, 1962, 1966, 1969, 1973, 1978, 1983, 1995, and 1998 (Monterey County Water Resources Agency 2003). Flooding has occurred along the Carmel River on multiple occasions. Some private levees have been constructed along the

Carmel River downstream of the program area, although they are not adequate to hold the 100-year flood (Federal Emergency Management Agency 1991). Prior to 1991, newspaper reports of flooding along the Carmel River included reports that were made in 1941 (Jamesburg Road flooded in the upper Carmel Valley), in 1943 (8,000 cubic feet per second [cfs] was spilling over San Clemente Dam), and in 1958 (numerous homes along the Carmel River were flooded) (Federal Emergency Management Agency 1991).

In more recent history, two flooding events occurred along the Carmel River in January and March of 1995. During the March event, flooding in the Carmel Valley damaged 400 residences and 68 businesses, the Highway 1 Bridge over the Carmel River was closed, and untreated sewage was released into the Carmel River (Monterey County Water Resources Agency 2003).

At the USGS gage near the City of Carmel, the 100-year flow has been estimated to be 29,100 cfs. Monterey County enforces flood control standards within 100-year flood hazard areas in accord with National Flood Insurance Program (NFIP) requirements, as discussed in more detail below (see Regulatory Setting).

Water Quality

Surface Water Quality

Surface water quality depends primarily on the mineral composition of the soils and associated parent materials within a watershed, hydrologic conditions, and sources and timing of contaminant transport within the watershed. During the summer low-flow conditions, natural watercourses may consist entirely of incidental urban runoff from landscape irrigation and other residential uses. Contaminants of concern during the summer include fertilizers and pesticides, detergents and other household chemical uses; oil and grease; and accidental or illicit chemical spills. Contaminants of concern during the dry summer season include biostimulatory nutrients (e.g., nitrogen and phosphorus), inorganic salts, turbidity, synthetic organic compounds, and trace metals.

During peak winter streamflow periods, water quality is largely a function of stormwater contaminant transport. Potential contaminants include those described above, and can also include runoff from roads and other impervious surfaces (e.g., parking lots, driveways, buildings), and other deposits that have accumulated on the ground surface (e.g., organic litter, trash, animal wastes). Winter stormwater is also responsible for a majority of soil erosion that occurs during the year, particularly from areas that have been previously disturbed by construction activities, agriculture, or natural geologic processes.

Winter stormwater runoff often is relatively clean, and low in dissolved solids due to the large proportion of rainwater; however, dissolved solids loading is likely higher in the wet season. Runoff from urban areas can contain elevated concentrations of heavy metals, oil and grease, antifreeze, and other synthetic organic compounds. Other contaminants of concern include turbidity, settleable

and total suspended solids, biochemical oxygen demand, pesticides, and nutrients.

The Carmel River is not listed by the State as an impaired water body pursuant to the CWA Section 303(d) (see discussion below). Water quality in the Carmel River has been measured by the Monterey Peninsula Water Management District (MPWMD) since 1991. Sampling has primarily occurred at two locations, below Los Padres Dam and below San Clemente Dam. The following water quality constituents are typically measured: temperature (degrees Fahrenheit [ºF]), dissolved oxygen (milligrams per liter [mg/L]), pH, carbon dioxide (mg/L), specific conductance (microSiemens per centimeter [µS/cm]), and turbidity (nephelometric turbidity units [NTU]) (Monterey Peninsula Water Management District 2004).

Water temperature data have been collected at six additional locations along the Carmel River since 1996. In general, water temperatures in the river are within the desirable range for aquatic species in the winter and spring months. Lower temperatures are found during these seasons due to larger and cooler river inflows. As flows drop and the water warms, temperatures often exceed the recommended range for aquatic species during the summer and fall months. For example, maximum measured daily water temperatures can exceed 70º F in the main stem, which is considerably higher than the optimal 50º F to 60º F range identified for steelhead growth. All six water temperature monitoring stations indicate stressful temperature conditions during the summer and fall seasons (Monterey Peninsula Water Management District 2004).

Dissolved oxygen values measured on the Carmel River generally meet or exceed 7 mg/L, while measured pH values uniformly fall between 7 and 8.5. Measured carbon dioxide values occasionally rise above the 10 mg/L upper limit recommended for fish. Measured specific conductance has ranged from 129 to 550 µS/cm, with an average of 267 uS/cm over the sampling period (Monterey Peninsula Water Management District 2004).

Measured turbidity in Carmel River is typically very low. Increases in turbidity have been observed during large winter storm events and for several months after large-scale landslide and bank erosion activity within the watershed. Turbidity levels also appear to have increased after water levels in San Clemente Reservoir were lowered in June 2003, releasing a large amount of previously trapped sediment. It is unclear how long turbidity levels in the Carmel River will remain elevated from this event, as monitoring data are only available through August 2004 (Monterey Peninsula Water Management District 2004).

Chemical pollutants do not appear to be a substantial concern; however, the *Physical and Hydrological Assessment of the Carmel River Watershed* (The Watershed Institute, November 2004) identified several factors that presently affect water quality in the region. These include a demand that exceeds the available supply, leading to enhanced drought conditions in the surface water and groundwater resources; urbanization in the floodplain; and generation of excess sedimentation from such sources as excessive travel on dirt roads, undersized drainage culverts, and incised tributary streams with tall, eroding banks. In the

past, groundwater quality has also been affected by seepage from septic systems, which are used extensively throughout the region.

Regulatory Setting

This section discusses the federal, state and local policies and regulations that are relevant to the analysis of hydrology and water quality in the program area.

Federal Policies and Regulations

Clean Water Act

The State Water Resources Control Board (State Water Board) is the state agency with primary responsibility for implementation of state and federally established regulations relating to water resource issues. Typically, all regulatory requirements are implemented by the State Water Board through regional boards established throughout the state. The Central Coast RWQCB is the agency responsible for regulating discharges in the Carmel River Valley.

The CWA is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. It operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit; permit review is the CWA's primary regulatory tool.

Section 303

The State adopts water quality standards to protect beneficial uses of state waters as required by Section 303 of the CWA and the Porter-Cologne Act. Section 303(d) of the CWA established the total maximum daily load (TMDL) process to guide the application of state water quality standards (see discussion of state water quality standards below). To identify candidate water bodies for TMDL analysis, a list of water quality–limited streams was generated. These streams are impaired by the presence of pollutants, including sediment, and are more sensitive to disturbance. No drainages in or immediately adjacent to the program area are 303(d) listed, including the Carmel River.

Section 401

Section 401 of the CWA requires that an applicant pursuing a federal permit to conduct any activity that may result in a discharge of a pollutant obtain a Water Quality Certification (or waiver). Water Quality Certifications are issued by RWQCBs in California. Under the CWA, the state (RWQCB) must issue or waive Section 401 Water Quality Certification for the project to be permitted

under Section 404. Water Quality Certification requires the evaluation of water quality considerations associated with dredging or placement of fill materials into waters of the United States and imposes project-specific conditions on development. A Section 401 waiver establishes standard conditions that apply to any project that qualifies for a waiver.

Section 402

Section 402 of the CWA regulates discharges to surface waters through the NPDES program, administered by the EPA. In California, the State Water Board is authorized by the EPA to oversee the NPDES program through the RWQCBs (see related discussion under "Porter-Cologne Water Quality Control Act"). The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits.

Section 404

Section 404 of the CWA regulates the discharge of dredged and fill materials into "waters of the United States," which include oceans, bays, rivers, streams, lakes, ponds, and wetlands. The County must obtain a permit from the U.S. Army Corps of Engineers (Corps) for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity. Before any actions that may impact surface waters are carried out, a delineation of jurisdictional waters of the United States must be completed, following Corps protocols in order to determine whether the program area encompasses wetlands or other waters of the United States that qualify for CWA protection. These include any or all of the following:

- Areas within the ordinary high water mark of a stream, including non-perennial streams with a defined bed and bank and any stream channel that conveys natural runoff, even if it has been realigned.
- Seasonal and perennial wetlands, including coastal wetlands.

Wetlands are defined for regulatory purposes as areas "inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3, 40 CFR 230.3).

Section 404 permits may be issued only for the least environmentally damaging practicable alternative. That is, authorization of a proposed discharge is prohibited if there is a practicable alternative that would have less adverse impacts and lacks other significant adverse consequences. If the proposed traffic improvement projects activities were to involve dumping any fill material, then this permit would be applicable.

Development on Floodplains

Federal Flood Insurance Program

Alarmed by increasing costs of disaster relief, Congress passed the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. The intent of these acts was to reduce the need for large, publicly funded flood control structures and disaster relief by restricting development on floodplains.

FEMA administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA issues flood insurance rate maps for communities participating in the National Flood Insurance Program. These maps delineate flood hazard zones in the community.

Executive Order 11988

Executive Order 11988 (Floodplain Management) addresses floodplain issues related to public safety, conservation, and economics. It generally requires federal agencies constructing, permitting, or funding to:

- avoid incompatible floodplain development.
- be consistent with the standards and criteria of the National Flood Insurance Program.
- restore and preserve natural and beneficial floodplain values.

State Policies and Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act, passed in 1969, articulates with the CWA (see the *Clean Water Act* section above). It establishes the State Water Board and divides the state into nine regions, each overseen by a RWQCB. The State Water Board is the primary state agency responsible for protecting the quality of the state's surface and groundwater supplies, but much of its daily implementation authority is delegated to the nine RWQCBs, which are responsible for implementing CWA Sections 401, 402, and 303(d). In general, the State Water Board manages both water rights and statewide regulation of water quality, while the RWQCBs focus exclusively on water quality within their regions.

Central Coast Regional Water Quality Control Board

The Central Coast RWQCB is responsible for the protection of beneficial uses of water resources in the Central Coast region. The RWQCB uses planning,

permitting, and enforcement authorities to meet this responsibility and has adopted the Water Quality Control Plan for the Central Coast Region (Basin Plan) (Central Coast Regional Water Quality Control Board 1994) to implement plans, policies, and provisions for water quality management in the region. Beneficial uses of surface waters are identified for major surface waters and their tributaries and described in the Basin Plan. In addition, the Basin Plan identifies water quality objectives and implementation plans for the protection of the beneficial uses of the basin.

Beneficial Uses and Water Quality Objectives

Beneficial uses are the resources, services, and qualities of the aquatic system that are the ultimate goals of protecting and achieving high water quality. The following beneficial uses have been identified for the Carmel River: municipal and domestic supply; agricultural supply; industrial service supply; groundwater recharge; contact and non-contact water recreation; warm freshwater habitat; cold freshwater habitat; wildlife habitat; migration of aquatic organisms; spawning, reproduction, and early development of fish; preservation of biological habitats of special significance; rare, threatened, or endangered species habitat; freshwater replenishment; and commercial and sport fishing. The RWQCB has set water quality objectives for all surface waters in the basin concerning color, tastes, and odors; floating, suspended, and settleable material; oil and grease; biostimulatory substances; sediment; turbidity; pH; dissolved oxygen; temperature; toxicity; pesticides; organic substances; and radioactivity. Also, specific objectives for concentrations of chemical constituents are applied to bodies of water based on their designated beneficial uses, including municipal and domestic supply, contact and noncontact water recreation, warm freshwater habitat, and fish spawning. For instance, for those water bodies identified for municipal and domestic supply, additional regulations apply regarding pH, organic chemicals, chemical constituents, phenol, and radioactivity.

Construction Activity Permitting

The RWQCB administers the NPDES stormwater permitting program for construction and industrial activities in the Central Coast region. Construction activities disturbing 1 or more acres of land are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). For qualifying projects, the project applicant must submit, before construction begins, a Notice of Intent (NOI) to the RWQCB to be covered by the General Construction Permit. The General Construction Permit requires the preparation and implementation of a SWPPP, which also must be completed before construction begins. Implementation of the plan starts with the commencement of construction and continues though the completion of the project. Upon completion of the project, the applicant must submit a Notice of Termination to the RWQCB to indicate that construction is complete.

Permitting for Dewatering Activities

Under the NPDES program, the RWQCB has also adopted a General Permit for Discharges with Low Threat to Water Quality (General Low Threat Permit). This permit applies to various categories of activities, and would be likely to apply to the proposed traffic improvement projects if the applicant conducted dewatering activities during construction and discharged the effluent to surface water or groundwater. This permit contains waste discharge and effluent limitations similar to those in the General Construction and General Industrial Permits. To obtain coverage, the applicant must submit an NOI and data establishing the chemical characteristics of the dewatering discharge. A standard monitoring and reporting program is included as part of the permit. For dewatering activities that are not covered by the General Permit, an individual NPDES permit and WDRs must be obtained from the RWQCB.

The General Dewatering Permit would be applicable to the proposed traffic improvement projects if there would be any excavation below the water table where dewatering activities would take place.

MS4 Permits

Under the CWA, urban areas with municipal separate storm sewer systems (MS4s) are required to obtain an NPDES permit. The RWQCB administers the NPDES stormwater permitting program for MS4s. MS4s are categorized as either large or small. Cities with populations greater than 100,000 are considered to have large MS4 systems and are required to get permits under Phase I of the EPA's stormwater program. Other urban areas (areas with greater than 1,000 residents per square mile or areas with high growth potential) are considered to have small MS4s and are required to get permits under Phase II of the EPA's stormwater program.

To obtain an MS4 permit, it is necessary for operators of small MS4s to create a stormwater management program (SWMP). The Cities of Monterey, Sand City, Del Rey Oaks, Marina, Seaside, and Pacific Grove and the County of Monterey submitted a revised SWMP to the RWQCB in June 2006. On September 8, 2006 the SWMP was accepted by the RWQCB with the provision that certain modifications be made (Regional Water Quality Control Board 2006a). The SWMP includes unincorporated urban areas of Monterey County. The Rancho Canada project is located within Monterey County urbanized area C (Regional Water Quality Control Board 2006b) and would be subject to following the SWMP guidelines.

Section 1600–1607 of the California Fish and Game Code

California Department of Fish and Game (DFG) is authorized, under Sections 1600–1607 of the California Fish and Game Code, to develop mitigation measures and enter into streambed alteration agreements with applicants who propose projects that would obstruct the flow or alter the bed, channel, or bank of a river or stream in which there is a fish or wildlife resource, including intermittent and ephemeral streams.

Local Policies and Regulations

Monterey County General Plan

Objectives and policies defined in the Monterey County General Plan that are relevant to the proposed program are summarized below.

Objective 5.2: Preserve vegetation where necessary to protect waterways from bank erosion and siltation.

Policy 5.2.1: Owners of property adjacent to waterways or responsible agencies shall be encouraged to maintain healthy vegetation along the drainage course, or provide other suitable means of preventing bank erosion or siltation.

Policy 5.2.2: The County shall establish special procedures for land use, building locations, grading operations, and vegetation removal adjacent to all waterways and significant water features.

Objective 16.2: Reduce the risk from flooding and erosion to an acceptable level by regulating the location, type, and density of land use.

Objective 21.1: Enhance the quality of water in the County by regulating the type, location, and intensity of land use, and grading operations.

Greater Monterey Peninsula Area Plan

The Greater Monterey Peninsula Area Plan is a subset of the Monterey County General Plan, and covers one of eight subareas within Monterey County. The Greater Monterey Peninsula Area Plan does not contain any additional policies or language pertinent to the hydrological or water quality-related aspects of the roadway improvement projects beyond those specified in the Monterey County General Plan.

Carmel Valley Master Plan

The Carmel Valley Master Plan is part of the Monterey County General Plan. The policies outlined in the Carmel Valley Master Plan and summarized below must be considered in conjunction with the Monterey County General Plan.

Policy 6.1.3 (CV): All beneficial uses of the total water resources of the Carmel River and its tributaries shall be considered and provided for in future planning decisions.

Policy 35.1.3 (CV): Storm drainage facilities shall be designed to accommodate runoff from the 10-year or 100-year storms as recommended by the Monterey County Flood Control and Water Conservation District.

Carmel Valley Floodplain Ordinance

Regulations for floodplains in Monterey County are contained in Chapter 16.16 of Monterey County Code. The Carmel Valley Flood Plain Ordinance (Chapter 21.64) includes additional floodplain regulations for land use within the Carmel Valley floodplain. For development within the 100-year floodplain or within 200 feet of the riverbank, a Use Permit from the Monterey County Resource Management Agency - Planning Department may be required.

As defined in County Code, development means 'any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation, or drilling operations'. There are more restrictive regulations for development within the FEMA-defined floodway.

Monterey Peninsula Water Management District

The MPWMD is a public agency that was created in 1978 by State statute to oversee water usage and protection in the region. The MPWMD coordinates among local water districts, jurisdictions, and agencies to allocate water and ensure necessary conservation. They monitor hydrologic conditions and available resources, issue connection permits, and oversee fish, riparian, and lagoon mitigation programs along the Carmel River and other area resources.

Criteria for Determining Significance

In accordance with State CEQA Guidelines, federal and state regulations and applicable local plans and policies, a project impact would be considered significant under the following conditions:

A. Alteration of Drainage Patterns

Substantially alter the existing drainage pattern of the project sites or area, or result in offsite drainage or flood problems.

B. Stormwater Runoff and Drainage Infrastructure

Substantially increase the rate or amount of surface runoff, which would exceed capacity of existing or planned storm drain facilities, cause downstream or offsite drainage problems, or increase the risk or severity of flooding in downstream areas.

C. Water Quality

Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality or contribute substantial non-point sources of pollution to the Carmel Bay Water Quality Protection Area.

D. Groundwater Supply

Substantially deplete groundwater supplies or substantially interfere with groundwater recharge.

E. Risk of Flooding

Result in construction of habitable structures within a 100-year floodplain, which would expose people or structures to a significant risk of loss, injury, or death due to flooding.

Expose people or structures to a significant risk of loss, injury, or death involving flooding.

F. Risk of Inundation by Seiche, Tsunami, or Mudflow

Increase the likelihood of inundation by seiche, tsunami, or mudflow.

Impacts and Mitigation Measures

A. Alteration of Drainage Patterns

Impact H-1: Potential Alteration of Drainage Patterns (Less than Significant)

The proposed roadway improvements are not expected to substantially alter existing drainage patterns. Grades within specific project areas would be restored to pre-project conditions to the extent practicable. In addition, any required roadway stormwater management system would be designed to mimic existing drainage patterns to the extent practicable. Therefore, this impact is considered **less-than-significant**. No mitigation is required.

B. Stormwater Runoff and Drainage Infrastructure

Impact H-2: Potential Increases in Runoff or Exceedances in Stormwater Capacity (Less than Significant with Mitigation)

The increase in impervious surfaces associated with construction of passing lanes, turning lanes, widened shoulders, paved turn outs, and/or new roadways (i.e., Laureles Grade/Carmel Valley Road grade separation) is expected to increase runoff in peak flows and volumes compared to existing conditions. If post-construction flows are not controlled, scouring of local creek channels and localized flooding of areas where specific improvements would be located could occur. This impact is considered potentially significant. Implementation of **Mitigation Measure H-2.1** would reduce this impact to a **less-than-significant** level.

Mitigation Measure H-2.1: Design and Implement Stormwater Management Measures

The County shall design and implement a drainage plan for stormwater management measures. The stormwater management measures should be designed such that they result in pre-project runoff peak flows and volumes.

C. Water Quality

Impact H-3: Temporary Impairment of Water Quality Associated with Roadway Construction (Less than Significant with Mitigation)

Some of the proposed roadway improvements, such as passing and turning lane additions, widening of shoulders, paving turnouts and new roadways may have the potential to cause temporary water quality impacts due to roadbed removal, grading, and other earth construction activities requiring earth movement. Construction activities associated with these activities can temporarily impair water quality because disturbed and eroded soil, petroleum products, and miscellaneous wastes may be discharged to receiving waters. Soil and associated contaminants that enter stream channels can increase turbidity, stimulate the growth of algae, increase sedimentation of aquatic habitat, and introduce compounds that are toxic to aquatic organisms. Construction materials such as fuels, oils, paints, and concrete are potentially harmful to fish and other aquatic life if released into the environment. The extent of potential effects depends on the erodibility of soil types encountered, type of construction practice, extent of the disturbed area, duration of the disturbance, timing of precipitation, and proximity to drainage channels. These potential releases of water quality pollutants into Carmel River are considered potentially significant water quality impacts. Implementation of **Mitigation Measure H-3.1** would reduce these impacts on water quality to a **less-than-significant** level.

Mitigation Measure H-3.1: Prepare a Stormwater Pollution Prevention Plan

The County will prepare and implement a SWPPP pursuant to the applicable NPDES general construction activity permit system or the Caltrans SWMP prior to construction of any specific improvement under the proposed program. The SWPPP shall identify standard erosion control measures (e.g., management, structural, and vegetative controls) to be implemented for all construction activities that expose soil. Erosion in disturbed areas would be controlled through grading operations that eliminate direct routes for conveying runoff to drainage channels, construction of erosion control barriers such as silt fences and mulching material, and reseeding disturbed areas with grass or other plants. These standard erosion control measures are expected to reduce the potential for soil erosion and sedimentation of drainage channels. The general contractor conducting the work would be responsible for constructing or implementing the measures, inspecting them regularly, and maintaining the measures in good working order.

Impact H-4: Long-Term Impacts Resulting in Impaired Water Quality Associated with the New Roadways (Less than Significant with Mitigation)

The proposed roadway improvements would introduce new paved (impermeable) surfaces into the watershed, which may cause or result in the long-term releases of water quality pollutants into receiving waters (i.e., Carmel River). This impact is considered potentially significant. Implementation of **Mitigation Measure H-4.1** would minimize this impact to a **less-than-significant** level.

Mitigation Measure H-4.1: Conduct Site Specific Water Quality Analysis and Treatment

The County shall conduct site-specific water quality assessments for each roadway improvement project prior to commencement of construction. The assessment shall identify the project's potential to contribute to long-term water quality pollution due to increases in impermeable surfaces, and prescribe site-specific treatment measures to avoid or minimize that project's contribution to water quality degradation of receiving waters. Treatment measures can include, but are not limited to, bioswales and stormwater detention basins.

D. Groundwater Supply

Impact H-5: Potential Interference with Groundwater Recharge (Less than Significant with Mitigation)

Widened roadways proposed under the program would result in an increase of paved (impermeable) surfaces. Any such increase within a groundwater recharge area could reduce the amount of water that percolates into underlying aquifers. Although the average contribution to groundwater from percolating rainwater is considered minimal in the program area, the extent of project-specific impacts related to the depletion or interference with groundwater recharge have not been determined. Therefore, this impact is considered potentially significant. Implementation of **Mitigation Measure H-5.1** would reduce this impact to a **less-than-significant** level.

Mitigation Measure H-5.1: Design and Install Infiltration Devices

In areas where groundwater recharge occur, the County shall design and implement drainage plans that include considerations for installing appropriate stormwater infiltration devices to reproduce the natural recharge rates of the area that would be paved.

E. Risk of Flooding

Impact H-6: Potential Exposure of People or Structures to Significant Risk from Flooding (Less than Significant with Mitigation)

Construction of new roadway facilities may occur within a designated 100-year floodplain or floodway. Construction within a floodplain or floodway can alter floodplain storage and conveyance capacity of existing channels. Placement of roadways within 10-year or a designated 100-year floodplain may expose people or structures to a significant risk from flooding. This impact is considered potentially significant. Implementation of **Mitigation Measure H-6.1** would reduce the impact to a **less-than-significant** level.

Mitigation Measure H-6.1: Prevention of Risk to People or Structures from Flooding

The County shall conduct site-specific hydraulic modeling analyses for each project in accordance with all federal, state, and local regulations to assess whether new roadway facilities would impede floodflows or expose people or structures to the risk of flooding. The County shall use the results of the hydraulic modeling to design future projects to avoid substantial increases in flooding. The County shall ensure that project designs address conveyance capacities of existing channels such that the project would not contribute to additional flooding or restriction of floodwater conveyance within existing culverts or under existing bridges.

F. Risk of Inundation by Seiche, Tsunami, or Mudflow

Impact H-7: Increased Likelihood of Inundation by Seiche, Tsunami, or Mudflow (Less than Significant)

The effects of tsunamis and seiche depend on elevation and proximity to the ocean. The proposed program is not near any large inland waterbodies or the Pacific Ocean. The closest large water body is Carmel Bay, connected to the Pacific Ocean, about 1 mile west of the program area. The proposed roadway improvement areas are topographically separated from Carmel Bay and, thus from tsunami or seiche exposure. Therefore, potential impacts from tsunami and seiche are highly unlikely and are considered **less-than-significant**.

The proposed program would take place in relatively flat areas, without being constructed directly on steep hillsides or cliffs. Thus, potential impacts from mudflows are highly unlikely and are considered less-than-significant. No mitigation is required. Discussion of potential geotechnical impacts of the proposed program is provided in *Section 3.1, Geology, Soils, and Seismicity*.

Section 3.3
Biological Resources

Introduction

The biological resources impact analysis is qualitative and is not site-specific because of the wide geographical area that comprises the program area. As part of subsequent, project-specific environmental analysis, the County shall identify site-specific study areas for more detailed identification of biological resources at those locations.

This impact analysis assumes that biological resources could be affected directly or indirectly by construction and maintenance activities associated with the proposed roadway improvements. Disturbance could be caused by the following activities:

- stream dewatering or installation of temporary water-diversion structures;
- loss of habitat associated with widening roadways;
- temporary stockpiling of soil or construction materials, and sidecasting of soil and other construction wastes;
- removal of vegetation during construction of temporary staging areas and access roads;
- soil compaction and generation of dust by construction equipment;
- water runoff from the construction area;
- degradation of water quality in wetlands and waterways resulting from road runoff.

Jones & Stokes reviewed the following sources of information to prepare the biological resources section of this chapter.

- The DFG's California Natural Diversity Database (CNDDB) for Monterey, Seaside, and Carmel Valley USGS quadrangles that cover Carmel Valley (California Natural Diversity Database 2006).
- The California Native Plant Society's (CNPS's) Inventory of Rare and Endangered Vascular Plants of California—online edition (2006).
- Species lists provided by the USFWS (Appendix B).

- Previously prepared environmental documents.
- Monterey County General Plan.
- Published and unpublished literature.
- Jones & Stokes file information.

Environmental Setting

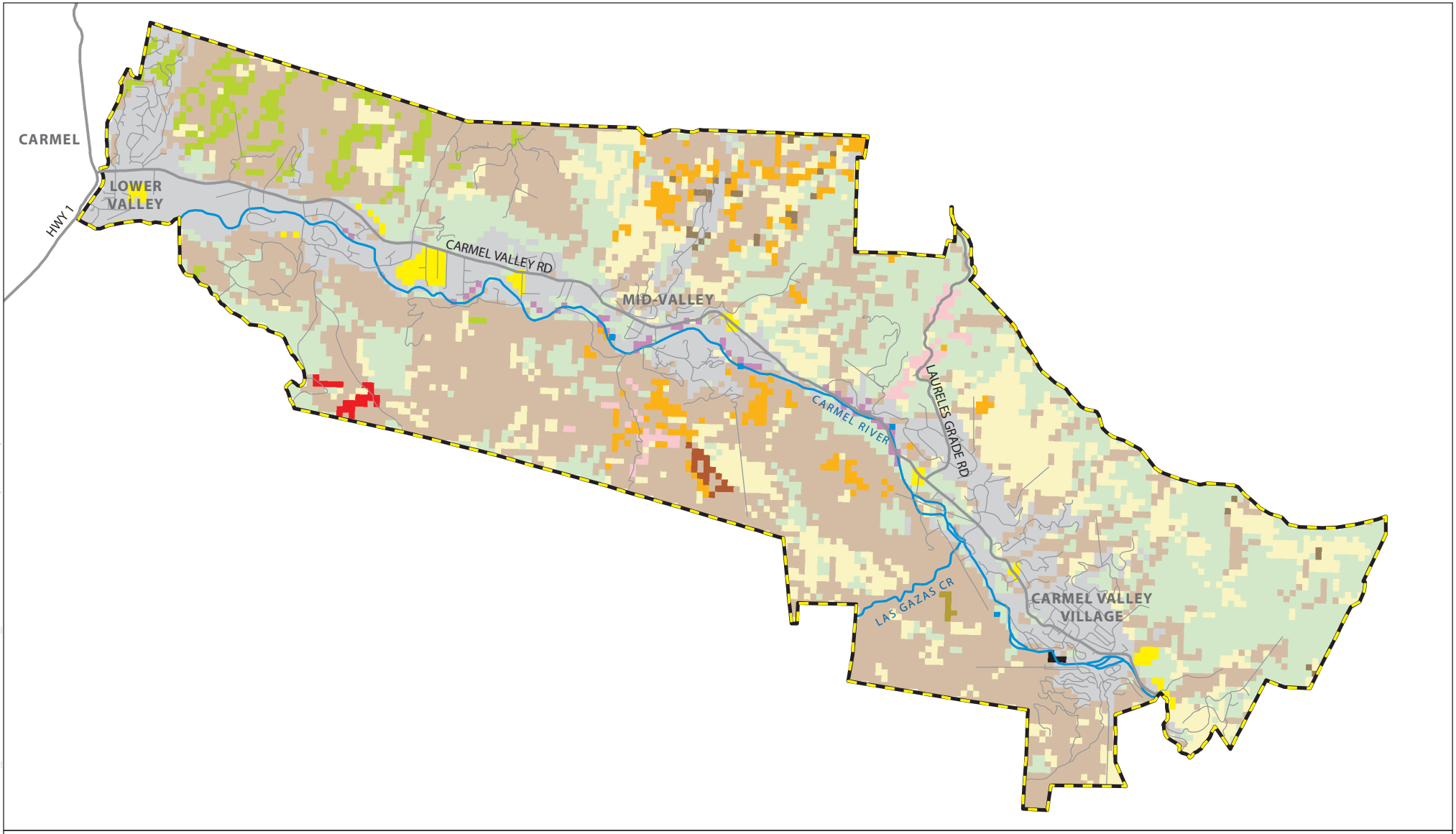
Information presented about the existing biological setting of Carmel Valley is general and is not based on site-specific field surveys for the program area. Field surveys would be conducted as needed, and site-specific biological resource information would be evaluated under subsequent project-specific environmental review. A map of the sensitive and common habitats is presented in Figure 3.3-1.

Sensitive Habitats

The following habitat types, known to occur within Carmel Valley, are generally considered to be sensitive habitats for the purpose of this program-level analysis. In general, the DFG associates specific species types to habitats in order to define them as "sensitive"; however, due to the programmatic nature of this analysis, the identification of presence or absence of specific species types to each habitat is not always possible. Consequently, for the purpose of this qualitative analysis the overall habitat type is considered to be sensitive. Where specific species types are known, that information is provided in the habitat descriptions below. However, this identification is not inclusive, and other vegetative associations may exist and subsequent project-specific environmental reviews tiered from this EIR would need to conduct site-specific evaluations to determine the presence or absence of these habitats within a specific project area.

Blue Oak Woodland

In the program area, blue oak woodland can be found in association with mixed chaparral, coastal scrub, annual grassland, and coastal oak woodland. It is often found on rocky, well-drained, infertile soils. In this habitat type, blue oak (*Quercus douglasii*) is the dominant species and is typically characterized by an overstory of scattered trees and an understory of annual grassland on dry ridges and moderate slopes (Mayer and Laudenslayer 1988). This habitat type may have a minor shrub component, especially on rock outcrops. Blue oaks may also occur in denser stands on better quality habitat. Frequently associated arboreal species of this habitat type are coast live oak and valley oak (*Q. lobata*). Common shrub associates are poison-oak (*Toxicodendron diversilobum*), coffeeberry (*Rhamnus californica*), buckbrush (*Ceanothus* spp.), redberry (*Rhamnus* spp.), California buckeye (*Aesculus californica*), and manzanita (*Arctostaphylos* ssp.) Common components of the annual grassland cover are



Carmel Valley Traffic Improvement Program SEIR

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- Agriculture
- Annual Grassland
- Barren
- Blue Oak Woodland
- Blue Oak-Foothill Pine
- Closed-Cone Pine-Cypress
- Coastal Oak Woodland
- Coastal Scrub
- Mixed Chaparral
- Montane Hardwood
- Montane Hardwood-Conifer
- Montane Riparian
- Redwood
- Urban
- Water/Aquatic

Source: California Department of Forestry, FRAP

- Major Road
- Other Roads
- Program Area Boundary

Figure 3.3-1
Sensitive and Common Biological Habitats in the Program Area

Jones & Stokes

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brome grass (*Bromus* spp.), wild oats (*Avena* spp.), filaree (*Erodium* spp.), fiddleneck (*Amsinckia* spp.*)*, and other grass species. Blue oaks have a high tolerance for drought and thrive in dry hilly areas (Mayer and Laudenslayer 1988). The blue oak- valley oak-coast live oak/grassland association is considered a sensitive community by DFG (2003).

Oak woodlands are important habitats because of their high value to wildlife in the form of nesting sites, cover, and food (Mayer and Laudenslayer 1988). Birds associated with oak woodlands include acorn woodpeckers (*Melanerpes formicivorus*), Nuttall's woodpeckers (*Picoides nuttallii)*, western scrub jay (*Aphelocoma californica)*, yellow-billed magpie (*Pica nuttalli*), and many warblers and flycatchers. Cavities in oak trees are important nesting sites for American kestrel (*Falco sparverius*), tree swallow (*Tachycineta bicolor*), oak titmouse (*Baeolophus inornatus*), house wren (*Troglodytes aedon*), and western bluebird (*Sialia mexicana*). Oak woodlands provide nesting sites for raptors, such as red-tailed hawks (*Buteo jamaicesis*), red-shouldered hawks (*Buteo lineatus*), and great-horned owls (*Bubo virginianus*) (Zeiner et al. 1990a.). Mammals associated with woodlands include western gray squirrel (*Sciurus griseus*), pallid bat (*Antrozous pallidus*), bobcat (*Lynx rufus*), blacktail deer (*Odocoileus hemionus*), and gray fox (*Urocyon cinereoargenteus*) (Zeiner et al. 1990b). Acorns are an important food source for species such as California quail (*Callipepla californica*), wild turkey (*Meleagris gallopavo*), western gray squirrel, and blacktail deer (Mayer and Laudenslayer 1988).

Monterey Pine Forest

Monterey pine forest habitat occurs in the northwestern portion of the program area, not far from the coast and intermingles mostly with coastal oak woodland. Monterey pine forest habitat usually occurs. Monterey pine stands are considered sensitive natural communities by DFG (2003).

Monterey pine (*Pinus radiata*) is native to Monterey County and can be found along the Carmel River and potentially in the program area. Associates of Monterey pine include coast live oak and madrone. Common shrubs in the understory are buckthorn (*Rhamnus* sp.), poison oak, California huckleberry (*Vaccinum ovatum*), and manzanita (Mayer and Laudenslayer 1988). Bishop pine (*P. muricata*) and knobcone pine (*P. attenuata*) however, also native to Monterey County, are not found along the Carmel River or in the program area as the former occurs close to the coast and the latter occurs much farther south.

A number of game species, including tree squirrels and band-tailed pigeons, and non-game species use this habitat type for feeding and cover.

Montane Hardwood-Conifer

In the program area, montane hardwood-conifer can be found intermingling with mixed chaparral, coastal oak woodland, and annual grassland. Montane

Hardwood-Conifer habitat combines coniferous and hardwood tree species in a double-canopy forest with a poorly developed understory (Mayer and Laudenslayer 1988). One-third of the trees in this community are conifers while another third are broad-leaved. Common associates in this habitat are Douglas-fir (*Pseudotsuga menziesii*), madrone, coast live oak, big leaf maple (*Acer macrophyllum*), tanoak (*Lithocarpus densiflora*), and coast redwood (*Sequoiadendron sempervirens*). This community falls between the dense coniferous forests and more open habitat types such as montane hardwood, mixed chaparral, and open woodland communities (Mayer and Laudenslayer 1988). This habitat type is often found in montane areas with narrow valleys.

A variety of wildlife species utilize montane hardwood-conifer habitat because of variable canopy cover and understory vegetation. As with other habitat types with hardwood trees, this component provides habitat for cavity-nesting birds. Acorns and other nuts are important food sources for both birds and mammals. In areas with moderate moisture, amphibians may be found in leaf litter. There is great variety in wildlife species that may occur in this community type because the vegetation composition of montane hardwood-conifer can vary greatly based on geographic location (Mayer and Laudenslayer 1988.)

Redwood

Redwood habitat can be found along the California coast from San Louis Obispo County north to the California-Oregon border up to 31 miles inland (Mayer and Laudenslayer 1988). This habitat requires mesic conditions where temperatures are relatively stable. These areas are greatly influenced by coastal fog and marine air flows. In the program area, this habitat is often found in association with coastal oak woodland. In Monterey County, it can be found as high as 3,000 feet in elevation. Redwood habitat comprises several coniferous species including coast redwood, the dominant species, Douglas-fir, tan oak, and madrone (*Arbutus menziesii*). Other species that may occur are Bishop pine (*Pinus muricata*), Monterey pine (*P. radiata*), California bay (*Umbellularia californica*), and big-leaf maple. In second growth redwood stands, there is generally little understory vegetation and an open park-like appearance. Old growth stands tend to have a much denser understory component (Mayer and Laudenslayer 1988).

Many species of amphibians, reptiles, birds, and mammals occupy redwood forests, which provide food, cover, and special habitat components such as tree cavities for nesting. Several sensitive wildlife species occupy redwood habitat such as red-legged frog (*Rana aurora*), osprey (*Pandion haliaetus*), marbled murrelet (*Brachyramphus marmoratus*), ringtail (*Bassariscus astutus*), and Pacific fisher (*Martes pennanti pacifica*) (Mayer and Laudenslayer 1988). Some wildlife species (e.g., marbled murrelet and spotted owl [*Strix occidentalis*]) are dependent on old growth redwood forests or show a strong preference for them as breeding habitat (Zeiner et al. 1990a).

Redwood habitat within Carmel Valley is primarily located in the southwest area, outside of the Carmel Valley Road corridor. This habitat is unlikely to be affected by any of the proposed roadway improvements.

Montane Riparian

In the program area, sporadic patches of montane riparian habitat are found aside the Carmel River along the floor of Carmel Valley. Montane riparian habitat often occurs as a narrow dense zone of broad-leaved, winter deciduous trees which occur alongside of rivers, streams, springs, and other water bodies (Mayer and Laudenslayer 1988). At lower elevations, there is little understory and the canopy can reach 30 m. Members of the montane riparian community vary throughout the state. Common species include bigleaf maple, black cottonwood (*Populus balsamifera* ssp. *trichocarpa)*, willow (*Salix* ssp.), and alder (*Alnus* spp.).

Because the vegetation is diverse and well developed, riparian forest provides high-value habitat for wildlife, including several special-status species. Riparian forest habitat provides food, water, and migration and dispersal corridors, as well as escape, nesting and thermal cover for many wildlife species (Mayer and Laudenslayer 1988). Invertebrates, amphibians, and aquatic reptiles live in aquatic and adjacent upland habitats. Raptors, herons, egrets, and other birds nest in the upper canopy. A variety of songbirds use the shrub canopy, and cavity-nesting birds, such as Nuttall's woodpecker, and oak titmouse, occupy dying trees and snags (Zeiner et al. 1990a). Several mammals including raccoons (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and striped skunks (*Mephitis mephitis*) are common in riparian habitats (Zeiner et al. 1990b).

Water/Aquatic

Water/aquatic habitat is defined as areas with more than 98 percent total cover by open water and less than 2 percent total cover by vegetation in the continually exposed shore zone (DFG *California Interagency Wildlife Task Group* 2005). Open water habitat in the program area is found in the Carmel River and its tributaries.

Wildlife use of this habitat type is dependent on the extent of emergent and submergent vegetation, and adjacent streamside (riparian) vegetation. Creek channels with well-vegetated areas provide food, water, and migration and dispersal corridors, as well as escape, nesting and thermal cover for many wildlife species (Mayer and Laudenslayer 1988). Wildlife species associated with stream and riparian habitats include western toad (*Bufo boreas*), California newt (*Taricha torosa*), black phoebe (*Sayornis nigricans*), Anna's hummingbird (*Calypte anna*), great egret (*Ardea alba*), belted kingfisher (*Ceryle alcyon*), raccoon, and striped skunk. (Zeiner et al. 1988, 1990a, 1990b). In less-vegetated areas, aquatic species (e.g., fish, invertebrates, and amphibians), are found in the creek channel, and the banks of the channel are often used by species that require

less cover, such as California ground squirrel (*Spermophilus beecheyi*), western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis melanoleucus*), and their predators (e.g., coyotes [*Canis latrans*], raptors).

Common Habitats

Agriculture

In the program area, agricultural land occurs on the valley floor, near the Carmel River, and adjacent to urban areas. Agriculture refers to areas where the native vegetation has been cleared for both irrigated and non-irrigated agricultural use. It is defined by areas having less than 2% total cover by non-wildland vegetation grown for food, fiber, or landscaping, and does not meet criteria for any wildland habitat (DFG *California Interagency Wildlife Task Group* 2005). This can include dryland grain crops, irrigated grain crops, irrigated hayfields, irrigated row and field crops, rice, orchards, and vineyards (Mayer and Laudenslayer 1988).

Agricultural lands are established on fertile soils that historically supported abundant wildlife. The quality of habitat for wildlife is greatly diminished when the land is converted to agricultural uses and is intensively managed. Many species of rodents and birds have adapted to agricultural lands, but they are often controlled by fencing, trapping, and poisoning to prevent excessive crop losses. However, certain agricultural lands have become important habitats for wintering waterfowl and breeding and wintering raptors. In the program area, wildlife species associated with agricultural lands include mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), Brewer's blackbird (*Euphagus cyanocephalus*), sandhill crane (*Grus canadensis*), various raptor species, egrets, and many species of rodents (Mayer and Laudenslayer 1988).

Annual Grassland

Annual grassland is found throughout the program area, although primarily in the northern portion. It intermingles with coastal oak woodland, coastal scrub, montane hardwood, and several other communities. Annual grassland is an herbaceous plant community dominated by annual grasses and herbs (Sawyer and Keeler-Wolf 1995). Most annual grasses in California's grasslands are nonnative grasses from the Mediterranean basin. Common introduced species found in this habitat are ripgut brome (*Bromus diandrus*), red brome (*B. rubens*), soft chess (*B. hordeaceus*), Mediterranean barley (*Hordeum hystrix*), wild oats (*Avena barbata* and *A. fatua*), soft brome (*Bromus hordeaceus*), foxtail chess (*B. madritensis*), leporinum barley (*Hordeum murinum* ssP. *leporinum*), Italian ryegrass (*Lolium multiflorum*), rat-tail fescue (*Vulpia myuros*). Common forbs are broadleaf filaree (*Erodium botrys*), redstem filaree (*E. cicutarium*), turkey mullein (*Eremocarpus setigerus*), bur clover (*Medicago minima*), and true clovers

(Mayer and Laudenslayer 1988; California Wildlife Habitat Relationships Staff 2005). Perennial grasses such as purple needlegrass (*Nassella pulchra*) and Idaho fescue (*Festuca idahoensis*), are occasionally found in annual grassland.

Annual grasslands are used by many wildlife species for foraging. Some of these species also breed in annual grassland if special habitat features such as cliffs, caves, ponds, or woody plants are available for breeding, resting, or as escape cover. Reptiles that breed in annual grassland habitats include western fence lizards, common garter snake (*Thamnophis sirtalis*), and western rattlesnake (*Crotalus tigris*). Grasslands provide foraging habitat for wide-ranging species such as red-tailed hawk, turkey vulture (*Cathartes aura*), American kestrel, and northern harrier (*Circus cyaneus*). Mammals typically found in this habitat include California vole (*Microtus californicus*), western harvest mouse (*Reithrodontomys megalotis*), California ground squirrel, blacktail jackrabbit (*Lepus californicus*), coyote, and American badger (*Taxidea taxus*) (Mayer and Laudenslayer 1988). In addition, many species that nest or roost in adjacent woodlands may forage in grasslands, including western bluebird, western kingbird (*Tyrannus verticalis*), and some species of bats.

Barren

In the southeastern portion of the program area, there is a small portion of barren ground along the Carmel River. This habitat is characterized by a lack of vegetation. This includes areas having less than 2 percent total coverage of herbaceous, desert, or non-wildland species, and less than 10 percent tree or shrub cover (Mayer and Laudenslayer 1988). Along rivers, this includes vertical riverbanks and canyon walls.

Because of the lack of vegetation, barren ground has a limited use by wildlife. However, some species, such as western burrowing owl (*Athene cunicularia hypugea*) and California horned lark (*Eremophila alpestris actia*), prefer areas with limited or very low growing vegetation.

Blue Oak-Foothill Pine Woodland

In the program area, a relatively small patch of this habitat type can be found in the southeastern part of the program area intermingling with coastal oak woodland. This woodland type consists of hardwood and conifer species, with blue oak and foothill pine (*Pinus sabiniana*) predominating. Blue oaks tend to be more abundant in this habitat than foothill pine, as foothill pine-dominated stands tend to lose their blue oak members, which are shade-intolerant (Mayer and Laudenslayer 1988). Common associates of these species in the Coast Range are coast live oak (*Quercus agrifolia*), valley oak (*Q. lobata*), and California buckeye. At lower elevations like those in the program area, blue oak is the dominant species in the canopy, while grasses and forbs tend to make up most of the understory. At higher elevations where foothill pines are the dominants, patches of shrubs will occur along with the grasses and forbs.

A large variety of wildlife species breed in blue oak-foothill pine woodland habitat, although no species is completely dependent on it for breeding, feeding, or cover. Most species utilizing this habitat breed during late winter and early spring (Mayer and Laudenslayer 1988). Blue oak-foothill pine woodland habitat provides forage opportunities for a variety of bird species that feed on acorns, bark, and foliage insects. Primary cavity-nesting birds (e.g., woodpeckers) excavate nest holes in living and dead trees, which are subsequently used by other cavity-nesting species such as the American kestrel, white-breasted nuthatch (*Sitta carolinensis*), and western bluebird. Other species that may occur in this habitat include wild turkey, oak titmouse, and western gray squirrel (Zeiner et al 1990a and 1990b).

Coastal Oak Woodland

Coastal oak woodland comprises the majority of the program area and intermingles with most of the other habitat types in the area. The nature and composition of coastal oak woodland varies throughout the state. The overstory is composed of deciduous and evergreen hardwoods and sometimes coniferous species (Mayer and Laudenslayer 1988; California Wildlife Habitat Relationships Staff 2005). In mesic sites, trees are closely spaced and the canopy is closed while in drier sites, trees are wider-spaced and form an open woodland. Composition of the understory also varies widely depending on the nature of the overstory (open or closed) among other factors. Coast live oak dominates coastal oak woodland from Sonoma County southward and is often the only overstory species in certain coastal regions. Additional species found in coastal oak woodland vary depending on the specific site conditions. In more mesic areas, California bay, madrone, tanbark oak, and canyon live oak (*Quercus chrysolepis*) are commonly members. On drier interior sites, valley oak, blue oak, and foothill pine often associate with coast live oak. Coastal oak woodland can intergrade with chaparral and coastal scrub, in which case the species from the latter communities form the understory. In mesic areas characterized by dense coast live oak forest, shade tolerant shrubs dominate the understory while in drier open sites, grassland species tend to do so (Mayer and Laudenslayer 1988; California Wildlife Habitat Relationships Staff 2005).

Coastal oak woodland has a similar value to wildlife as blue oak woodland described above. Wildlife species associated with coastal oak woodland would be similar to those described for blue oak woodland.

Mixed Chaparral

In the program area, mixed chaparral intermingles with montane hardwood-conifer habitat, coastal oak woodland, coastal scrub, and annual grassland. Mixed chaparral is a shrubland community characterized by drought and fire-adapted evergreen woody shrubs with thick sclerophyllous leaves ranging from 1-4m in height (Hanes 1988). Mature cismontane mixed chaparral is generally a nearly impenetrable shrub community with greater than 80 percent shrub cover

and little herbaceous understory (Mayer and Laudenslayer 1988, Hanes 1988). Dominant species in this habitat type are scrub oak (*Quercus berberidifolia*), ceanothus species (*Ceanothus* spp.), and manzanita species (*Arctostaphylos* spp.). Other common associates are chamise (*Adenestoma fasciculatum*), toyon (*Heteromeles arbutifolia*), coffeeberry (*Rhamnus californica*), madrone (*Arbutus menziesii*), California bay (*Umbellularia californica*), birchleaf mountain-mahogany (*Cercocarpus betuloides*), poison-oak, bush monkey flower, hollyleaf cherry (*Prunus ilicifolia*), and California yerba santa (*Eriodictyon californicum*) (Holland 1986; Mayer and Laudenslayer 1988).

Mixed chaparral provides habitat for a variety of birds and mammals. Numerous rodents, deer, and other herbivores are common in chaparral communities. Rabbits and hares will eat twigs, evergreen leaves, and bark from chaparral in fall and winter when there isn't an abundance of grasses. Shrubby vegetation provides mammals with cover and shade during hot weather and protection from wind in the winter. Chaparral provides seeds, fruits, insects, and protection from predators and the weather, in addition to singing, roosting, and nesting sites for many species of birds (Mayer and Laudenslayer 1988.) California quail, Bewick's wren (*Thryomanes bewickii*), wrentit, California thrasher, blacktail jackrabbit, brush mouse (*Peromyscus boylii*), dusky-footed woodrat (*Neotoma fuscipes*), and blacktail deer are common in chaparral habitats (Zeiner et al. 1990a, 1990b).

Coastal Scrub

The specific structure of coastal scrub habitat varies depending on whether the community is located along the northern, central, or southern coastal region of California (Holland 1986). The program area lies just south of Point Sur, the most southern area in the state supporting northern coastal scrub habitat. The program area thus supports primarily central coastal scrub. Species composition changes as one moves from the northern to the southern coastal scrub communities. While evergreen species prevail in the north, drought-deciduous species become more prevalent as one moves into the central and southern scrub habitats (Mayer and Laudenslayer 1988). Coastal scrub habitat consists of shrubs lower in height than in the mixed chaparral community (0–2 m tall), having semi-woody stems growing from a woody base, a shallow root system, and flexible branches (in de Becker, 1988). The presence of understory is also dependant upon the location of the coastal scrub community. Northern scrubs tend to have a well-developed understory of herbaceous species while southern scrubs tend to lack a significant herb understory. Coastal scrub is often found on steep, south-facing slopes. Typical species in central coast scrub are coastal sage scrub (*Artemesia californica*), coyote brush (*Baccharis pilularis*), bush monkey flower (*Mimulus aurantiacus*), black sage (*Salvia mellifera*), coffeeberry, and coast buckwheat (*Eriogonum latifolium*) (Holland 1986).

Denser shrub habitats provide suitable breeding habitat and/or cover for several species of birds, including California thrasher (*Toxostoma redivivum*), spotted towhee (*Piplio maculatus*), wrentit (*Chamaea fasciata*), and golden-crowned sparrow (*Zonotrichia atricapilla*). Less dense shrub areas provide suitable

breeding habitat and/or cover for northern mockingbird (*Mimus polyglottos*), Brewer's blackbird, Anna's hummingbird, and American robin (*Turdus migratorius*) (Zeiner et al. 1990a.). These more open areas are also suitable for western fence lizards and blacktail jackrabbits, which use the area beneath shrub vegetation for cover (Zeiner et al. 1988, 1990b).

Montane Hardwood

Montane hardwood habitat is characterized by areas with a hardwood tree layer (oaks), a poorly developed shrub layer, and a patchy herbaceous layer (Mayer and Laudenslayer 1988). Canyon live oak is the dominant member of this community. Common associates are foothill pine, tanoak, madrone, and California bay. In the program area, montane hardwood is found in association with mixed chaparral, coastal scrub, and coastal oak woodland. Typical understory vegetation includes Oregon grape (*Berberis aquifolium),* currant, (*Ribes* spp.), wood rose (*Rosa woodsii*), snowberry (*Symphoricarpos* sp.), manzanita, poison oak, and various forbs and grasses (Mayer and Laudenslayer 1988). Montane hardwood habitat is often found on moderate to steep slopes with rocky, coarse, well-drained soils.

Montane hardwood is similar to blue oak woodland and coastal live oak woodland, and therefore has a similar value to wildlife as these vegetation communities. Wildlife species associated with montane hardwood would be similar to those described for blue oak and coastal live oak woodlands.

Urban

Urban habitat is a developed habitat type, which is present in the program area throughout the Carmel Valley along the Carmel River. It includes all areas that are planted and maintained as landscaped areas. These habitats are often host to a wide array of invasive species.

Urban areas have marginal value for wildlife because of human disturbance and a lack of vegetation. Wildlife species that use these areas are typically adapted to human disturbance. Wildlife species associated with urban residential and suburban areas include western scrub jay, northern mockingbird, house finch (*Carpodacus mexicanus*), rock dove (*Columba livia*), raccoon, opossum, striped skunk, western fence lizard, and gopher snake (Mayer and Laudenslayer 1988).

Special-Status Species

Special-status species are plants and animals that are legally protected under the California Endangered Species Act (CESA) and federal Endangered Species Act (ESA) or other regulations, and species that are considered sufficiently rare by

the scientific community to qualify for such listing. Special-status plants and animals are species in the following categories.

- Species listed or proposed for listing as threatened or endangered under the ESA (50 CFR 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the Federal Register [FR] [proposed species]).
- Species that are candidates for possible future listing as threatened or endangered under the ESA (67 FR 40657, June 13, 2002).
- Species listed or proposed for listing by the State of California as threatened or endangered under CESA (14 California Code of Regulations 670.5).
- Species that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines Section 15380).
- Plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.).
- Plants considered by the CNPS to be "rare, threatened, or endangered in California" (Lists 1B and 2 in California Native Plant Society 2001).
- Plants listed by CNPS as plants about which more information is needed to determine their status and plants of limited distribution (Lists 3 and 4 in California Native Plant Society 2001), which may be included as special-status species on the basis of local significance or recent biological information.
- Animal species of special concern to DFG (California Department of Fish and Game 2006, Remsen 1978 [birds], Williams 1986 [mammals], and Jennings and Hayes 1994 [amphibians and reptiles]).
- Animals fully protected in California (California Fish and Game Code Sections 3511 [birds], 4700 [mammals], 5050 [amphibians and reptiles], and 5515 [fish]).

Other laws that protect wildlife species include the following.

- California Fish and Game Code Sections 3503 and 3503.5, which protect nesting raptors, their nests, and eggs.
- The federal Migratory Bird Treaty Act (MBTA), which protects nesting migratory birds.
- The Bald and Golden Eagle Protection Act, which prohibits, except under certain specified conditions, the taking, possession, transportation, export or import, barter, or offers to sell, a bald or golden eagle, alive or dead, or any part, nest, or eagle egg.
- Fish species that are considered commercially valuable under essential fish habitat protection established by the Sustainable Fisheries Act of 1996, which amended the Magnuson-Stevens Fishery Conservation and Management Act.

As described below under *Impacts and Mitigation Measures*, additional field surveys may be conducted as part of the subsequent, project-specific environmental analysis for projects proposed in the roadway improvement program to determine the exact location and distribution of special-status species in the program area.

Special-Status Plant Species

Table 3.3-1, identifies 48 special-status plant species known to occur in and near Carmel Valley that have potential to occur within the program area. The table summarizes the legal status, period of identification, distribution, and habitat for each species. The table was compiled based on the following sources:

- a records search of the CNDDB for the Monterey, Seaside, and Carmel Valley USGS 7.5-minute quadrangles (California Natural Diversity Database 2006),
- USFWS species list for Monterey County (Appendix B), and
- CNPS' *Inventory of Rare and Endangered Plants of California*, online edition (2006).

Thirty-one of the 48 special-status plants identified were determined to have a high potential of occurrence in Carmel Valley based on habitat presence and recorded occurrence in or near the program area. Of these, eight species, Hickman's onion, Eastwood's goldenbush, Carmel Valley bush mallow, Santa Lucia bush mallow, Carmel Valley malacothrix, Yadon's rein orchid, Santa Cruz microseris, and Pacific Grove clover, are known to occur in the program area (California Natural Diversity Database 2006). Three species were determined to have no potential for occurrence based on lack of habitat. Fourteen special-status plants were determined to have a low potential of occurrence based on absence of habitat or the presence of less suitable habitat for a species and/or indications that a species may have been extirpated from the area. The following six species are believed to have been extirpated or have sightings prior to 1950: robust spineflower, jolon clarkia, San Francisco collinsia, fragrant fritillary, marsh microseris, and maple-leaved checkerbloom. In addition, hooked popcorn flower has not been documented since 1962. Two species, Gowen cypress and Monterey cypress, were designated as having low potential because the only known native stands are along the immediate Monterey coastline. However, potential habitat for these species exists in the program area. Both high and low potential species should be surveyed for on a project-by-project basis during the appropriate blooming periods.

Special-Status Wildlife Species

Table 3.3-2 identifies special-status wildlife species known to occur in and near Carmel Valley. It includes the legal status, distribution, and habitat for each

Table 3.3-1 Special Status Plant Species with Potential to Occur in the CVMP Area[1]

Species	Status[1]			Habitat	California Distribution	Microhabitat	Blooming Period	Habitat Present?	Potential to Occur in CVMP Area
	USFWS	CDFG	CNPS						
Allium hickmanii Hickman's Onion	–	–	1B	Closed-cone coniferous forest, maritime chaparral, coastal prairie, coastal scrub, valley and foothill grassland, generally +/- 150' (5-200m)	Monterey and San Louis Obispo Counties	Sandy loam, damp ground and vernal swales; mostly in grassland though can be assoc. with chaparral or woodland.	April - May	Yes	High, occurrence in CVMP area
Arctostaphylos hookeri ssp. *hookeri* Hooker's manzanita	–	–	1B	Closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub on sandy substrate, 85-536m	Endemic to Monterey and Santa Cruz Counties	Sandy soils, sandy shales, sandstone outcrops	Jan-June	Yes	High, where sandy soils are present, occurrence recorded in Carmel, and north of closed-cone pine-cypress habitat in CVMP area
Arctostaphylos montereyensis Monterey manzanita	–	–	1B	Chaparral, cismontane woodland, coastal scrub, sandy soils, 30-730m	Monterey and San Louis Obispo Counties	Sandy soil, usually with chaparral assoc.	Feb-Mar	Yes	High, where sandy soils are present, occurrence recorded north of CVMP area between Seaside and Spreckles

[1] Program area = Carmel Valley Master Plan (CVMP) area

Table 3.3-1, continued

Species	Status [1]			Habitat	California Distribution	Microhabitat	Blooming Period	Habitat Present?	Potential to Occur in CVMP Area
	USFWS	CDFG	CNPS						
Arctostaphylos pajaroensis Pajaro manzanita	–	–	1B	Chaparral, 30-760m	Monterey, San Benito, and Santa Cruz* Counties	Sandy soil	Dec-Mar	Yes	High, where sandy soils are present
Arctostaphylos pumila Sandmat manzanita	–	–	1B	Openings in closed-cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub, in sandy areas, 3-205m	Endemic to Monterey County	Sandy soil, usually with chaparral assoc.	Feb-May	Yes	High, where sandy soils are present
Astragalus tener var. *titi* Coastal dunes milk-vetch	E	E	1B	Coastal bluff scrub, coastal dunes, 1-50m	Los Angeles*, San Diego*?, Monterey Counties	Moist, sandy depressions of bluffs or dunes along and near the Pacific Ocean; one site on a clay terrace	March-May	No	None
Centromadia parryi ssp. congdonii Congdon's tarplant	–	–	1B	Valley and foothill grassland; 1-230m	Alameda, Contra Costa, Monterey, Santa Clara, Santa Cruz *, San Luis Obispo, San Mateo, Solano* Counties	Alkaline soils, sometimes described as heavy white clay; tolerates disturbed conditions	May - Oct (Nov)	Yes	High, where alkaline soils are present
Chlorogalum purpureum var. *pupureum* Purple amole	T	–	1B	Chaparral, cismontane woodland, valley and foothill grassland, 205-350m	Monterey and San Louis Obispo Counties	Gravelly, clay soils in grassland	Apr-June	Yes	High, at elevations over 200m (700')
Chorizanthe pungens var. *pungens* Monterey spineflower	T	–	1B	Maritime chaparral, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland, 3-450m	Monterey, Santa Cruz, San Louis Obispo* Counties	Sandy soils in coastal dunes or more inland within chaparral or other habitats	Apr-Jun (July)	Yes	High

Table 3.3-1, continued

Species	Status [1]			Habitat	California Distribution	Microhabitat	Blooming Period	Habitat Present?	Potential to Occur in CVMP Area
	USFWS	CDFG	CNPS						
Chorizanthe robusta var. *robusta* Robust spineflower	E	–	1B	Coastal bluff scrub, coastal dunes, openings in cismontane woodland, coastal scrub (sandy or gravelly), 3-300m	Alameda*, Monterey, Marin, Santa Clara*, Santa Cruz, San Francisco, San Mateo* Counties	Sandy terraces and bluffs or in loose sand, sandy soil	Apr-Sept	Yes	Low, on sandy soil in woodland openings, possibly extirpated, last seen 1902
Clarkia jolonensis Jolon clarkia	–	–	1B	Cismontane woodland, chaparral, coastal scrub, 20-660m	Endemic to Monterey County		Apr-June	Yes	Low, last sighting in 1947
Collinsia multicolor San Francisco collinsia	–	–	1B	Closed-cone coniferous forest, coastal scrub, 30-250m	Monterey, Santa Clara, Santa Cruz, San Francisco, San Mateo Counties	Sometimes on serpentinite in coastal scrub or decomposed shale mixed with humus	Mar-May	Yes	Low, last seen 1903
Cordylanthus rigidus ssp. littoralis Seaside bird's beak	–	E	1B	Closed-cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes, coastal scrub, 0-425m	Endemic to Monterey and Santa Barbara Counties	Sandy or disturbed areas in coastal scrub; sandy soils of stabilized dunes in maritime chaparral	Apr-Oct	Yes	High, especially where sandy soils present
Corethrogyne leucophylla Branching beach aster	–	–	3	Closed-cone coniferous forest, coastal dunes, 3-60m	Monterey, Santa Cruz, San Mateo, and San Louis Obispo Counties		May-Dec	Yes	High
Cupressus goveniana ssp. *goveniana* Gowen cypress	T	–	1B	Closed-cone coniferous forest, maritime chaparral, 30-300m	Endemic to Monterey County	Coastal terraces; usually in sandy soils; sometimes w/Monterey pine, bishop pine	NA	Yes	Low, only 3 native stands known, both near the coast

Table 3.3-1, continued

Species	Status [1]			Habitat	California Distribution	Microhabitat	Blooming Period	Habitat Present?	Potential to Occur in CVMP Area
	USFWS	CDFG	CNPS						
Cupressus macrocarpus Monterey cypress	–	–	1B	Closed-cone coniferous forest, 10-30m	Endemic to Monterey County	Granitic soils	NA	Yes	Low, only 2 native stands known, both along the coast
Delphinium hutchinsoniae Hutchinson's larkspur	–	–	1B	Broadleaved upland forest, chaparral, coastal prairie, coastal scrub, 0-400m	Endemic to Monterey County	On semi-shaded, slightly moist slopes, usually west-facing	Mar-June	Yes	Yes
Delphinium umbraculorum Umbrella larkspur	–	–	1B	Cismontane woodland, 400-1600m	Monterey, Santa Barbara, San Luis Obispo, and Ventura Counties	Moist areas	Apr-Jun	Yes	High, where project area is above 400m (1300’)
Ericameria fasciculate Eastwood's goldenbush	–	–	1B	Closed-cone coniferous forest, maritime chaparral, coastal dunes, coastal scrub, 30-275m	Endemic to Monterey County	Sandy openings in coastal scrub	July-Oct	Yes	High, occurrence in CVMP area
Eriogonum nortonii Pinnacles buckwheat	–	–	1B	Chaparral, valley and foothill grassland, 300-975m	Monterey and San Benito Counties	Sandy soils in chaparral; often on recent burns in valley and foothill grassland	May-Aug (Sept)	Yes	High, where CVMP area is above 300m (950')
Erysimum ammophilum Coast wallflower	–	–	1B	Chaparral, coastal dunes, coastal scrub, 0-60m	Monterey, Santa Cruz, and San Mateo Counties, Santa Rosa Island	Sandy soils and openings in maritime chaparral, coastal dunes, and coastal scrub	Feb-June	Yes	High, where sandy soils are present

Table 3.3-1, continued

Species	Status [1]			Habitat	California Distribution	Microhabitat	Blooming Period	Habitat Present?	Potential to Occur in CVMP Area
	USFWS	CDFG	CNPS						
Erysimum menziesii ssp. *menziesii* Menzies' wallflower	E	E	1B	Coastal dunes, 0-35m	Mendocino and Monterey Counties	Localized on dunes and coastal strand	Mar-June	No	None
Erysimum menziesii ssp. *yadonii* Yadon's wallflower	E	E	1B	Coastal dunes, 0-10m	Endemic to Monterey County		May-Sept	No	None
Fritillaria liliacea Fragrant fritillary	–	–	1B	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland, 3-410m	Alameda, Contra Costa, Monterey, Marin, San Benito, Santa Clara, San Francisco, San Mateo, Solano, Sonoma Counties	Often on serpentinite; adobe (clay) soils of interior foothills	Feb-Apr	Yes	Low, possibly extirpated, last seen 1931
Gilia tenuiflora ssp. *arenaria* Sand gilia	E	T	1B	Maritime chaparral, cismontane woodland, coastal dunes, coastal scrub, 0-45m	Monterey and Santa Cruz Counties	Sandy soils; in bare, wind-sheltered areas, often near the dune summit or in hind dunes.	Apr-June	Yes	Low, most likely coastal, but may be present in sandy soils
Grindelia hirsutula var. maritime San Francisco gumplant	–	–	1B	Coastal bluff scrub, coastal scrub, valley and foothill grassland	Monterey, Marin, Santa Cruz, San Francisco, San Luis Obispo, and San Mateo Counties	Sandy soils on serpentinite in grassland; generally occurs on slopes or ocean bluffs	June-Sept	Yes	High, where sandy soils on slopes are present
Holocarpha macradenia Santa Cruz tarplant	T	E	1B	Coastal prairie, coastal scrub, valley and foothill grassland, 10-220m	Alameda*, Contra Costa*, Monterey, Marin*, Santa Cruz, and Sonoma* Counties	Often on clay, sandy soils in grassland	Jun-Oct	Yes	High

Table 3.3-1, continued

Species	Status [1]			Habitat	California Distribution	Microhabitat	Blooming Period	Habitat Present?	Potential to Occur in CVMP Area
	USFWS	CDFG	CNPS						
Horkelia cuneata ssp. *sericea* Kellogg's horkelia	–	–	1B	Closed-cone coniferous forest, coastal scrub, maritime chaparral, 10-200m	Alameda*, Monterey, Marin*, Santa Barbara, Santa Cruz, San Francisco*, San Luis Obispo, and San Mateo Counties	Openings on sandy or gravelly soils; on old dunes and coastal sandhills	Apr-Sept	Yes	High, where sandy or gravelly soils present
Lasthenia conjugens Contra Costa goldfields	E	–	1B	Cismontane woodland, valley and foothill grassland, 0-470m (below 700')	Alameda, Contra Costa, Mendocino*, Monterey, Marin, Napa, Santa Barbara*, Santa Clara*, Solano, Sonoma Counties	Alkaline playas and vernal pools and swales, mesic areas	Mar-June	Yes	Low, only present if low-lying mesic areas present
Layia carnosa Beach layia	E	E	1B	Coastal dunes, coastal scrub, 0-60m	Humboldt, Monterey, Marin, Santa Barbara*, and San Francisco* Counties; Hugely reduced in range along California's North Coast dunes.	Sandy soils in coastal scrub; On sparsely vegetated semi-stabilized dunes, usually behind foredunes	Mar-July	Yes	Low, most likely coastal, but may be present in sandy soils in coastal scrub
Leptosiphon croceus Coast yellow leptosiphon	–	–	1B	Coastal bluff scrub, coastal prairie, 10-150m	Monterey, Marin*, San Mateo Counties		Apr-May	No	None
Lupinus tidestromii Tidestrom's lupine	E	E	1B	Coastal dunes, 0-60m	Monterey, Marin, and Sonoma Counties	Partially stabilized dunes, immediately near the ocean	Apr-Jun	No	None
Malacothamnus palmeri var. *involucratus* Carmel Valley bush mallow	–	–	1B	Chaparral, cismontane woodland, coastal scrub, 30-1100m	Monterey and San Louis Obispo Counties	Talus hilltops and slopes; sometimes on serpentinite	May-Aug (Oct)	Yes	High, occurrence in CVMP area

Table 3.3-1, continued

Species	Status [1] USFWS	CDFG	CNPS	Habitat	California Distribution	Microhabitat	Blooming Period	Habitat Present?	Potential to Occur in CVMP Area
Malacothamnus palmeri var. *palmeri* Santa Lucia bush mallow	–	–	1B	Chaparral, 60-360m	Monterey? and San Louis Obispo Counties	Rocky places in chaparral; dry rocky slopes, mostly near summits, but occasionally extending down canyons to the sea	May-July	Yes	High, occurrence in CVMP area
Malacothrix saxatilis var. *arachnoidea* Carmel Valley malacothrix	–	–	1B	Chaparral, 25-335m	Monterey, Santa Barbara, San Benito, San Luis Obispo Counties	Rocky places in chaparral; rock outcrops or steep rocky roadcuts	(Mar)June-Dec	Yes	High, in rocky sites, occurrence in CVMP area
Micropus amphibolus Mt. Diablo cottonweed	–	–	3	Broadleaved upland forest, chaparral, cismontane woodland, valley and foothill grassland, 45-825m	Alameda, Contra Costa, Colusa, Lake (LAK), Monterey, Marin, Napa, Santa Barbara, Santa Clara, Santa Cruz, San Joaquin, San Luis Obispo, Solano, Sonoma counties	Bare rocky slopes in grassland	Mar-May	Yes	High, especially in rocky sites
Microseris paludosa Marsh microseris	–	–	1B	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland, 5-300m	Mendocino, Monterey, Marin, San Benito, Santa Cruz), San Francisco*, San Luis Obispo, San Mateo *, Sonoma Counties		Apr-June(July)	Yes	Low, last seen 1942
Monolopia congdonii (listed as *Lembertia congdonii)* San Joaquin woolythreads	E	–	1B	Chenopod scrub, valley and foothill grassland, 60-800m	Fresno, Kings, Kern, Santa Barbara, San Benito, San Luis Obispo, Tulare Counties (Monterey Co. too according to USFWS)	Sandy soil in grassland	Feb-May	Yes	High, where sandy soils occur in grassland

Table 3.3-1, continued

Species	Status [1] USFWS	CDFG	CNPS	Habitat	California Distribution	Microhabitat	Blooming Period	Habitat Present?	Potential to Occur in CVMP Area
Pinus radiate Monterey Pine	–	–	1B	Closed-cone coniferous forest, cismontane woodland, 25-185m	Monterey, Santa Cruz, San Luis Obispo, San Mateo, Baja California, Isla Guadalupe - Baja	Dry bluffs and slopes	NA	Yes	High, occurrence in CVMP area
Piperia yadonii Yadon's rein orchid	E	–	1B	Coastal bluff scrub, closed-cone coniferous forest, maritime chaparral, 10-510m	Endemic to Monterey County	On sandstone and sandy soil, but poorly drained and often dry.	May-Aug	Yes	High, where sand soils occur in closed-cone coniferous forest, occurrence in CVMP area
Plagiobothrys uncinatus Hooked popcorn-flower	–	–	1B	Chaparral, cismontane woodland, valley and foothill grassland, 300-760m	Monterey, San Benito, Santa Clara, San Luis Obispo, Stanislaus Counties	Sandy areas; sandstone outcrops and canyon sides; often in burned or disturbed areas	Apr-May	Yes	Low, last seen 1962
Potentilla hickmanii Hickman's cinquefoil	E	E	1B	Coastal bluff scrub, closed-cone coniferous forest, meadows and seeps, freshwater marshes and swamps, 10-135m	Monterey, San Mateo, and Sonoma* Counties	Freshwater marshes, seeps, and small streams in open areas in coastal bluff scrub or coniferous forest along the coast	Apr-Aug	Yes	Low, mostly coastal
Rosa pinetorum Pine rose	–	–	1B	Closed-cone coniferous forest, 2-300m	Monterey, Santa Cruz, and San Mateo? Counties		May-July	Yes	High
Sidalcea malachroides Maple-leaved checkerbloom	–	–	1B	Broadleaved upland forest, coastal prairie, coastal scrub, North Coast coniferous forest (Redwood & Douglas-fir forests), riparian woodland, 2-730m	UK	Woodland and clearings near coast, often disturbed areas	Apr-July (Aug)	Yes	Low, may have been extirpated, last sighting 1880s

Table 3.3-1, continued

Species	Status [1]			Habitat	California Distribution	Microhabitat	Blooming Period	Habitat Present?	Potential to Occur in CVMP Area
	USFWS	CDFG	CNPS						
Stebbinsoseris decipiens Santa Cruz microseris	–	–	1B	Broad-leaved upland forest, closed-cone coniferous forest, chaparral, coastal prairie, valley and foothill grassland, 10-500m	Monterey, Marin, Santa Cruz, San Francisco, San Luis Obispo, San Mateo Counties	Open areas in loose or disturbed soil, usually sandstone, shale, or serpentinite on seaward slopes	Apr-May	Yes	High, occurrence in CVMP area
Trifolium buckwestiorum Santa Cruz clover	–	–	1B	Broad-leaved upland forest, cismontane woodland, margins of coastal prairie, 105-610m	Mendocino, Monterey, Santa Cruz, and Sonoma Counties	Moist grassy areas on margins of broad-leaved upland forest, cismontane woodland, and coastal prairie, sometimes in disturbed areas	Apr-Oct	Yes	High
Trifolium polyodon Pacific Grove clover	–	R	1B	Closed-cone coniferous, coastal prairie, meadows and seeps, valley and foothill grassland, 5-120m	Endemic to Monterey County	Mesic areas, along small seeps and springs in grassy openings	Apr-June	Yes	High, occurrence in CVMP area
Trifolium tirchocalyx Monterey clover	E	E	1B	Closed-cone coniferous forest, 30-240m	Endemic to Monterey County	Sandy, openings in burned areas; poorly drained, low nutrient soil w/hardpan underneath	Apr-June	Yes	Low, most soils are well-drained

Species	Status [1] USFWS	CDFG	CNPS	Habitat	California Distribution	Microhabitat	Blooming Period	Habitat Present?	Potential to Occur in CVMP Area

Notes

* Extirpated in this County

? Uncertainty regarding location of population within County

Legal Status Definitions

– No Listing

Federal

E = Listed as "endangered" (legally protected) under the federal Endangered Species Act

T = Listed as "threatened" (legally protected) under the federal Endangered Species Act

State

E = Listed as "endangered" under the state Endangered Species Act

T = Listed as "threatened" under the state Endangered Species Act

SCC = Species of special concern in California

FP = Fully protected under the California Fish and Game Code

R = Listed as rare under the California Native Plant Protection Act. This category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation

California Native Plant Society

List 1A species = Presumed extinct in California

List 1B species = Rare, threatened, or endangered in California and elsewhere

List 2 species = Rare, threatened, or endangered in California but more common elsewhere

List 3 species = Plants about which more information is needed to determine their status.

List 4 species = Plants of limited distribution

Table 3.3-2. Special-Status Wildlife Species with Potential to Occur in the CVMP Area[1]

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in CVMP Area
Longhorn fairy shrimp *Branchinecta longiantenna*	E/--	Eastern margin of central Coast Ranges from Contra Costa County to San Luis Obispo County; disjunct population in Madera County	Small, clear pools in sandstone rock outcrops of clear to moderately turbid clay- or grass-bottomed pools	Suitable habitat may be present; no occurrences in the CVMP area (CNDDB 2006; Eriksen & Belk 1999)
Conservancy fairy shrimp *Branchinecta conservatio*	E/--	Disjunct occurrences in Solano, Merced, Tehama, Ventura, Butte, and Glenn Counties	Large, deep vernal pools in annual grasslands	Suitable habitat may be present; no occurrences in the CVMP area (CNDDB 2006; Eriksen & Belk 1999)
Vernal pool fairy shrimp *Branchinecta lynchi*	T/--	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County	Common in vernal pools; also found in sandstone rock outcrop pools	Suitable habitat may be present; no occurrences in the CVMP area (CNDDB 2006; Eriksen & Belk 1999)
Smith's blue butterfly *Euphilotes enoptes smithi*	E/--	Localized populations along the immediate coast and in coastal canyons of Monterey County; single populations reported in Santa Cruz and San Mateo Counties	Coastal dunes and hillsides that support seacliff buckwheat (*Eriogonum parvifolium*) or coast buck-wheat (*Eriogonum latifolium*); these plants used as a nectar source for adults and host plant for larvae	Suitable habitat is present and many CNDDB (2006) records for occurrences in the CVMP area
Monarch butterfly (overwintering habitat) *Danaus plexippus*	--/--	Adults migrate from August-October, and winter along the California coast and in central Mexico.	Open habitats including fields, meadows, weedy areas, marshes, and roadsides. Monarch butterflies roost in wind-protected tree groves (such as eucalyptus) with nectar and water sources nearby. Caterpillar host plants are milkweeds.	Suitable overwintering habitat may be present; two CNDDB (2006) records for occurrences west and southwest of the CVMP area

[1] Program area = Carmel Valley Master Plan (CVMP) area.

Table 3.3-2, continued

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in CVMP Area
California tiger salamander *Ambystoma californiense*	T/SSC	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County.	Small ponds, lakes, or vernal pools in grasslands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy	Suitable aquatic and upland habitat likely present; three CNDDB (2006) records for occurrences within 1-mile of the CVMP area
Santa Cruz long-toed salamander *Ambystoma macrodactylum croceum*	E/E, FP	Three metapopulations and breeding sites in coastal areas of southern Santa Cruz County and northern Monterey County	Lifetime spent mostly underground in willow groves, coastal scrub, coast live oak, or riparian habitats; migrates to breeding ponds in early to late winter, and juveniles disperse from the pond in September	CVMP area is outside of species known range
Arroyo toad *Bufo californicus*	E/SSC	Along the coast and foothills from San Luis Obispo County to San Diego County and inland to San Bernardino County	Sandy riverbanks, washes, and arroyos with open riparian vegetation. Prefers shallow, exposed streamside, quiet water stretches, or overflow pools with silt-free sandy or gravelly bottoms for breeding. Adults and young use nearby damp sandy terraces with scattered vegetation for shelter and burrow sites.	CVMP area is outside of species known range
California red-legged frog *Rana aurora draytoni*	T/SSC	Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehama County to Fresno County	Permanent and semipermanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation. May estivate in rodent burrows or cracks during dry periods	Suitable aquatic and upland habitat present; several CNDDB (2006) records for occurrences throughout the Carmel River in the CVMP area
Southwestern pond turtle *Clemmys marmorata pallida*	--/SSC	Occurs along the central coast of California east to the Sierra Nevada and along the southern California coast inland to the Mojave and Sonora Deserts; range overlaps with that of the northwestern pond turtle throughout the Delta and in the Central Valley	Occupies aquatic habitats, such as ponds, marshes, or streams, with rocky or muddy bottoms in woodlands, grasslands, and open forests. Also requires aquatic vegetation for cover and food. Nests in upland adjacent to aquatic habitat.	Suitable aquatic habitat present; no occurrences in the CVMP area (CNDDB 2006)

Table 3.3-2, continued

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in CVMP Area
Blunt-nosed leopard lizard *Gambelia (=Crotaphytus) silus*	E/E	San Joaquin Valley from Stanislaus County through Kern County and along the eastern edges of San Luis Obispo and San Benito Counties	Open habitats with scattered low bushes on alkali flats, and low foothills, canyon floors, plains, washes, and arroyos; substrates may range from sandy or gravelly soils to hardpan	CVMP area is outside of species known range
Black legless lizard *Anniella pulchra nigra*	--/SSC	Monterey Bay region	Coastal dunes with native vegetation or chaparral, pine-oak woodland, or riparian areas with loose soil for burrowing	Suitable habitat not present
California brown pelican (nesting colony and communal roosts) *Pelecanus occidentalis californicus*	E/E, FP	Along the entire California coast; rare to uncommon on the Salton Sea; breeds on the Channel Islands	Estuarine, marine, subtidal, and marine pelagic waters along the coast. Rests on water, inaccessible rocks, mudflats, sandy beaches, wharfs, and jetties.	Suitable habitat not present
California condor *Gymnogyps californianus*	E/E, FP	Historically, rugged mountain ranges surrounding the southern San Joaquin Valley; currently, most individuals are in captive populations, but a few birds were recently released in the rugged portions of the Los Padres National Forest	Requires large blocks of open savanna, grasslands, and foothill chaparral with large trees, cliffs, and snags for roosting and nesting	CVMP area is outside of species known range
White-tailed kite *Elanus leucurus*	--/FP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	Suitable nesting habitat likely present; no CNDDB (2006) records for nests in the CVMP area
Bald eagle *Haliaeetus leucocephalus*	T/E, FP	Nests in Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties and in the Lake Tahoe Basin. Reintroduced into central coast. Winter range includes the rest of California, except the southeastern deserts, very high altitudes in the Sierra Nevada, and east of the Sierra Nevada south of Mono County	In western North America, nests and roosts in coniferous forests within 1 mile of a lake, reservoir, stream, or the ocean	Suitable nesting habitat may be present along Carmel River; no CNDDB (2006) records for nests in the CVMP area

Table 3.3-2, continued

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in CVMP Area
Sharp-shinned hawk *Accipiter striatus*	--/SSC	Permanent resident in the Sierra Nevada, Cascade, Klamath, and north Coast Ranges at mid elevations and along the coast in Marin, San Francisco, San Mateo, Santa Cruz, and Monterey Counties. Winters over the rest of the state except at very high elevations	Dense canopy ponderosa pine or mixed-conifer forest and riparian habitats	Suitable nesting habitat present; no CNDDB (2006) records for nests in the CVMP area
Cooper's hawk *Accipiter cooperii*	--/SSC	Throughout California except high altitudes in the Sierra Nevada. Winters in the Central Valley, southeastern desert regions, and plains east of the Cascade Range	Nests in a wide variety of habitat types, from riparian woodlands and digger pine-oak woodlands through mixed conifer forests	Suitable nesting habitat present; no CNDDB (2006) records for nests in the CVMP area
California clapper rail *Rallus longirostris obsoletus*	E/E, FP	Marshes around the San Francisco Bay and east through the Delta to Suisun Marsh	Restricted to salt marshes and tidal sloughs; usually associated with heavy growth of pickle-weed; feeds on mollusks removed from the mud in sloughs	Suitable habitat not present
Western snowy plover (coastal populations) *Charadrius alexandrinus nivosus* (nesting)	T/SSC	Population defined as those birds that nest adjacent to or near tidal waters, including all nests along the mainland coast, peninsulas, offshore islands, and adjacent bays and estuaries. Twenty breeding sites are known in California from Del Norte to Diego County	Coastal beaches above the normal high tide limit in flat, open areas with sandy or saline substrates; vegetation and driftwood are usually sparse or absent	Suitable habitat not present
California least tern (nesting colony) *Sterna antillarum browni*	E/E, FP	Nests on beaches along the San Francisco Bay and along the southern California coast from southern San Luis Obispo County south to San Diego County	Nests on sandy, upper ocean beaches, and occasionally uses mudflats; forages on adjacent surf line, estuaries, or the open ocean	Suitable habitat not present
Marbled murrelet *Brachyramphus marmoratus*	T/E	Nesting sites from the Oregon border to Eureka and between Santa Cruz and Half Moon Bay; winters in nearshore and offshore waters along the entire California coastline	Mature, coastal coniferous forests for nesting; nearby coastal water for foraging; nests in conifer stands greater than 150 years old and may be found up to 35 miles inland; winters on subtidal and pelagic waters often well offshore	Suitable habitat may be present; no CNDDB (2006) records for occurrences in the CVMP area

Table 3.3-2, continued

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in CVMP Area
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	C/E	Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado Rivers	Wide, dense riparian forests with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging; may avoid valley-oak riparian habitats where scrub jays are abundant	CVMP area is outside of species known range
Western burrowing owl *Athene cunicularia hypugea*	--/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast	Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows	Suitable habitat may be present; no CNDDB (2006) records for occurrences in the CVMP area
Black swift *Cypseloides niger* (nesting)	--/SSC	Breeds very locally in the Sierra Nevada and Cascade Range, the San Gabriel, San Bernardino, and San Jacinto mountains, and in coastal bluffs from San Mateo county south to near San Luis Obispo county	Nests in moist crevice or cave on sea cliffs above the surf, or on cliffs behind, or adjacent to, waterfalls in deep canyons	Suitable nesting habitat may be present in canyons; no CNDDB (2006) records for occurrences in the CVMP area
Purple martin *Progne subis*	--/SSC	Coastal mountains south to San Luis Obispo County, west slope of the Sierra Nevada, and northern Sierra and Cascade ranges. Absent from the Central Valley except in Sacramento. Isolated, local populations in southern California	Nests in abandoned woodpecker holes in oaks, cottonwoods, and other deciduous trees in a variety of wooded and riparian habitats. Also nests in vertical drainage holes under elevated freeways and highway bridges	Suitable nesting habitat likely present; no CNDDB (2006) records for nests in the CVMP area
Least Bell's vireo *Vireo bellii pusillus*	E/E	Small populations remain in southern Inyo, southern San Bernardino, Riverside, San Diego, Orange, Los Angeles, Ventura, and Santa Barbara Counties	Riparian thickets either near water or in dry portions of river bottoms; nests along margins of bushes and forages low to the ground; may also be found using mesquite and arrow weed in desert canyons	CVMP area is outside of species known range
Yellow warbler *Dendroica petechia brewsteri* (nesting)	--/SSC	Nests over all of California except the Central Valley, the Mojave Desert region, and high altitudes along the eastern side of the Sierra Nevada. Winters along the Colorado River and in parts of Imperial and Riverside Counties. Two small permanent populations in San Diego and Santa Barbara Counties	Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral; may also use oaks, conifers, and urban areas near stream courses	Suitable nesting habitat likely present; no CNDDB (2006) records for nests in the CVMP area

Table 3.3-2, continued

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in CVMP Area
Tricolored blackbird *Agelaius tricolor*	--/SSC	Permanent resident in the Central Valley from Butte County to Kern County. Breeds at scattered coastal locations from Marin County south to San Diego County; and at scattered locations in Lake, Sonoma, and Solano Counties. Rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grain fields. Habitat must be large enough to support 50 pairs. Probably requires water at or near the nesting colony	Suitable nesting habitat may be present; no CNDDB (2006) records for nests in the CVMP area
Pallid bat *Antrozous pallidus*	--/SSC	Occurs throughout California except the high Sierra from Shasta to Kern County and the northwest coast, primarily at lower and mid elevations	Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts	May roost, forage. and drink in the CVMP area
Monterey dusky-footed woodrat *Neotoma fuscipes luciana*	--/SSC	Occurs throughout Monterey and northern San Luis Obispo Counties where appropriate habitat is available	Coast live oak woodland and chaparral habitats with moderate canopy cover and moderate to dense understory and abundant deadwood for nest construction	Suitable habitat present along the Carmel River and other drainages; no CNDDB (2006) records for nests in the CVMP area
San Joaquin kit fox *Vulpes macrotis mutica*	E/T	Principally occurs in the San Joaquin Valley and adjacent open foothills to the west; recent records from 17 counties extending from Kern County north to Contra Costa County	Saltbush scrub, grassland, oak, savanna, and freshwater scrub	CVMP area is outside of species known range
Southern sea otter *Enhydra lutris nereis*	T/FP	Occurs approximately from the vicinity of Half Moon Bay south to Gaviota, California. Approximately 20 otters, including pups, are at San Nicolas Island as a result of translocation efforts to establish an experimental population	Coastal waters, typically within 1 km of shoreline. Often associated with kelp beds	Suitable habitat not present
South Central California Coast Steelhead *Oncorhynchus mykis*s	T/---	The distinct population segment is located in coastal streams from Aptos Creek (Santa Cruz County) to Grover Beach in San Luis Obispo	Coastal streams	Suitable migratory and rearing habitat located in Carmel River. Spawning habitat upstream.

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in CVMP Area
American badger *Taxidea taxus*	—/SSC	Throughout California, except for the humid coastal forests of northwestern California in Del Norte and the northwestern Humboldt Counties	Requires sufficient food, friable soils, and relatively open uncultivated ground; preferred habitat includes grasslands, savannas, and mountain meadows near timberline	Suitable habitat may be present; no CNDDB (2006) records for occurrences in the CVMP area

Notes

Legal Status Definitions

Federal

– = No status

E = Listed as "endangered" under the federal Endangered Species Act

T = Listed as "threatened" under the federal Endangered Species Act

C = Candidate for threatened or endangered status

FPD = Federally proposed for delisting

State

– = No status

E = Listed as "endangered" under the state Endangered Species Act

T = Listed as "threatened" under the state Endangered Species Act

SCC = Species of special concern in California

FP = Fully protected under the California Fish and Game Code

special-status wildlife species within the program area. The table was compiled based on the following sources:

- USFWS species list for Monterey County (U.S. Fish and Wildlife Service 2006) (Appendix B),
- a records search of the CNDDB for the Monterey, Seaside, Carmel Valley USGS 7.5-minute quadrangles (California Natural Diversity Database 2006), and
- a review of previously prepared environmental documents for projects in the vicinity.

Thirty-four special-status wildlife species were identified as having the potential to occur within the program area. Thirteen of these species would not occur in the program area because suitable habitat for these species is not present within the program area (coastal marine/habitat) and/or the program area is located outside of the species' known range. Of the remaining 21 species, there are CNDDB records for occurrences of two wildlife species (Smith's blue butterfly and California red-legged frog) in the program area (California Natural Diversity Database 2006). In addition, there are records for monarch butterfly, California tiger salamander, and tricolored blackbird within 1-mile of the program area boundary. Although there are no CNDDB records for occurrences of the remaining species, it is expected that suitable habitat for these species is present in the program area, based on the plant communities/habitat types present. A portion of the program area is located within designated critical habitat for California red-legged frog (50 FR 19244-19346, April 13, 2006). The program area does not contain designated critical habitat for any other federally listed wildlife species.

Special-Status Fish Species

Table 3.3-2 includes special-status fish species known to occur in and near Carmel Valley. It includes the legal status, distribution, and habitat preference for special-status fish species within the program area. Only one special status fish species was identified as having the potential to occur within the program area, South-Central California Coast District Population Segment (DPS) of steelhead (*Oncorhynchus mykiss*). This DPS includes all naturally spawned populations of steelhead in California streams from Aptos to south of Grover City. The Carmel River is designated critical habitat (FR 70: 52488) for steelhead. Steelhead are anadromous (sea-run) rainbow trout that spawn in freshwater, spend the first year (or years) of life in freshwater, and then migrate to the ocean where they continue to grow and mature before returning to spawn.

Introduction of Noxious Weeds

For the purpose of this analysis and future project-specific assessments, a noxious weed is defined as a plant that could displace native plants and natural

habitats, affect the quality of forage on rangelands, or affect cropland productivity. The California Department of Food and Agriculture (CDFA) lists weeds and assigns ratings (A–C) to each species on the list. The ratings reflect CDFA's view of the statewide importance of the pest, the likelihood that eradication or control efforts would be successful, and the present distribution of the pest in the state. These ratings are guidelines that indicate the most appropriate action to take against a pest under general circumstances. The rating system is explained below.

- A: an organism of known economic importance subject to state (or commissioner, when acting as a state agent) enforced action involving eradication, quarantine, containment, rejection, or other holding action.
- B: an organism of known economic importance subject to eradication, containment, control, or other holding action at the discretion of the individual county agricultural commissioner, or an organism of known economic importance subject to state-endorsed holding action and eradication only when found in a nursery.
- C: an organism subject to no state-enforced action outside of nurseries except to retard spread at the discretion of the commissioner, or an organism subject to no state-enforced action except to provide for pest cleanliness in nurseries.

Noxious weeds in Monterey County were not inventoried for this program-level analysis because target weeds would differ widely from project to project, depending on the sensitivity of the site to infestation, the nature of the proposed project, and the type of weeds in the immediate area. In subsequent project-specific environmental review, a qualified botanist would develop a target list of noxious weeds that present a risk to the specific program area. The target list would include all A-rated weed species. Some B- and C-rated species would be included on project-specific target lists if they are identified as target noxious weeds by the county agricultural commission. Weeds would also be included in target lists if they are considered to have great potential for displacing native plants and damaging natural habitats but are not considered too widespread to be controlled effectively.

An Executive Order on invasive species (February 3, 1999) directs weed control (see "Regulatory Setting" below). As part of project-specific environmental analyses, the Monterey County Agricultural Commissioner would be contacted to discuss noxious weed infestation and dispersal on private and public rights-of-way.

Regulatory Setting

This section describes the federal, state, and local plans, policies, and regulations that are relevant to biological resources within the program area.

Federal Regulations

This discussion focuses on the federal requirements associated with subsequent CEQA compliance for the proposed program. Additional federal requirements would apply to project-specific components of the program that receive federal funding or otherwise affect federal lands and decision-making. The additional federal requirements do not apply to the proposed program or this program EIR, but they would need to be addressed if federal funding or another federal action (e.g., if federal lands were crossed or a federal permit were required) were triggered at the time of consideration and approval of a specific project.

Endangered Species Act

The ESA protects fish and wildlife species, and their habitats, that have been identified by USFWS or National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) as threatened or endangered. *Endangered* refers to species, subspecies, or distinct population segments that are in danger of extinction through all or a significant portion of their range; *threatened* refers to species, subspecies, or distinct population segments that are likely to become endangered in the near future.

The ESA is administered by USFWS and NMFS. In general, NMFS is responsible for protection of ESA-listed marine species and anadromous fishes, whereas listed, proposed, and candidate wildlife and plant species and commercial fish species are under USFWS jurisdiction. *Take* of listed species can be authorized through either the Section 7 consultation process for actions by federal agencies or the Section 10 permit process for actions by nonfederal agencies. Federal agency actions include activities that are:

- on federal land,
- conducted by a federal agency,
- funded by a federal agency, or
- authorized by a federal agency (including issuance of federal permits and licenses).

Under Section 7, the federal agency conducting, funding, or permitting an action (the federal lead agency) must consult USFWS or NMFS, as appropriate, to ensure that the proposed action will not jeopardize endangered or threatened species or destroy or adversely modify designated critical habitat. If a proposed project "may affect" a listed species or designated critical habitat, the lead agency is required to prepare a biological assessment (BA) evaluating the nature and severity of the expected effect. In response, USFWS issues a biological opinion (BO) with a determination that the proposed action:

- May jeopardize the continued existence of one or more listed species (jeopardy finding) or result in the destruction or adverse modification of critical habitat (adverse modification finding), or

- Will not jeopardize the continued existence of any listed species (no jeopardy finding) or result in adverse modification of critical habitat (no adverse modification finding).

The BO issued by USFWS may stipulate discretionary "reasonable and prudent" conservation measures. If the project would not jeopardize a listed species, USFWS issues an incidental take statement to authorize the proposed activity.

In cases where a nonfederal entity is undertaking an action that does not require federal authorization, the take of listed species must be permitted by USFWS through the Section 10 process. If the proposed project would result in the incidental take of a listed species, the applicant must first obtain a Section 10(a)(1)(B) incidental take permit (ITP). Incidental take under Section 10 is defined as take of federally listed fish and wildlife species "that is incidental to, but not the purposes of, otherwise lawful activities". To receive an ITP, the nonfederal entity is required to prepare a Habitat Conservation Plan (HCP). The HCP must include conservation measures that avoid, minimize, and mitigate the project's impact on listed species and their habitat.

Migratory Bird Treaty Act

The MBTA (16 USC 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703; 50 CFR 10, 21). Most actions that result in taking or in permanent or temporary possession of a protected species constitute violations of the MBTA. Examples of permitted actions that do not violate the MBTA are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird-banding, and other similar activities. USFWS is responsible for overseeing compliance with the MBTA, and the U.S. Department of Agriculture's (USDA's) Animal Damage Control Officer makes recommendations on related animal protection issues.

Clean Water Act

The CWA was enacted as an amendment to the federal Water Pollution Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to waters of the United States. The CWA serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The following discussion gives background information as relevant to biological resources; additional discussion of the CWA is provided in Section 3.2, *Hydrology and Water Quality*.

Waters of the United States are areas subject to federal jurisdiction pursuant to Section 404 of the CWA. *Waters of the United States* are typically divided into two types: *wetlands* and *other waters of the United States*.

Wetlands

Wetlands are "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR § 328.3[b], 40 CFR § 230.3). To be considered subject to federal jurisdiction, a wetland must normally support hydrophytic vegetation, hydric soils, and wetland hydrology (Environmental Laboratory 1987).

Other Waters of the United States

Other waters of the United States are seasonal or perennial water bodies, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high water mark but lack positive indicators for the three wetland parameters (33 CFR 328.4).

Permits for Fill Placement in Waters and Wetlands (Section 404)

CWA Section 404 regulates the discharge of dredged and fill materials into waters of the United States.

Applicants must obtain a permit from the Corps for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity. The Corps may issue either an individual permit evaluated on a case-by-case basis or a general permit evaluated at a program level for a series of related activities. General permits are preauthorized and are issued to cover multiple instances of similar activities expected to cause only minimal adverse environmental effects. Nationwide permits (NWPs) are a type of general permit issued to cover particular fill activities. Each NWP specifies particular conditions that must be met for the NWP to apply to a particular project. Waters of the United States in the program area are under the jurisdiction of the San Francisco District of the Corps.

Compliance with CWA Section 404 requires compliance with several other environmental laws and regulations. The Corps cannot issue an individual permit or verify the use of a general permit until the requirements of NEPA, ESA, and the National Historic Preservation Act (NHPA) have been met. In addition, the Corps cannot issue or verify any permit until a water quality certification or a waiver of certification has been issued pursuant to CWA Section 401.

Water Quality Certification (Section 401)

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a Section 404 permit) must also comply with CWA Section 401.

Executive Order 13112 (Prevention and Control of Invasive Species)

Executive Order 13112 (February 3, 1999) directs all federal agencies to prevent and control the introduction of invasive species in a cost-effective and environmentally sound manner. It established a national Invasive Species Council comprising federal agencies and departments and a supporting Invasive Species Advisory Committee comprising state, local, and private entities. The Invasive Species Council and Invasive Species Advisory Committee has prepared a National Invasive Species Management Plan (2001) that recommends objectives and measures to implement the Executive Order and prevent the introduction and spread of invasive species. The Executive Order and directives from FHWA require consideration of invasive species in NEPA analyses, including identification and distribution, potential impacts, and prevention or eradication measures.

State Regulations

California Endangered Species Act

California implemented CESA in 1984. It prohibits the take of endangered and threatened species; however, habitat destruction is not included in the state's definition of take. CESA Section 2090 requires state agencies to comply with endangered species protection and recovery, and to promote conservation of these species. DFG administers CESA and authorizes take through Section 2081 agreements (except for species designated as fully protected).

For rare plant species, CESA defers to the California Native Plant Protection Act of 1977, which prohibits importing, taking, or selling rare and endangered plants. State-listed plants are protected mainly in cases in which state agencies are involved in projects under CEQA. In such cases, plants that are listed as rare under the California Native Plant Protection Act are not protected under CESA but can be protected under CEQA.

California Fish and Game Code

Fully Protected Species

The California Fish and Game Code provides protection from take for a variety of species, referred to as *fully protected species*. Section 5050 lists protected amphibians and reptiles. Section 3515 prohibits take of fully protected fish species. Eggs and nests of all birds are protected under Section 3503, nesting birds (including raptors and passerines) under Sections 3503.5 and 3513, birds of prey under Section 3503.5, and fully protected birds under Section 3511. Migratory non-game birds are protected under Section 3800. Mammals are protected under Section 4700. The California Fish and Game Code defines *take* as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Except for take related to scientific research, all take of fully protected species is prohibited. There are two fully protected species, white-tailed kite and bald eagle, which have the potential to occur in the program area.

Streambed Alteration Agreements (Section 1602 et seq.)

DFG has jurisdictional authority over wetland resources associated with rivers, streams, and lakes under California Fish and Game Code Sections 1602. DFG has the authority to regulate all work under the jurisdiction of California that would substantially divert, obstruct, or change the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed.

In practice, DFG marks its jurisdictional limit at the top of the stream or lake bank or the outer edge of the riparian vegetation, where present, and sometimes extends its jurisdiction to the edge of the 100-year floodplain. Because riparian habitats do not always support wetland hydrology or hydric soils, wetland boundaries, as defined by CWA Section 404, sometimes include only portions of the riparian habitat adjacent to a river, stream, or lake. Therefore, jurisdictional boundaries under Section 1600 may encompass a greater area than those regulated under CWA Section 404.

DFG enters into a Streambed Alteration Agreement (SAA) with an applicant and can request conditions to ensure that no net loss of wetland values or acreage will be incurred. The streambed or lakebed alteration agreement is not a permit but, rather, a mutual agreement between DFG and the applicant.

Sections 3503 and 3503.5

Section 3503 of the California Fish and Game Code prohibits the killing of birds or the destruction of bird nests. Section 3503.5 prohibits the killing of raptor species and the destruction of raptor nests.

Local Policies and Regulations

This section summarizes local policies and regulations that pertain to biological resources that could affect or be affected by the proposed roadway improvements.

Tree Protection

The County has an ordinance for the protection of trees within its jurisdiction. Tree protection within the County varies in accordance with different areas and master plans, which provide specific policies relative to the protection of specific types of trees. Within the Carmel Valley Master Plan (CVMP) area, a protected tree is defined as any oak, madrone, or redwood tree having a trunk diameter equal to or greater than 6-inches in diameter at 2-feet above ground. In addition, policies governing the removal of landmark oak trees are applied on a countywide basis and are subject to approval by the Director of Monterey County Resource Management Agency – Planning Department. The County defines landmark oak trees as "those trees which are twenty-four (24) inches or more in diameter when measured two feet above the ground, or trees which are visually significant, historically significant, or exemplary of their species" (16.60.030).

As a condition of permit approval, any applicant seeking to remove a protected tree from a property within County jurisdiction is required to relocate or replace each removed protected tree at a one-to-one ratio. Removal of more than three protected trees from a single lot over a one-year period requires submission of a Forest Management Plan and approval of a Use Permit by the Monterey County Planning Commission. The Forest Management Plan is to be prepared at the applicant's expense by a qualified professional forester (16.60.040).

Several tree removal activities are exempted from the provisions of the County tree ordinance. These include certain commercial timber operations; any governmental or utilities-related tree removal that occurs within public rights-of-way; and any construction-related tree removal that is included in an approved subdivision, Use Permit, or similar discretionary permit (16.60.040).

Wildlife Habitat

The County has numerous policies in place to protect sensitive wildlife habitat from development. The General Plan requires careful planning near areas with limited plant communities, areas with particular value for wildlife, and areas with high value for wildlife reproduction (Monterey County General Plan Policies 7.1 and 9.1). Within the CVMP area, development in or adjacent to areas of biological significance is strictly controlled but may be allowed under certain conditions provided impacts on the resources are minimized. In addition to the redwood community of Robinson Canyon and the riparian community and redwood community of Garzas Creek, the CVMP identifies the following as

areas of biological significance: wetlands, including marshes, seeps, and springs; native bunchgrass and natural meadows; cliffs, rock outcrops and unusual geologic substrates; and Ridgelines and wildlife migration routes (7.1.1.1 [CV]).

General Plan habitat guidelines are implemented through the Monterey County Zoning Ordinance. For all proposed development within a known sensitive habitat or within 100-feet of the habitat, the zoning ordinance requires a biological survey performed by a qualified biologist. Development within the habitat or the 100-foot buffer, including vegetation removal, excavation, grading, filling, and road construction is prohibited except for resource dependent uses. Only development with adequate mitigations or no significant or cumulative impacts to long-term maintenance of habitat may occur (21.66.020).

When proposed development within the CVMP area is either in or adjacent to a rare or endangered plant community, the County requires the project applicant to provide a botanical report prepared by a qualified botanist. The report includes a description of the habitat to be affected by the project, an assessment of the project's potential for impacting rare and endangered species, and suggestions for mitigation of project impacts. In any cases where a rare or endangered species is found onsite, development cannot proceed until an Incidental Taking Permit or exclusion is obtained and the State Department of Fish and Game is notified, pursuant to Fish and Game Code Chapter 10 Section 1913c (11.1.1.1 [CV]).

Floodplain Management

The County's floodplain management policies protect riparian habitat and streams by prohibiting the building of structures within the floodplain. The General Plan prohibits all new discretionary development including filling, grading, and construction within 200-feet of riverbanks or within the 100-year floodway except as permitted by ordinance. (16.2.3). The CVMP requires a permit for development within 200-feet of the Carmel River bank or 30-feet from any tributary bank (16.2.3 [CV]), and the County's Zoning Ordinance prohibits thinning or removal of riparian vegetation within 200-feet of the Carmel River without a use permit (21.64.130).

Criteria for Determining Significance

- In accordance with State CEQA Guidelines, applicable federal and state regulations, and local plans and policies, the proposed program would be considered to result in a significant impact if it would:have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by DFG or USFWS;
- have a substantial adverse effect on wetlands through direct removal, filling, hydrological interruption, or other means;

- interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- result in introduction of new noxious weed species or the spread of noxious weed species in the program area.
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance including the removal of any healthy native oak, madrone, or redwood trees.
- remove any landmark oak trees, defined as those "having a trunk diameter more than 24 inches measured above the ground at 2 feet, visually or historically significant; or
- conflict with the provisions of an adopted habitat conservation plan, natural communities conservation plan, or other approved local, regional, or state habitat conservation plan.

Standard professional practice was also used to determine whether an impact on biological resources would be significant. The proposed program would likely cause a significant impact if it resulted in:

- documented resource scarcity and sensitivity, both locally and regionally;
- decreased local and regional distribution of common and sensitive biological resources;
- long-term degradation of a sensitive plant community because of substantial alteration of land forms or site conditions (e.g., alteration of wetland hydrology);
- substantial loss of a plant community and associated wildlife habitat;
- fragmentation or isolation of wildlife habitats, especially riparian and wetland communities;
- substantial disturbance of wildlife because of human activities;
- disruption of natural wildlife movement corridors;
- substantial reduction in local population size attributable to direct mortality or habitat loss, lowered reproductive success, or habitat fragmentation of:
  - species qualifying as rare and endangered under CEQA,
  - species that are state or federally listed as threatened or endangered, or
  - portions of local populations that are candidates for state or federal listing and state species of concern; or
  - substantial reduction or elimination of species diversity or abundance.

Impacts and Mitigation Measures

A. Impacts on Vegetation

Impact BIO-1: Potential Disturbance or Loss of Sensitive Vegetation Types (Less than Significant with Mitigation)

There are several sensitive woodland and forest habitats within the program area; however, the majority of these habitats are not located within the proposed roadway improvement areas. These include blue oak woodland, Monterey pine forest, montane hardwood-conifer forest, and redwood forest. However, proposed roadway improvements could require encroachment onto these areas for construction staging or other construction activities. The disturbance or loss of these habitats is considered potentially significant because they may be native, in which case they are or would be considered sensitive habitats by DFG. Implementation of **Mitigation Measures BIO-1.1, BIO-1.2, and BIO-1.3** would reduce this impact to a **less-than-significant level**.

Mitigation Measure BIO-1.1: Conduct Focused Biological Surveys of Sensitive Vegetation Areas

The County shall retain a qualified biologist to conduct focused biological surveys to determine the presence of sensitive vegetation habitats within subsequent project-specific areas where roadway improvements will occur. Focused biological surveys shall be conducted according to relevant federal, state, and local policies and regulations and in coordination with regulatory agencies. The results of the surveys shall be summarized in a biological resources report used to inform subsequent environmental analyses, and shall be submitted to federal, state, and local agencies with jurisdiction over the project for review and approval, prior to commencement of any construction activities.

Mitigation Measure BIO-1.2: Avoid Impacts on Sensitive Woodland and/or Forest Habitats

If site-specific biological surveys identify presence of sensitive woodland and/or forest habitats within a specific project area, these habitats shall be protected from temporary construction disturbance by installing environmentally sensitive area fencing (orange construction barrier fencing) around the sensitive habitat(s). The environmentally sensitive area fencing shall be installed at least 20 feet from the edge of the population where feasible. The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications shall contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area.

Mitigation Measure BIO-1.3: Conserve Sensitive Woodland and/or Forest Habitats to Mitigate for Loss of a Potentially Native Stand

If it is not feasible to avoid affecting sensitive woodland and/or forest habitats, the County shall mitigate for the loss by preservation of the specific woodland or forest habitat that may be removed elsewhere at a 1:1 or greater ratio. Priority will be given to sites that are closest to the specific project area and that are connected to similar intact woodland or forest habitats, in order to protect local genetic diversity and preserve areas with greater habitat value. Preservation shall occur through a reserve designation, conservation easement, or similar mechanism.

Impact BIO-2: Potential Disturbance or Loss of Sensitive Riparian and/or Water/Aquatic Habitat including Wetlands (Significant and Unavoidable)

Construction activities associated with the proposed roadway improvements could result in the disturbance or removal of montane riparian habitat along Carmel River and its tributaries, specifically where the river runs adjacent to Carmel Valley Road in the mid-valley area (see Figure 3.3-1). Project-related improvements could result in long-term degradation of sensitive plant communities, fragmentation or isolation of an important wildlife habitat, or disruption of natural wildlife movement corridors or important rearing habitat for juvenile steelhead.

Construction activities associated with the proposed roadway improvements could also result in the disturbance or loss of waters of the United States, including the Carmel River and its tributaries; other water/aquatic habitats including unnamed streams; vernal pools; freshwater marshes; and other types of seasonal and perennial wetland communities. Wetlands and other waters of the United States could be affected through direct removal, filling, hydrological interruption (including dewatering), alteration of bed and bank, and other construction-related activities.

This impact is considered potentially significant because it could result in long-term degradation of a sensitive plant community, fragmentation or isolation of an important wildlife habitat, and disruption of natural wildlife movement corridors. This impact could also result in a loss of fish habitat for spawning and/or rearing. The extent of project-specific impacts and types of affected communities have not been determined. Implementation of **Mitigation Measures BIO-2.1 to BIO-2.6** would reduce these impacts, but not necessarily to a less-than-significant level for all roadway improvement projects. Therefore, this impact is considered **significant and unavoidable**.

Mitigation Measure BIO-2.1: Identify and Document Riparian Habitat

The County shall retain a qualified botanist to document the location, type, extent, and habitat functions and values for riparian habitat that

occurs in the program area. This information shall be mapped and documented as part of subsequent CEQA and/or NEPA environmental review (if required). **Mitigation Measures BIO-2.2 and BIO-2.3** shall be implemented concurrently.

Mitigation Measure BIO-2.2: Avoid or Minimize Disturbance of Riparian Habitats

To the extent possible, the County shall avoid impacts on riparian habitats by implementing the following measures.

- Each specific project will be redesigned or modified to avoid significant direct and indirect impacts on riparian habitats, if feasible.
- Installing environmentally sensitive area fencing around the affected habitat as stipulated by the Monterey County Zoning Ordinance and the CVMP will protect riparian habitats that occur near a specific project site. Depending on site-specific conditions, this buffer may be narrower or wider than 30 feet to protect the area from erosion. The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications shall contain clear language stating that construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities are prohibited within the fenced environmentally sensitive area.
- The potential for long-term loss of riparian vegetation will be minimized by trimming vegetation rather than removing the entire shrub where feasible. Shrub vegetation shall be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration. Cutting shall be limited to a minimum area necessary within the construction zone. Additional requirements may apply if special-status species are associated with riparian vegetation that would be removed as part of the proposed program.

Mitigation Measure BIO-2.3: Compensate for the Loss of Riparian Habitat

If riparian habitat is removed as part of proposed roadway improvement projects, the County shall compensate for the loss of riparian vegetation to ensure no net loss of habitat functions and values. Compensation ratios shall be based on site-specific information and determined through coordination with state and federal agencies (including DFG, USFWS, NMFS, and the Corps). Compensation shall be provided at a minimum ratio of 1 acre restored or created for every 1 acre removed. Compensation may comprise restoration/creation, off-site restoration, or mitigation credits (or a combination of these elements). The County shall develop and implement a restoration and monitoring plan for specific projects that describes how riparian habitat shall be enhanced or recreated, then monitored over a minimum period of time, as determined by the appropriate state and federal agencies.

Mitigation Measure BIO-2.4: Identify and Delineate Waters of the United States, Including Wetlands

As part of project-specific environmental review, the County shall retain a botanist to identify areas that could qualify as waters of the United States, including wetlands. Wetlands shall be identified using both the Corps and USFWS/DFG definitions of wetlands. Corps jurisdictional wetlands shall be delineated using the methods outlined in the Corps Wetlands Delineation Manual (Environmental Laboratory 1987). The jurisdictional boundary for other waters of the United States shall be identified based on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding area (33 CFR 328.3[e]).

This information shall be mapped and documented as part of subsequent CEQA and/or NEPA environmental review reports (if required), and wetland delineation reports. Mitigation Measures BIO-2.5 and BIO-2.6 shall be implemented concurrently.

Mitigation Measure BIO-2.5: Avoid or Minimize Disturbance of Waters of the United States, Including Wetland Communities

To the extent possible, the County shall avoid or minimize impacts on wetlands and other waters of the United States (creeks, steams, and rivers) by implementing the following measures.

- Each project shall be redesigned or modified to avoid significant direct and indirect impacts on wetland habitats, if feasible.
- Installing environmentally sensitive area fencing around the affected habitat as stipulated by the Monterey County Zoning Ordinance and the CVMP will protect wetland habitats that occur near a specific project site. Depending on site-specific conditions and permit requirements, this buffer may be narrower or wider than 30 feet to prevent erosion and sedimentation impacts on wetland habitats (e.g., 250 feet for seasonal wetlands that are considered special-status shrimp habitat). The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications shall contain clear language stating that construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities are prohibited within the fenced environmentally sensitive area.
- Installation activities shall be avoided in saturated or ponded wetlands during the wet season (spring and winter) to the maximum extent possible. Where such activities are unavoidable, protective practices, such as use of padding or vehicles with balloon tires, shall be used.

- Where determined necessary by resource specialists, geotextile cushions and other materials (e.g., timber pads, prefabricated equipment pads, or geotextile fabric) shall be used in saturated conditions to minimize damage to the substrate and vegetation.
- Exposed slopes and streambanks shall be stabilized immediately on completion of installation activities. Other waters of the United States shall be restored in a manner that encourages vegetation to reestablish to its pre-project condition and reduces the effects of erosion on the drainage system.
- In highly erodible stream systems, banks shall be stabilized using a nonvegetative material that binds the soil initially and breaks down within a few years. If the project engineers determine that more aggressive erosion control treatments are needed, geotextile mats, excelsior blankets, or other soil stabilization products will be used.
- During construction, trees, shrubs, debris, or soils that are inadvertently deposited below the ordinary high-water mark of drainages in a manner that minimizes disturbance of the drainage bed and bank will be removed.
- These measures shall be incorporated into contract specifications and implemented by the construction contractor. In addition, the County shall ensure that the contractor incorporates all permit conditions into construction specifications.

Mitigation Measure BIO-2.6: Compensate for the Loss of Wetland Habitat

If wetlands are permanently filled or disturbed as part of a specific project, the County shall compensate for the loss of wetland habitat to ensure no net loss of habitat functions and values. Compensation ratios shall be based on site-specific information and determined through coordination with state and federal agencies (including DFG, USFWS, and the Corps). The compensation shall be at a minimum ratio of 1 acre restored or created for every 1 acre filled. Compensation may comprise onsite restoration/creation, off-site restoration, or mitigation credits (or a combination of these elements). The County will develop and implement a project restoration and monitoring plan that describes how wetlands shall be created and monitored over a minimum period of time.

Impact BIO-3: Potential Disturbance or Loss of Special Status Plant Populations (Significant and Unavoidable)

Construction and maintenance activities associated with the proposed roadway improvements could result in the direct loss or indirect disturbance of special-status plant species that are known to occur or that could grow in the program area (Table 3.3-1). Impacts on special-status plant species could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation. This impact is considered potentially significant because

the county cannot guarantee that special-status plant species can be avoided as part of future improvements. Implementation of the following mitigation measures would reduce this impact, but possibly not to a less-than-significant level for all improvements; the degree of reduction would depend on the plant species (listed versus unlisted) and the extent of impact. Therefore, this impact is considered **significant and unavoidable**.

Mitigation Measure BIO-3.1: Document Special-Status Plant Species Populations

As part of the environmental review process for individual projects, the County shall retain a qualified botanist to document the presence or absence of special-status plant species before implementing a specific project. The following steps shall be taken to document special-status plant species for each project:

1. **Review existing information:** The botanist shall review existing information to develop a list of special-status plant species that could occur in a specific project area. Sources of information consulted shall include the CNDDB, previously prepared environmental documents, city and county general plans, and the CNPS electronic inventory.
2. **Coordinate with agencies:** The botanist shall coordinate with the appropriate agencies (DFG, USFWS) to discuss botanical resource issues and determine the appropriate level of surveys necessary to document special-status plant species.
3. **Conduct field studies:** The botanist shall evaluate existing habitat conditions for each project and determine what level of botanical survey is required. The type of botanical survey shall depend on species richness, habitat type and quality, and the probability of special-status species occurring in a particular habitat type. Depending on these factors and the proposed construction activity, one or more of the following levels of survey may be required.
4. **Habitat assessment:** A habitat assessment determines whether suitable habitat is present. This type of assessment can be conducted at any time of year. It is used to assess and characterize habitat conditions and determine whether return surveys are necessary. If no suitable habitat is present, no additional surveys shall be required.
5. **Species-focused surveys:** Species-focused surveys (or target species surveys) shall be conducted if suitable habitat is present for special-status plant species. The surveys shall focus on special-status plant species that could grow in the region. It would be conducted during a period that the target species are evident and identifiable.
6. **Floristic protocol-level surveys:** Floristic surveys that follow the CNPS botanical survey guidelines (revised from Nelson 1987; approved by the CNPS board on June 2, 2001; included in California Native Plant Society 2001) shall be conducted in areas that are

relatively undisturbed and/or have a moderate to high potential to support special-status plant species. The guidelines require that all species be identified to the level necessary to determine whether they qualify as special-status plant species, or are species with unusual or significant range extensions. The guidelines also require that field surveys be conducted when special-status plant species that could occur in the area are evident and identifiable. To account for different special-status plant identification periods, one or more series of field surveys may be required in spring and summer.

Special-status plant populations identified during the field surveys shall be mapped and documented as part of subsequent CEQA and/or NEPA environmental review reports (if required). The County shall implement **Mitigation Measure BIO-3.2** concurrently.

Mitigation Measure BIO-3.2: Avoid or Minimize Impacts on Special-Status Plant Species Populations by Redesigning the Project, Protecting Populations, and Developing a Transplantation Plan (if Necessary)

The County shall implement the following measures to avoid or minimize impacts on special-status plant species.

- A specific project will be redesigned or modified to avoid significant direct and indirect impacts on special-status plant species, if feasible.
- Special-status plant species near a specific project site will be protected by installing environmentally sensitive area fencing (orange construction barrier fencing) around special-status plant species populations as stipulated by the Monterey County Zoning Ordinance and the CVMP. Depending on site-specific conditions, this buffer may be narrower or wider than 100 feet. Where special-status plant populations are located in wetlands, silt fencing shall also be installed. The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications shall contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area.
- The County will coordinate with the appropriate resource agencies and local experts to determine whether transplantation of special-status plant species is feasible. If the agencies concur that it is a feasible mitigation measure, the botanist shall develop and implement a transplantation plan in coordination with the appropriate agencies. The transplantation plan shall involve identifying a suitable transplant site, moving the plant material and seed bank to the transplant site, collecting seed material and propagating it in a nursery, and monitoring the transplant sites to document recruitment and survival rates.

Impact BIO-4: Potential Disturbance or Loss of Common Vegetation Habitats (Less than Significant)

There are several common vegetation habitats within the program area that may be disturbed or lost as a result of implementing the proposed roadway improvements. These include agricultural lands, annual grassland, barren lands, blue oak-foothill pine woodlands, coastal oak woodland, mixed chaparral, coastal scrub, montane hardwood, and urban habitats. The loss of these common habitats is considered less than significant because this habitat type is not a sensitive natural community, and because similar habitat of equivalent or greater value is abundant in the region. Furthermore, loss of these common habitats is not expected to contribute to the destruction or deterioration of an individual, population, or habitat for special-status species. Therefore, this impact is considered **less-than-significant**. No mitigation is required.

Impact BIO-5: Potential Loss of Protected Trees (Less than Significant with Mitigation)

Construction activities associated with the proposed roadway improvements could result in the disturbance or loss of individual protected trees, defined in the Monterey County ordinance as oak, madrone or redwood trees six inches or more in diameter two feet above ground level. Protected trees could be removed or affected during staging, trimming for equipment access, and other construction-related activities. The loss of trees could conflict with the County tree ordinance. This impact is considered potentially significant. Implementation of **Mitigation Measure BIO-5.1** would reduce this impact to a **less-than-significant** level.

Mitigation Measure BIO-5.1: Redesign Specific Projects or Compensate for Removal of Protected Trees

Measures will be taken to avoid impacts to protected trees, as detailed in the County tree ordinance. If a specific project cannot be redesigned to avoid impacting the protected trees, then appropriate compensation will occur. Tree replacement ratios shall be determined in consultation with the County. Any trees planted as remediation for failed plantings shall be planted as stipulated by the replacement ratios for original plantings, and shall be monitored for a period of five years following installation. Tree replacement shall occur after project construction.

Impact BIO-6: Potential Introduction or Spread of Noxious Weeds (Less than Significant with Mitigation)

Construction activities associated with the proposed roadway improvements could introduce noxious weeds or result in their spread into currently uninfested areas, possibly resulting in the displacement of special-status plant species and degradation of habitat for special-status wildlife species. Plants or seeds may be dispersed via construction equipment if appropriate measures are not implemented. This impact is considered potentially significant because the

introduction or spread of noxious weeds could result in a substantial reduction or elimination of species diversity or abundance. Implementation of **Mitigation Measures BIO-6.1 and BIO-6.2** would reduce this impact to a **less-than-significant** level.

Mitigation Measure BIO-6.1: Conduct a Noxious Weed Survey and Document Noxious Weed Infestation

As part of project-specific environmental review, the County shall retain a qualified botanist to address noxious weed impacts. The botanist shall determine whether noxious weeds are an issue for the project and whether they could displace native plants and natural habitats, affect the quality of forage on rangeland, or affect cropland productivity. If the botanist determines that noxious weeds are an issue, the County shall review the county agricultural commission's noxious weed list, CDFA's lists of noxious weeds, and the California Exotic Pest Plant Council's list of pest plants of ecological concern. These lists shall be used to identify weeds that will be targeted during field surveys by the botanist. Surveys shall focus on target weed species that are considered locally important for documentation and control purposes.

If noxious weed infestations are located during the field surveys, they shall be mapped and documented as part of subsequent CEQA and/or NEPA reviews (if required). The County shall implement **Mitigation Measure BIO-6.2** concurrently.

Mitigation Measure BIO-6.2: Avoid or Minimize the Dispersal of Noxious Weeds Into Uninfested Areas

To avoid or minimize the introduction or spread of noxious weeds into uninfested areas, the County shall incorporate the following measures into roadway improvement plans and specifications.

- Certified, weed-free, imported erosion-control materials (or rice straw in upland areas) will be used.
- The County will coordinate with the county agricultural commissioner and land management agencies to ensure that the appropriate BMPs are implemented.
- Construction supervisors and managers will be educated about noxious weed identification and the importance of controlling and preventing their spread.
- Equipment will be cleaned at designated wash stations after leaving noxious weed infestation areas.

B. Impacts on Wildlife

Impact BIO-7: Potential Disturbance or Loss of Special Status Wildlife Species and Their Habitats (Significant and Unavoidable)

Construction and maintenance activities associated with the proposed roadway improvements could result in the direct loss or indirect disturbance of special-status wildlife species or their habitats that are known to occur, or have potential to occur, in the program area (Table 3.3-2). Impacts on special-status wildlife species or their habitat could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation. Significant impacts on special-status wildlife species associated with the proposed roadway improvements include, but are not limited to:

- direct mortality from the collapse of underground burrows, resulting from soil compaction;
- direct mortality resulting from the movement of equipment and vehicles through the program area;
- increased mortality resulting from higher numbers of automobiles on new or widened roads in migration corridors or important habitat areas;
- loss of breeding, foraging, and refuge habitat resulting from the permanent removal of woodland/forest habitat;
- loss of breeding and foraging habitat resulting from the filling of water/aquatic habitats;
- loss of breeding, foraging, and refuge habitat resulting from the permanent removal of riparian vegetation;
- loss of suitable habitat for vernal pool invertebrates resulting from the destruction or degradation of vernal pools or seasonal wetlands;
- direct mortality or loss of suitable habitat resulting from the trimming or removal of obligate host plants or nest trees;
- abandoned eggs or young and subsequent nest failure for special-status nesting birds, including raptors, resulting from construction-related disturbance;
- loss of suitable foraging habitat for special-status raptor species; and
- loss of migration corridors resulting from the construction of permanent building structures or features.

This impact is considered potentially significant because the County cannot guarantee that special-status wildlife species can be avoided. Implementation of the following mitigation measures would reduce this impact, but not necessarily to a less-than-significant level for all projects; the degree of reduction would

depend on the wildlife species (listed versus unlisted) and the extent of impact. Therefore, this impact is considered **significant and unavoidable**.

Mitigation Measure BIO-7.1: Document Special-Status Wildlife Species and Their Habitats

As part of project-specific environmental review, the County shall retain a qualified wildlife biologist to document the presence or absence of suitable habitat for special-status wildlife species in the specific project area. The following steps shall be implemented to document special-status wildlife species and their habitats for each project.

1. **Review existing information:** The wildlife biologist shall review existing information to develop a list of special-status wildlife species that could occur in the project area. Sources of information would include the USFWS special-status species list and designated critical habitat for the Carmel Valley region, the CNDDB, previously prepared environmental documents, city and county general plans, applicable HCPs and Natural Community Conservation Plans (NCCPs), and USFWS-issued biological opinions and programmatic agreements for previous projects.
2. **Coordinate with state and federal agencies:** The wildlife biologist shall coordinate with the appropriate agencies (including DFG, USFWS, and Caltrans) to discuss wildlife resource issues in the Carmel Valley region and determine the appropriate level of surveys necessary to document special-status wildlife species and their habitats.
3. **Conduct field studies:** The wildlife biologist shall evaluate existing habitat conditions and determine what level of biological survey is required. The type of survey required shall depend on species richness, habitat type and quality, and the probability of special-status species occurring in a particular habitat type. Depending on the existing conditions in the project area and the proposed construction activity, one or more the following levels of survey may be required:
   - **Habitat assessment:** A habitat assessment determines whether suitable habitat is present. This type of assessment can be conducted at any time of year. It is used to assess and characterize habitat conditions and to determine whether return surveys are necessary. If no suitable habitat is present, no additional surveys shall be required.
   - **Species-focused surveys:** Species-focused surveys (or target species surveys) shall be conducted if suitable habitat is present for special-status wildlife species and if it is necessary to determine whether the species is present in the project area. The surveys shall focus on special-status wildlife species that have the potential to occur in the region. The surveys shall be conducted during a period when the target species are present or active.

- **Protocol-level wildlife surveys:** The County shall comply with protocols and guidelines issued by responsible agencies for certain special-status species. USFWS and DFG have issued survey protocols and guidelines for several special-status wildlife species that could occur in the Carmel Valley region, including vernal pool branchiopods, California red-legged frog, California tiger salamander, western burrowing owl, and marbled murrelet. The protocols and guidelines may require that surveys be conducted during a particular time of year and/or time of day when the species is present and active. Many survey protocols require that only biologists that have experience with the particular species may conduct the surveys and some require the biologist to have a valid 10(a)(1)(A) recovery permit to conduct surveys. The County shall coordinate with the appropriate state or federal agency biologist before initiating protocol-level surveys to ensure that the surveys are necessary and the results will be accepted. Because some species can be difficult to detect or observe, multiple field techniques may be used during a survey period, and multiple surveys may be required in subsequent seasons or years, as outlined in the protocol or guidelines for each species.

  Special-status wildlife or suitable habitat identified during the field surveys shall be mapped and documented as part of subsequent CEQA and/or NEPA environmental review reports (if required). The County shall implement a combination of the following mitigation measures to avoid or minimize significant impacts on special-status wildlife species.

Mitigation Measure BIO-7.2: Avoid or Minimize Impacts on Special-Status Wildlife Species by Redesigning Specific Projects, Protecting Special-Status Wildlife Habitat, and Developing a Mitigation Monitoring Plan (if Necessary)

This mitigation measure focuses on avoiding or minimizing all direct and indirect impacts on special-status wildlife species and their habitats. The County shall implement the following measures.

- Specific projects will be redesigned or modified to avoid significant direct and indirect impacts on special-status wildlife species or their habitats, if feasible.
- Special-status wildlife species and their habitat near the specific project site will be protected by installing environmentally sensitive area fencing around habitat features, such as seasonal wetlands, burrows, and nest trees. The environmentally sensitive area fencing or staking shall be installed at a minimum distance from the edge of the resource as determined through coordination with state and federal agency biologists (DFG and USFWS). The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications

shall contain clear language stating that construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities are prohibited within the fenced environmentally sensitive area.

- Construction-related activities will be restricted to the nonbreeding seasons of special-status wildlife species that could occur in the project area where feasible. Timing restrictions may vary depending on the species and could occur during any time of the year.
- The County will coordinate with the appropriate resource agencies to determine whether a monitoring plan for special-status wildlife species is necessary as part of all proposed roadway improvement projects. If a monitoring plan is required, it shall be developed and implemented in coordination with appropriate agencies and shall include:
  - a description of each of the wildlife species and of suitable habitat for species that could occur at the specific project site,
  - the locations of known occurrences of special-status wildlife species within the specific project site,
  - the location and size of no-disturbance zones in and adjacent to environmentally sensitive areas for wildlife,
  - directions on handling and relocating special-status wildlife species found on the specific project site that are in immediate danger of being destroyed, and
  - notification and reporting requirements for special-status species that are identified on the specific project site.

Mitigation Measure BIO-7.3: Coordinate with Resource Agencies and Develop Appropriate Compensation Plans for State- and Federally Listed Wildlife Species

If construction activities would result in significant impacts on federal- or state-listed wildlife species after the implementation of the above mitigation measure, either a compensation plan shall be developed in coordination with the appropriate resource agency, or agency-approved compensation guidelines shall be followed to reduce the impact to a less-than-significant level. Compensation guidelines have been identified for several special-status wildlife species, including vernal pool branchiopods and western burrowing owl. The amount of compensation shall vary depending on the type of habitat loss (e.g., aquatic habitat vs. upland habitat), if the loss is permanent or temporary, and the amount and quality of habitat loss, or degree of habitat disturbance anticipated. The compensation plan shall be developed and implemented in coordination with the appropriate state or federal agency and may involve one or more of the following: identifying an agency-approved mitigation bank or other compensation site (on- or off-site); transplanting obligate host plants, recreating (burrows and vernal pools), and/or preserving habitat for special-status wildlife species; monitoring the

compensation site; and funding the management of the compensation site.

- Mitigation Measure BIO-2.2: Avoid or Minimize Disturbance of Riparian Habitats
- Mitigation Measure BIO-2.5: Avoid or Minimize Disturbance of Waters of the United States, Including Wetland Communities

Impact BIO-8: Potential Disturbance and Loss of Common Wildlife Species and Wildlife Migration (Less than Significant)

Construction activities associated with the proposed roadway improvements could temporarily disturb habitat for many common wildlife species within the program area. Also, some habitat for common wildlife species would be removed because of increasing paved surfaces within the program area, but the amount would be small relative to the amount of habitat available to these common species in the Carmel Valley region. In addition to habitat loss, many species would move away from project sites to nearby habitat areas. Inevitably, some individuals would be lost as a result of construction activities. However, this loss of individual animals would not result in a significant impact on common wildlife species because it would not lead to a substantial reduction or elimination of species diversity or abundance in the Carmel Valley region. Loss or disturbance of habitats could also disrupt migration of common wildlife species. However, as discussed above, the amount of disturbed areas would be small relative to the amount of habitat available to common wildlife species in the region, and the proposed roadway improvements do not comprise major highways or interchanges that could contribute to substantial new impediments to wildlife movement in the Carmel Valley region. This impact is considered **less-than-significant**. No mitigation is required.

Impact BIO-9: Potential Loss or Disturbance of Nesting Migratory Birds and Raptors (Less than Significant with Mitigation)

Woodland, forest, scrub, grassland, aquatic and riparian habitats in and adjacent to the program area provide suitable nesting habitat for special-status birds including white-tailed kite, bald eagle, sharp-shinned hawk, Cooper's hawk, marbled murrelet, western burrowing owl, black swift, purple martin, yellow warbler, and tricolored blackbird. These habitats also provide suitable nesting habitat for non-special-status migratory birds, including red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*B. jamaicensis*), Nuttall's woodpecker (*Picoides nuttallii)*, black phoebe (*Sayornis nigricans*), California thrasher (*Toxostoma redivivum*), spotted towhee (*Pipilo maculatus*), wrentit (*Chamaea fasciata*), Anna's hummingbird (*Calypte anna*) and red-winged black bird

(*Agelaius phoeniceus*). The loss or disturbance of these habitats is considered potentially significant to nesting migratory birds and raptors.

If construction occurs within the program area during the breeding season (generally between March 1 and August 30), such activities (e.g., vegetation removal, grading, noise, etc.) could result in nest abandonment and subsequent loss of eggs or developing young at active nests located in or near the program area. This impact is considered potentially significant if the subsequent population declines affected the viability of the local population. Disturbance that results in nest abandonment and death of young or loss of reproductive potential at active nests would also violate California Fish and Game Code Sections 3503 (active bird nests) and the MBTA.

Implementation of the **Mitigation Measure BIO-9.1** would reduce these impacts to a **less-than-significant level** and avoid violating the MBTA and California Fish and Game Code.

Mitigation Measure BIO-9.1: Remove Vegetation During the Nonbreeding Season and Avoid Disturbance of Nesting Migratory Birds, Including Raptors, as Appropriate

Clearing and grading a future roadway improvement site for construction may result in the removal of trees and shrubs that provide suitable nesting habitat for migratory birds. The County will ensure that construction contractors will remove trees and shrubs only during the nonbreeding season for migratory birds (generally September 1 to February 28). Where nesting migratory birds are determined to be present, removal of woody vegetation during the nonbreeding season will ensure that active nests will not be destroyed by removal of trees supporting or adjacent to active nests. In addition, removal of vegetation or filling of ponds or wetlands in a specific roadway improvement area should also take place during the nonbreeding season to avoid impacts to nesting birds in these areas, where feasible. Migratory birds and raptors in and adjacent to the specific project area may be disturbed by noise and activity associated with construction. To minimize these impacts, one of the following options will be implemented:

- If construction activities are scheduled to occur during the breeding season (generally between March 1 and August 30), a qualified wildlife biologist shall be retained by the County to conduct focused nesting surveys in and adjacent to the specific project area. The surveys should be conducted within 1 week prior to initiation of construction activities and at any time between March 1 and August 30. If no active nests are detected during surveys, then no additional mitigation is required. If surveys indicate that migratory bird or raptor nests are found in any areas that would be directly affected by construction activities, a no-disturbance buffer shall be established around the site to avoid disturbance of the nest site until after the breeding season or after a wildlife biologist determines that the young have fledged (usually late-June to mid-July). The extent of these buffers shall be determined by a wildlife biologist and shall

depend on the level of noise or construction disturbance, line of site between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. These factors should be analyzed in order to make an appropriate decision on buffer distances.

- If construction activities begin prior to the breeding season (i.e., if construction activity begins between September 1 and February 28), then construction can proceed until it is determined that an active migratory bird or raptor nest is subject to abandonment as a result of construction activities. Construction activities should be in full force, including at a minimum, grading of the site and development of infrastructure. A minor activity that initiates construction but does not involve the full force of construction activities shall not qualify as "pre-existing construction." If any birds or raptors nest in the vicinity of the project under this pre-existing construction condition, then it is assumed that they are or will habituate to the construction activities. Under this scenario, a nesting bird survey should still be conducted on or after March 1 to identify any active nests in the vicinity, and active sites should be monitored by a wildlife biologist periodically until after the breeding season or after the young have fledged (usually late-June to mid-July). If active nests are identified on or immediately adjacent to the project site, then all non-essential construction activities (e.g., equipment storage, meetings, etc) should be avoided in the immediate vicinity of the nest site; however, construction activities can proceed.

Implementing the following mitigation measures would also reduce potentially significant impacts related to the loss or disturbance of habitat supporting nesting migratory birds to a **less-than-significant** level.

- Mitigation Measure BIO-1.1: Conduct Focused Biological Surveys of Woodland and Forest Habitats
- Mitigation Measure BIO-1.2: Avoid Impacts on Sensitive Woodland and/or Forest Habitats
- Mitigation Measure BIO-1.3: Conserve Sensitive Woodland and/or Forest Habitats to Mitigate for Loss of a Potentially Native Stand
- Mitigation Measure BIO-2.2: Avoid or Minimize Disturbance of Riparian Habitats
- Mitigation Measure BIO-5.1: Redesign Specific Projects or Compensate for Removal of Protected Trees
- Mitigation Measure BIO-7.2: Avoid or Minimize Impacts on Special-Status Wildlife Species by Redesigning Specific Projects, Protecting Special-Status Wildlife Habitat, and Developing a Mitigation Monitoring Plan (if Necessary).

C. Impacts to Fisheries

Impact BIO-10: Temporary and Permanent Impacts to Steelhead Trout and other Carmel River Fish (Less than Significant with Mitigation)

Proposed roadway improvements could adversely affect special-status fish species. Impacts on aquatic systems could result from an increase in sediment and/or contaminant input, diversion of water flow, and removal of riparian vegetation as a result introduction of new impervious surfaces. Construction activities adjacent to waterways could disturb soils and cause sediment to be transported into and through the channel, which would result in temporary increases in turbidity and sedimentation downstream of construction sites. Periods of localized, high suspended sediment concentrations and turbidity owing to channel disturbance can result in a reduction of feeding opportunities for sight-feeding fish and clogging and abrasion of gill filaments. Increased sediment loading can degrade food-producing habitat downstream of specific project areas. Finally, sediment can interfere with photosynthesis of aquatic flora and result in the displacement of aquatic fauna.

Fuel and concrete could spill into the waterway during construction. Various contaminants, such as fuel oils, grease, and other petroleum products used in construction activities, could be introduced into the system either directly or through surface runoff. Contaminants may be lethal or sublethally toxic to fish and other aquatic organisms, or may change the rate at which oxygen is diffused; as a result, they may reduce the survival and growth rates of aquatic species.

In-water construction often requires the alteration of stream flow, either through a culvert of a constructed channel or through part of the original channel. This can result in increased water velocities surrounding the project site. Water velocities that are too high can prevent or substantially reduce fish movement.

Removal of riparian vegetation could weaken the streambank by loosening the soil, thus increasing the bank's susceptibility to erosion. Alteration of fish habitat would occur if the channel bed and banks were disturbed (e.g., if riprap were placed there) or if sites that have been disturbed mechanically were further disturbed by high-flow events before they are stabilized. Riparian vegetation provides cover for juvenile rearing, shade to reduce temperatures, and food input (i.e., terrestrial invertebrates), and is considered a very valuable component of fish habitat. The removal of woody riparian vegetation may affect fish directly by removing habitat. Fish use complex woody debris structure to avoid predators and conceal themselves from prey. Woody debris in the waterway reduces water velocity, providing resting habitat as well.

Because roadway improvement activities could result in avoidance by fish of biologically important habitat for substantial periods, this impact is considered potentially significant. Fish avoidance of important habitat may increase mortality, reduce reproductive success, or substantially reduce local population

size. Implementation of **Mitigation Measure BIO-10.1 and BIO-10.2** would reduce this impact to a **less-than-significant** level.

Mitigation Measure BIO-10.1: Assess and Document Habitat for Special-Status Fish Species

As part of project-specific environmental review, the County shall retain a qualified fisheries biologist to locate and identify streams that could support special-status fish habitat, including Steelhead trout and other Carmel River fish species. Habitat shall be mapped and documented as part of the subsequent CEQA and/or NEPA environmental review and biological assessment reports (if required) that are prepared for specific projects. The County shall implement **Mitigation Measure BIO-10.2** concurrently.

Mitigation Measure BIO-10.2: Avoid or Minimize Impacts on Special-Status Fish Species and Their Habitat

The County shall implement the following measures to avoid or minimize impacts on special-status fish and their habitats.

- For each project, a SWPPP will be developed and implemented that includes BMPs to minimize the potential for impacts on special-status fish and their habitat. The SWPPP shall include measures to control the transport of sediment to streams, promote the restoration of construction areas to preconstruction conditions, and avoid the potential for spills of hazardous substances. The SWPPP shall include pollution prevention measures (erosion and sediment control measures and measures to control nonstormwater discharges and hazardous spills), demonstration of compliance with all applicable local and regional erosion and sediment control standards, identification of responsible parties, a detailed construction timeline, and a BMP monitoring and maintenance schedule. A staging and storage area shall be provided away from the waterway for equipment, construction materials, fuels, lubricants, solvents, and other possible contaminants. The contractor shall conduct periodic maintenance of erosion and sediment control measures. Soil exposure shall be minimized through the use of BMPs, ground cover, and stabilization practices. Exposed dust-producing surfaces shall be sprinkled daily until wet while avoiding the production of runoff. Paved streets shall be swept daily after construction activities.
- Each project will be constructed during periods that avoid the sensitive life stages of special-status fish species. Construction activities shall be scheduled so that they do not interfere with the reproductive cycles of fish species. Work in most of the systems shall take place between June 1 and October 15. Construction in this time frame would avoid causing impacts on the majority of the adult and juvenile migration stages of the Steelhead trout and other Carmel River fish species.

- Design all stream crossings to facilitate fish passage in accordance with CDFG and NMFS guidance and consultation.

Implementing the following mitigation measures would also reduce potentially significant impacts related to the loss or disturbance of habitat supporting Steelhead trout and other Carmel River fish species to a less-than-significant level.

- Mitigation Measure BIO-2.2: Avoid or Minimize Disturbance of Riparian Habitats.
- Mitigation Measure BIO-2.5: Avoid or Minimize Disturbance of Waters of the United States, Including Wetland Communities.

D. Other Impacts

Impact BIO-11: Conflicts with Local Policies or Ordinances that Protect Biological Resources (Less than Significant with Mitigation)

Construction activities associated with the proposed roadway improvements could result in conflicts with local policies or ordinances that protect locally significant biological resources, including heritage or native trees. (See also discussion under Impact BIO-5, above). This impact is considered significant. Implementation of **Mitigation Measure BIO-11.1** would reduce this impact to a **less-than-significant** level.

Mitigation Measure BIO-11.1: Review Local County Policies, Ordinances, and Conservation Plans, and Comply with Requirements

As part of project-specific environmental review, the County shall ensure that projects comply with general plans, policies, ordinances, and conservation plans (including HCPs; NCCPs; and other local, regional, and state plans). Review of these documents and compliance with their requirements shall be demonstrated in project-specific environmental documentation. The County shall ensure that roadway improvements comply with all policies, ordinances, and plans that exist at the time of project-specific review, regardless of whether they existed during the program-level analysis.

Section 3.4
Aesthetics

Introduction

Aesthetics deals with the nature, creation, and appreciation of beauty. Evaluation of aesthetic resources in the landscape requires a process that objectively identifies the visual features (resources) of the landscape, assesses the character and quality of those resources relative to overall regional visual character, and identifies the importance to people (sensitivity) of views of visual resources in the landscape. By establishing these existing (baseline) conditions, a proposed project or another change to the landscape can be systematically evaluated for its degree of impact. The degree of impact depends on the magnitude of change in the visual resource (i.e., in visual character and quality) and on viewers' responses to and concern for those changes. This basic method of evaluating visual impacts follows established federal procedures (Smardon et al. 1986) and is suitable for evaluating nonfederal projects and areas.

Methodology

Identification of a project area's existing visual resources and conditions involves three steps.

- Objective identification of the visual features (visual resources) of the landscape.
- Assessment of the character and quality of those resources relative to overall regional visual character.
- Determination of the importance to people, or sensitivity, of views of visual resources in the landscape.

The aesthetic value of an area is a measure of its visual character and quality combined with the viewer response to the area (Federal Highway Administration 1983). The scenic quality component can best be described as the overall impression that an individual viewer retains after driving though, walking though, or flying over an area (U.S. Bureau of Land Management 1980). Viewer response is a combination of viewer exposure and sensitivity. Viewer exposure is a function of the number of viewers, the number of views seen, the distance of

the viewers, and the viewing duration. Viewer sensitivity relates to the extent of the public's concern for particular viewsheds. These terms and criteria are described in detail below.

Visual Character

Both natural and artificial landscape features make up the character of a view. Visual character is influenced by geologic, hydrologic, botanical, wildlife, recreational, and urban features. Urban features include those associated with development and landscape alteration, such as roads, utilities, structures, earthworks, and the results of other human activities. The perception of visual character can vary significantly seasonally and even hourly, as weather, light, shadow, and the elements that compose the viewshed change. Form, line, color, and texture are the basic components used to describe visual character and quality for most visual assessments (U.S. Forest Service 1974, Federal Highway Administration 1983). The appearance of the landscape is described in terms of the dominance of each of these components.

Viewer Response: Exposure and Sensitivity

Viewer response is the psychological reaction of a person to visible changes in the viewshed, and is based on the sensitivity and exposure of the viewer to a given viewshed. Sensitivity relates to the magnitude of the viewer's concern for a viewshed. Exposure is a function of the number of viewers, the type of view seen, and the distance, perspective, and duration of the view.

The measure of the quality of a view must be tempered by the overall sensitivity of the viewer. Viewer sensitivity is based on the visibility of resources in the landscape, the proximity of viewers to the visual resource, the elevation of viewers relative to the visual resource, the frequency and duration of viewing, the number of viewers, and the type and expectations of individuals and viewer groups.

The importance of a view to viewers is related in part to the position of viewers relative to the resource; therefore, visibility and visual dominance of landscape elements are usually described with respect to their placement in the viewshed. Visual sensitivity also depends on the number and type of viewers, the frequency of viewing (e.g., daily or seasonally), and the duration of viewing. Viewer activity, awareness, and visual expectations in relation to the number of viewers and viewing duration also influence visual sensitivity. For example, visual sensitivity is higher for views seen by people who are driving for pleasure; people engaging in recreational activities such as hiking, biking, or camping; and homeowners. Sensitivity tends to be lower for views seen by people driving to and from work or as part of their work (U.S. Forest Service 1974; Federal Highway Administration 1983; Soil Conservation Service 1978).

Commuters and non-recreational travelers have generally fleeting views and tend to focus on commute traffic, not on surrounding scenery; therefore, they are generally considered to have low visual sensitivity. Residential viewers typically have extended viewing periods and are concerned about changes in the views from their homes; therefore, they generally are considered to have high visual sensitivity. Viewers using recreation trails and areas, scenic highways, and scenic overlooks are usually assessed as having high visual sensitivity.

Judgments of visual quality and viewer response must be made based in a regional frame of reference (Soil Conservation Service 1978). The same type of visual resource in different geographic areas could have a different degree of visual quality and sensitivity in each setting. For example, a small hill may be a significant visual element in a flat landscape but have very little significance in mountainous terrain.

Environmental Setting

The program area encompasses the Carmel Valley, which features a mixture of agricultural land, undeveloped native habitat, and small areas of development within a topographically varied valley setting. According to the CVMP, "The Carmel Valley is a scenic area. Major views are seen primarily from the Carmel Valley Road and Laureles Grade corridors. Many homes have views of one side of the Valley or the other, with the quality of the view being determined principally by the interrelationship between natural landforms and vegetative masses. While large areas of the Valley qualify as high-quality natural visual settings, many areas have been adversely affected by poorly sited or unscreened development."

Carmel Valley consists of a relatively flat valley bottom bounded to the north and south by the Coast Range Mountains, and drained by the Carmel River. Land on both sides of the valley is comprised of open space and preserved areas, including Santa Lucia Preserve, Palo Corona Ranch Regional Park, Thomas Open Space, Garland Ranch Regional Park, Jacks Peak County Park, and Hatton Canyon State Park. As these areas remain largely undeveloped, the viewshed adjacent to Carmel Valley Road and Laureles Grade tend to support a rich mosaic of oak forests, chaparral scrublands, grasslands, and riparian habitats in the foreground and middle ground, and are generally characterized by rolling hills and broad northwest-southeast trending valleys also in the middleground. Areas of steep, rugged mountainous terrain are also found within the valley, primarily in the background.

Overall, the developed landscapes of the region are comprised of rural residential development, various commercial uses that support the Valley's residents and visitors, and small-scale agricultural pursuits. The valley is also home to three golf courses lining the southern banks of the Carmel River and visible in the middle and backgrounds from the Carmel Valley Road corridor. Carmel Valley has traditionally been divided into three areas: the Lower Valley area, near Highway 1; Mid-Valley area, in the vicinity of Robinson Canyon Road; and

Upper Valley area, in the vicinity of Carmel Valley Village. Higher residential densities have tended to occur in the Upper Valley, while lower density developments have occurred elsewhere, often near golf courses and commercial centers in the Lower- and Mid-Valley areas. Recreational land uses, including several golf and tennis facilities, occur throughout the valley at a variety of locations.

Several scenic routes link the Carmel Valley with other areas of the County. Carmel Valley Road, a County scenic route and the principal arterial through the valley, extends from SR 1 to US 101, connecting to Salinas Valley in the east. Laureles Grade, a County scenic roadway, connects Carmel Valley Road with SR 68, which ultimately extends east to US 101 in Salinas and west to SR 1 in Monterey. SR 1, which traverses the lower end of Carmel Valley, provides a major coastal thoroughfare from Big Sur to Monterey. Portions of this route have been designated as a State Scenic Highway, including the portion in Monterey County that extends from the Carmel River north to SR 68.

Regulatory Setting

Federal Policies and Regulations

Scenic resources are primarily regulated on the state and local level. Relevant federal agencies may require analysis of aesthetic impacts as part of a subsequent project-specific environmental review pursuant to the National Environmental Policy Act. However, there are no specific federal regulations that apply to the aesthetic resources associated with the proposed program.

State Policies and Regulations

California Department of Transportation

State Scenic Highway Program

California's Scenic Highway Program was created by the Legislature in 1963 to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. The Caltrans considers the aesthetic setting adjacent to roadways within the state and then lists them as "eligible" for scenic highway designation. Local jurisdictions may then apply for such designation by preparing and submitting to Caltrans a scenic corridor protection program and gaining the agency's approval. Roads and highways that are eligible for designation and officially designated as scenic highways are identified in Section 263 of the California Streets and Highways Code.

Portions of State Route 1, State Route 68, and State Route 156 within Monterey County are either eligible or officially designated as State Scenic Highways, although the majority of these segments are outside of the program area. One segment of State Route 1 that borders the Carmel Valley Planning Area is officially designated as a State Scenic Highway. The entirety of Laureles Grade, which runs north-south through the Carmel Valley Planning Area connecting State Route 68 with Carmel Valley Road, is designated by Caltrans as a "County scenic highway," meaning that the program applies to the roadway although it is not under state jurisdiction. Although not officially designated by Caltrans as a county scenic highway, Carmel Valley Road is a designated scenic route within the CVMP.

As part of the State Scenic Highway Program, a designated roadway's scenic corridor (the area of land generally adjacent to and visible from the highway) is subject to protection through regulation of nearby land use, site planning, advertising, earthmoving, landscaping, and the design and appearance of structures and equipment, pursuant to its scenic corridor protection program. Caltrans and Monterey County officials review projects proposed along the corridor, including those within the program area, for conformance to and consistency with the corridor protection program. Examples of visual intrusions that would degrade the quality of scenic corridors include installation of highly reflective surfaces, extensive cut and fill, hillside scarring, large slope failures, exposed and unvegetated earth, and dominance of exotic vegetation (California Department of Transportation 1996).

Local Policies and Regulations

Overview

This section presents visual resource and aesthetics policies that could affect or be affected by the proposed traffic improvements. Policies may either support or conflict with proposed improvements. The policies listed below were excerpted from the Monterey County General Plan and the CVMP.

Monterey County General Plan

The County's General Plan, which was first adopted by the Board of Supervisors in 1982, addresses all aspects of future growth, development, and conservation throughout the unincorporated areas of Monterey County. The current General Plan contains visual resource policies intended to preserve the County's scenic and rural character. These include:

Policy 26.1.6. Development which preserves and enhances the County's scenic qualities shall be encouraged.

Policy 26.1.20. All exterior lighting shall be unobtrusive and constructed or located so that only the intended area is illuminated, long range visibility is reduced, and offsite glare is fully controlled.

Policy 40.2.1. Additional sensitive treatment provisions shall be employed within the scenic corridor, including placement of utilities underground, where feasible; architectural and landscape controls; outdoor advertising restrictions; encouragement of area native plants, especially on public lands and dedicated open spaces; and cooperative landscape programs with adjoining public and private open space lands.

Policy 40.2.2. Land use controls shall be applied or retained to protect the scenic corridor and to encourage sensitive selection of sites and open space preservation. Where land is designated for development at a density which, should maximum permissible development occur, would diminish scenic quality, the landowner shall be encouraged to voluntarily dedicate a scenic easement to protect the scenic corridor.

Greater Monterey Peninsula Area Plan

The Greater Monterey Peninsula Area Plan (GMPAP) is one of eight non-coastal areas of the County for which "Area Plans" are required. The GMPAP is more specific than the General Plan, as its policies are more precisely adapted to its area of focus than are the more general policies of the General Plan. Figure 10 of the GMPAP depicts areas of visual sensitivity in northwestern Monterey County, from the Big Sur Coast and Cachagua planning areas in the south to the Greater Salinas planning area in the north. Portions of the program area are in a visually sensitive area of the GMPAP. Specific policies regarding visual sensitivity include:

Policy 1.1.3. The County shall take comprehensive measures to ensure protection of sensitive scenic areas as shown on the Greater Monterey Peninsula Visual Sensitivity Map. Implementing policies are located in the transportation section of this plan.

Policy 40.2.6. Areas shown as "highly sensitive" on the Greater Monterey Peninsula Visual Sensitivity Map should be preserved as open space to the maximum extent possible through scenic easements or, if necessary, fee acquisition.

Policy 40.2.7. New development should not be sited on those portions of property which have been mapped as "highly sensitive." Where exceptions are appropriate to maximize the goals, objectives and policies of this plan, development shall be sited in a manner which minimizes visible effects of proposed structures and roads to the greatest extent possible and shall utilize landscape screening and other techniques to achieve maximum protection of the visual resource.

Policy 40.2.9. New development to be located in areas mapped as "sensitive" or "highly sensitive" and which will be visible from the scenic route shall

maintain the visual character of the area.1 In order to adequately mitigate the visual impacts of development in such areas, the following shall be required:

- Development shall be rendered compatible with the visual character of the area using appropriate siting, design, materials, and landscaping;
- Development shall maintain no less than a 100' setback from the scenic route right-of-way;
- The impact of any earth movement associated with the development shall be mitigated in such a manner that permanent scarring is not created;
- Tree removal shall be minimized;
- Landscape screening and restoration shall consist of plant and tree species consistent with surrounding native vegetation;
- Architectural review of projects shall be required to ensure visual compatibility of the development with the surrounding area; and
- New development in open grassland areas shown as "sensitive" or "highly sensitive" on the Visual Sensitivity Map should minimize its impact on the uninterrupted viewshed.

Carmel Valley Master Plan

The CVMP was enacted as part of the County General Plan and is intended to guide future land use within the CVMP area boundary. Specifically the plan area boundary is defined as "the primary watershed of the Carmel River from SR 1 to just east of Carmel Valley Village, except for the upper reaches of Garzas Creek and Robinson Canyon." (Monterey County 1996.) Visual policies in the CVMP support the County's overall goal of preserving the "rural residential" character of the valley. They include the following:

Policy 26.1.21. It is intended that Carmel Valley remain rural residential in character.

Policy 26.1.24. Every attempt should be made to minimize hillside scarring by avoiding cuts and fills where possible and where cuts and fills are unavoidable, by creating slopes that shall be revegetated. Permanent non-revegetated scarring of hillsides is strongly discouraged and should occur only if no other reasonable alternative is available.

Policy 26.1.25. The visible alteration of natural landforms caused by cutting, filling, grading, or vegetation removal shall be minimized through sensitive setting and design of all improvements and maximum possible restoration including botanically appropriate landscaping.

[1] As shown in Figure 10, Visual Sensitivity, of the Greater Monterey Peninsula Area Plan, areas identified as "highly sensitive" possess those scenic resources which are most unique and which have regional or countywide significance. Areas identified as "sensitive" possess scenic resources which have local or community significance.

Policy 26.1.26. Development either shall be visually compatible with the character of the valley and immediate surrounding areas or shall enhance the quality of areas that have been degraded by existing development.

Policy 26.1.28. Structures located in open grassland areas where they would be highly visible from Carmel Valley Road and Laureles Grade shall be minimized in number and clustered near existing natural or man-made vertical features.

Criteria for Determining Significance

In accordance with State CEQA Guidelines, applicable federal and state regulations, and local plans and policies, the proposed program would be considered to result in a significant impact if it would:

A. Visual Character and Quality

Substantially degrade the existing visual character or quality of the corridor and/or its surrounding area.

B. Scenic Vistas and Corridors

Have substantial adverse effects on a scenic vista, public viewing area, or view corridor, including obstructing or obscuring public views or visually prominent areas;

Result in removal of or damage to scenic resources, including but not limited to trees, rock outcrops, historic buildings, or natural landforms such as waterways along a state scenic highway or County-designated scenic roadway; or

Result in visible alteration of sensitive natural landforms caused by cutting, filling, grading, or vegetation removal.

C. Light and Glare

Create a new source of substantial light or glare that would adversely affect daytime or nighttime views or activities in the area or pose a nuisance.

Impacts and Mitigation Measures

A. Visual Character and Quality

Impact AES-1: Changes in Visual Character or Quality Related to Roadway Improvements (Less than Significant)

Construction activities associated with the addition of passing lanes and construction of turnouts would require roadway alterations and may include the use of heavy equipment and associated vehicles (e.g., bulldozers, graders, scrapers, and trucks). Construction activities, equipment, and vehicles would be present in the viewshed of the Carmel Valley Road and Laureles Grade corridors and adjacent residences, commercial facilities, and public open space areas. However, construction activities are temporary, and the existing visual character of a specific roadway improvement site would be restored after completion of roadway construction.

Changes to the visual character of the existing roadway corridors resulting from implementing the proposed roadway improvements would not be considered significant since construction activities are considered temporary, and addition of passing, turning, or other ancillary lanes are not considered major changes to the roadway corridors. In most cases, the proposed improvements would expand or modify existing paved surfaces and include the addition of ancillary features, such as guardrails, road signs, etc. One grade separation project is proposed at Laureles Grade and Carmel Valley Roads. While introducing a grade separated roadway in this portion of the corridor would be a change in the topography, this project, if implemented, is not expected to significantly alter the overall rural character and quality of the roadway as it is one location in the 12-mile Carmel Valley Road corridor. Furthermore, no other aerial road structures are proposed, nor are any medians proposed such that the overall visual character or quality of the project corridors would be permanently altered. Therefore, this impact is considered **less-than-significant**. No mitigation is required.

B. Scenic Vistas and Corridors

Impact AES-2: Changes in Views from Adjacent Land Uses and Other Public Viewpoints (Less than Significant with Mitigation)

As discussed in the "Environmental Setting" above, Carmel Valley Road is a locally designated scenic roadway in the CVMP, and Laureles Grade is a County designated scenic roadway under Caltrans' State Scenic Highway program. Consequently, any improvements conducted on these roadways could result in impairment of scenic views from or of these corridors. In general, the response of various viewer groups to the proposed improvements would vary in accordance with the types of activities they engage in and the overall frequency

and duration of their views. For instance, recreational users of adjacent parks, golf courses, or other open space areas would have a moderate sensitivity to visual changes because their line-of-sight would shift frequently as a result of their recreational activity. Furthermore, roadway travelers are considered to have a low sensitivity because their line-of-sight is typically fleeting and at higher speeds. Adjacent residential viewers in areas where prominent views of the scenic corridors exist would likely have the most acute response to changes resulting from roadway alterations. Introduction of new visual elements into the foreground that could obstruct views of prominent topographic features is considered potentially significant. Implementation of **Mitigation Measure AES-2.1** would reduce this impact to a **less-than-significant** level.

Mitigation Measure AES-2.1: Implement Measures to Reduce Visual Intrusion for Existing Residences and other Public Viewpoints

The County will implement the following measures to reduce visual intrusion for existing residences and other public viewpoints:

- Retain mature trees and existing woody vegetation to the maximum extent feasible.
- Use non-reflective building materials to minimize glare and obtrusiveness.
- Provide a vegetative buffer around the periphery of the proposed project sites to provide screening from adjacent residents. Vegetation should be chosen and planted to be compatible with patterns of existing vegetation. Vegetation should be planted within the first year following project completion.

Impact AES-3: Degrade Scenic Resources or Visibly Alter Sensitive Natural Landforms along a State Scenic Highway Related to Traffic improvements (Less than Significant with Mitigation)

As discussed in the "Environmental Setting" above, Carmel Valley Road is a locally designated scenic roadway in the CVMP, and Laureles Grade is a county designated scenic roadway under Caltrans' State Scenic Highway program. Proposed roadway improvements such as additions of passing and turning lanes, grade separation, shoulder widenings, or spot realignments could require the removal of or damage to scenic resources (including vegetation) and/or visibly alter sensitive natural landform due to cutting, filling, or grading activities. These impacts are considered potentially significant. Implementation of **Mitigation Measure AES-3.1** would reduce this impact to a **less-than-significant** level.

Mitigation Measure AES-3.1: Implement Measures to Minimize Loss of Scenic Resources and Alteration of Natural Landforms within Scenic Roadway Corridors
Prior to commencement of construction activities, the County shall develop landscape design plans that limit the removal of vegetation, and/or incorporate a re-vegetation plan, which restores similar vegetation within the roadway corridors within one year of project completion. The County shall develop roadway design plans that minimize or avoid significant cutting, filling or grading activities within areas where natural land forms contribute prominent visual features. Landscape design and/or roadway design plans shall be developed in coordination with County agencies that oversight of all development design review.

C. Light and Glare

Impact AES-4: Creation of New Sources of Light and Glare (Less than Significant with Mitigation)

Proposed roadway improvements that require roadway alterations, such as lane additions, could create temporary light or glare if nighttime construction is used. Installation of temporary lighting for night construction activities could introduce a source of light during nighttime hours, affecting views and casting light onto adjacent properties and obstructing the line-of-sight of nighttime roadway travelers. However, these impacts would be temporary and any associated light or glare from construction activities would cease upon completion of a specific project.

Expansion of roads as a result of lane additions may require installation of new street lights or relocation of existing street lighting that would introduce a new source of light and glare, or move existing sources of light and glare closer to adjacent sensitive land uses (e.g., residences, wildlife habitats and/or open space areas). Other improvements such as the addition of new traffic signals at an existing unsignalized intersection may also introduce new sources of light and glare. These effects may be noticeable from adjacent sensitive land uses within the project corridor. Therefore, this impact is considered potentially significant. Implementation of **Mitigation Measure AES-4.1** would reduce this impact to a **less-than-significant** level.

Mitigation Measure AES-4.1: Implement Measures to reduce Temporary and/or Permanent Sources of Light and Glare
During nighttime construction, if required, all construction lighting shall be focused on-site and lighting shall be directed downward to avoid spillage onto adjacent land uses and minimize glare onto the line-of-sight of nighttime roadway travelers.

Where new street lighting is required or proposed, the County shall incorporate appropriate lighting design specifications to meet minimum safety and security standards and reduce the impact of introduced light

and glare. The specifications can include, but are not limited to the following:

- Luminaries shall be cutoff-type fixtures that cast low-angle illumination to minimize incidental spillover of light onto adjacent private properties and undeveloped open space. Fixtures that project light upward or horizontally shall not be used.
- Luminaries shall be directed away from residential, habitat and open space areas adjacent to the project site.
- Luminaries shall provide good color rendering and natural light qualities. Low-pressure sodium and high-pressure sodium fixtures that are not color-corrected shall not be used. Intensity shall be approximately 10 lux for roadway intersections.
- Luminary mountings shall be downcast and the height of the poles minimized to reduce potential for back scatter into the nighttime sky and incidental spillover of light onto adjacent private properties and undeveloped open space. Light poles shall be 20 feet high or shorter. Luminary mountings shall have non-glare finishes.
- All required or proposed lighting plans detailing the locations and specific types of lighting fixtures shall be submitted to the Monterey County Resource Management Agency - Planning Department for final review.

Section 3.5
Land Use

Introduction

This section provides a discussion of the land use issues related to the proposed program. This section includes a review of existing conditions based on available literature and a summary of federal, state, and local policies and regulations related to land use. Analyses of the environmental impacts of the proposed roadway improvements are discussed, and where feasible, mitigation measures are recommended to minimize or avoid potentially significant impacts.

Approach and Methodology

The land use section of this document is based on the following sources:

- *Monterey County General Plan* and Amendments,
- *Greater Monterey Peninsula Area Plan*, and
- *Carmel Valley Master Plan*.

As this is a Program EIR and the roadway improvements have not been designed yet, a more detailed land use impact analysis would be required for development of plans for individual projects under the proposed roadway improvements program.

Growth-inducing impacts and cumulative impacts related to land use are discussed in Chapter 4, *Other CEQA Analyses*.

Environmental Setting

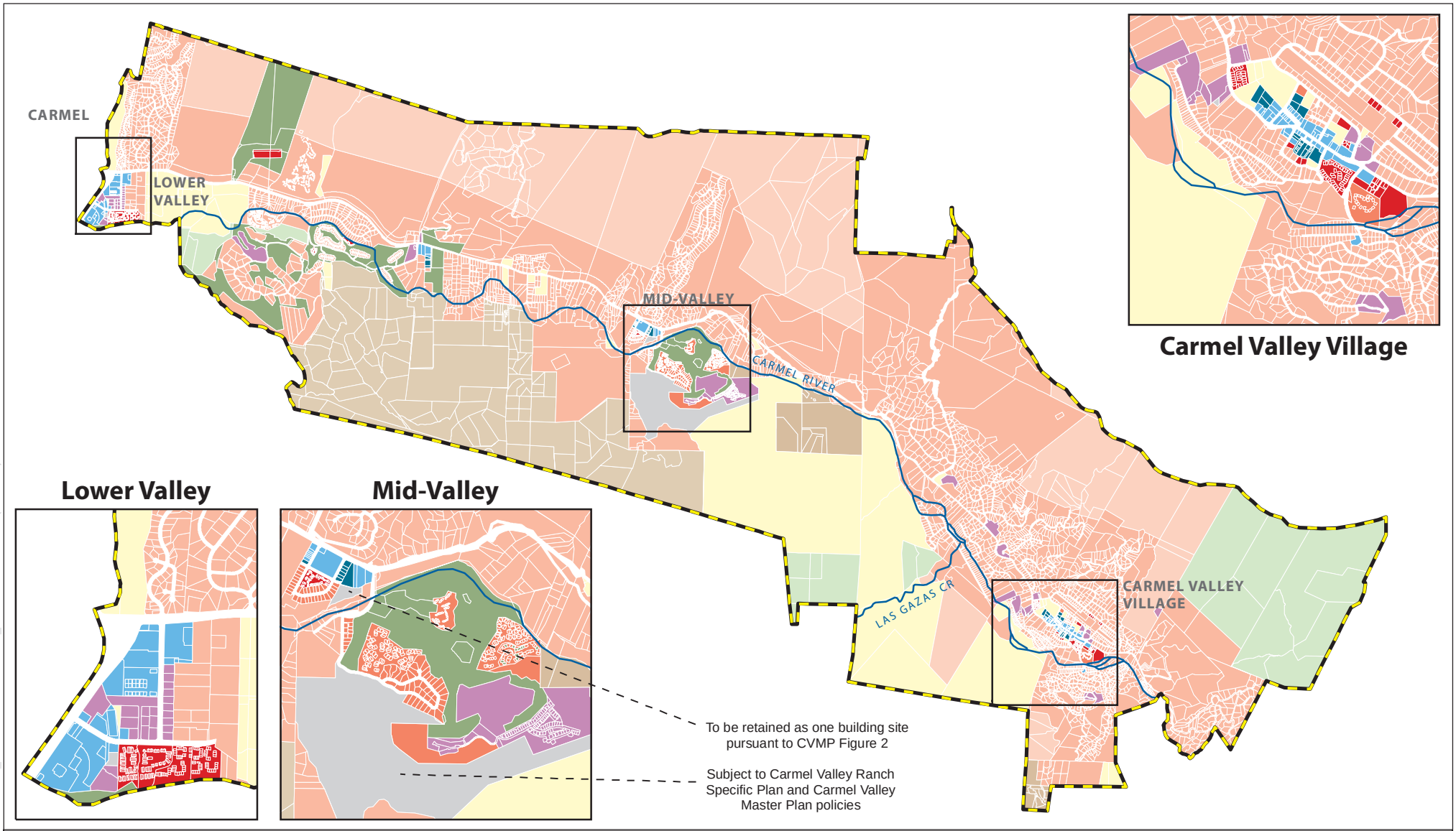
This section discusses existing conditions related to land use in the program area and relates these land use characteristics to significance criteria used to assess potential program impacts.

Existing Land Uses

Monterey County encompasses 2,127,359 acres (3,322 square miles [U.S. Census Bureau 2000a]). Approximately one percent of Monterey County is developed with residential (0.7%), commercial (0.03%), and industrial (0.3%) uses. Most of this development is concentrated in the northern one-third of the County. Agriculture is the largest land use, representing almost 60% of the total land area. The second largest land use consists of public and quasi-public uses (about 28%) such as educational, transportation, and military facilities as well as religious, recreational/cultural, and community facilities. Major urban areas are Salinas, Monterey-Seaside, and Carmel-by-the Sea (Monterey County 1982a).

Carmel Valley is made up of three main population centers, or communities: (1) the "Lower Valley" at the west end of Carmel Valley Road near the intersection with SR 1; (2) "Mid-Valley" in the vicinity of Robinson Canyon Road; and (3) Carmel Valley Village. Figure 3.5-1 shows the *Monterey County General Plan* land use designations for Carmel Valley and the program area. Residential uses comprise about 65% of the land use in Carmel Valley, including all densities (Rural Residential and Urban Residential). While residential lands are generally dispersed, the medium-density and high-density residential designations generally tend to cluster around the three main population centers, where commercial services are available (Monterey County 1986). As depicted in Figure 3.5-1, rural residential and small-scale agricultural pursuits make up the majority of the land use configuration of the valley. Agriculture, including grazing and farming, comprises about 12 % of the land use in the valley. Other land uses include commercial (about 1%), which includes professional office, and visitor accommodation facilities. Resource conservation and recreational areas comprise about 7% of the land use in Carmel Valley, including four regional parks, three golf courses, and tennis facilities. There are no industrial lands in Carmel Valley. Only about one-fourth of the approximately 28,000 acres of Carmel Valley has been developed by the date of publication of the CVMP.

The Carmel Valley Road corridor currently traverses and provides access to all three of the established communities of Carmel Valley. More specifically, Table 3.5-1, below, describes the land use designations in the program area (also see Figure 3.5-1). In the "Lower Valley", the program area traverses the main population center made up of light commercial, visitor-serving, and low- and medium-residential uses. Heading east, the Carmel Valley Road corridor borders mostly rural density residential, open space, agricultural, and public/quasi-public



Carmel Valley Traffic Improvement Program SEIR

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- Rural Density Residential
- Low-Density Residential
- Medium-Density Residential
- High-Density Residential
- Light Commercial
- Heavy Commercial
- Rural Grazing
- Permanent Grazing
- Under Review/Other
- Open Space
- Resource Conservation
- Public/Quasi Public
- Visitor-Serving/Professional Office
- Program Area Boundary

Source: County of Monterey

Figure 3.5-1
Land Use Designations

Jones & Stokes

lands. The program area near Carmel Valley Village includes mostly rural and low-density residential areas and resource conservation and open space designations.

Future Land Uses

New residential development, and the establishment of new communities in Carmel Valley is limited due to the moratorium on any future development that would significantly degrade traffic level of service conditions in the CVMP area.

Table 3.5-1. Land Use Designations and Distribution in the Program Area

Land Use Designation	Primary Location in the Program Area	Land Use Designation Definition	Approximate Percentage of Carmel Valley
Commercial	"Lower Valley", "Mid-Valley", Carmel Valley Village.	Divided between Light Commercial, Heavy Commercial, and Visitor Accommodations/Professional Office.	1%
Residential	Generally the north program area; scattered throughout; clustered around the three population centers.	Divided into Rural Density; Low Density; Medium Density; and High Density residential.	65%
Agricultural	South of Carmel Valley Road between "Lower Valley" and "Mid-Valley".	Sub-categories include Farmland, Permanent Grazing, and Rural Grazing.	12%
Resource Conservation	South of Carmel Valley Road near "Lower Valley"; northwest of Las Gazas Creek; northeast of Carmel Valley Village.	Included are watershed areas; riparian habitats; scenic resources; and lands, which are generally remote, have steep slopes, or are inaccessible.	7%
Public/Quasi Public	"Lower Valley"; south of Carmel Valley Road between "Mid-Valley" and Carmel Valley Village.	Encompasses publicly or privately owned uses such as schools; parks; regional parks; public works facilities; and hospitals that serve the public at large; and lands that are owned by a federal, state, or local public agencies.	15%
Industrial	Not Applicable	Categories include Agricultural Industrial, Light Industrial, and Heavy Industrial.	0%

Source: Monterey County n.d., 1982.

Regulatory Setting

Land use and development in the program area is guided by the *Monterey County General Plan,* the *Greater Monterey Peninsula Area Plan*, and the *Carmel Valley Master Plan*. No federal lands are within the program area; however the Los Padres National Forest borders the program area to the south. The following discussion summarizes the relevant goals and policies from each of these plans as

they relate to the proposed roadway program. Farmlands and farmland protection policies are discussed in Section 3.6, *Agricultural Resources*.

Development Plans in the Program Area

The *Monterey County General Plan* is a long-term comprehensive guide that addresses all aspects of future growth, development, and conservation within unincorporated Monterey County. New development in Monterey County must be in keeping with the plans and policies of the General Plan.

The *Greater Monterey Peninsula Area Plan* is part of the *Monterey County General Plan*. It is one of eight area plans for Monterey County that address local issues. The planning area is bordered by the North County, Greater Salinas, Toro, Cachagua, and Coast planning areas. Carmel Valley is within the Greater Monterey Peninsula Area planning area.

The *Carmel Valley Master Plan* is part of the *Monterey County General Plan* and is the specific planning document that governs the program area. It seeks to "accommodate[e] development pressures from a comprehensive standpoint" in order to preserve and enhance the rural and scenic qualities of Carmel Valley (Monterey County 1986). Table C-1. Carmel Valley Master Plan Policy Consistency Analysis, in Appendix C, includes all policies in the *Carmel Valley Master Plan* and a determination for the proposed program's consistency with each policy, as well as rationale for why the proposed program would or would not be consistent with each policy.

Monterey County Ordinances

Zoning is the primary tool for implementing the General Plan. The function of zoning is to translate the comprehensive, long-range, and relatively broad policies of the General Plan into single-purpose, short-range, and specific development standards for each piece of property in the County. Existing zoning officially designates the permitted uses and densities of all land in the County. Transportation corridors, streets, and roadways are considered generally compatible with all zoning designations because they provide accessibility to all land uses.

The proposed program would be subject to compliance with the County's Erosion Control and Grading Ordinances (refer to Section 3.1, *Geology, Soils, and Seismicity* and Section 3.2 *Hydrology and Water Quality*), the Noise Pollution Ordinance (refer to Section 3.9, *Noise)*, and energy policies (Monterey County 2006).

Criteria for Determining Significance

In accordance with State CEQA Guidelines, applicable federal and state regulations, and local plans and policies, the proposed program would be considered to result in a significant impact if it would:

A. Land Use Compatibility

Introduce new land uses into an area that could be considered to be incompatible with the surrounding land uses or with the general character of the area.

B. Plan/Policy Consistency

Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to a general plan, specific plan, LCP, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. (Potential impacts resulting from inconsistencies with an adopted habitat conservation plan are addressed in Section 3.3, *Biological Resources*).

C. Division of an Established Community

Physically divide an established community.

Impacts and Mitigation Measures

A. Land Use Compatibility

Impact LU-1: Potential Conflicts in Compatibility of Proposed Roadway Improvements with Surrounding Land Uses (Less than Significant)

Project-specific environmental review would be required at the point of specific project development.

Temporary land use impacts associated with construction activities of various roadway improvements may occur. Roadway improvement activities could include site grading, excavation, construction staging, and erection of structures (e.g. proposed grade separation at Laureles Grade/Carmel Valley Road). These activities could involve the movement of heavy construction equipment, truck traffic, grading activities, construction noise, and air emissions within proximity

to residential and other sensitive uses, creating a temporary incompatibility with existing uses. However, upon completion of construction activities, temporary conflicts with surrounding uses would cease. (Construction impacts specifically related to nuisance effects [i.e., air quality, noise, traffic, and aesthetics] are addressed in those respective sections of this EIR).

The proposed roadway improvements include shoulder widening, installation of paved turnouts, new signage, roadway extension and signalization, and additions of passing lanes, turning lanes and upgrading bicycle lanes. At the program level, the proposed improvements would be compatible with adjacent land uses, based on the current General Plan designations in the program area. The majority of the proposed roadway improvements would occur within existing transportation rights-of-way in areas that are largely residential, commercial, agricultural, and public/quasi public. The proposed improvements are considered to be minor upgrades and modifications that would not change the rural nature of the Carmel Valley Road corridor and would not be incompatible with the existing land uses that are currently in proximity to transportation corridors, streets, and roadways.

The proposed grade separation at Laureles Grade and Carmel Valley Road could require right-of-way acquisition in excess of what would normally be taken for other roadway improvements, such as shoulder widening or passing lane additions. However, this grade separation would occur in a predominantly developed area that would not be inconsistent with the existing configuration of land uses. Furthermore, this right-of-way acquisition, if necessary, would be the single project requiring new road right-of-way under the proposed program within the 12-mile Carmel Valley Road corridor and it would not detract from or substantially change the rural character of the area. Additionally, project-specific environmental review would be required prior to project approval that would assess the compatibility of an individual project under the proposed program with existing land uses and character.

Since the proposed program would not introduce new land uses into an area that would be considered incompatible with the surrounding land uses, and would not alter the rural character of the area, this impact is considered **less-than-significant**. No mitigation is required.

B. Plan/Policy Consistency

Impact LU-2: Conflicts with Land Use Plans, Policies, or Regulations (Less than Significant)

Appendix C of this EIR provides an analysis of the consistency of the proposed roadway improvement program with regard to all CVMP land use policies. The CVMP includes numerous policies that address development and transportation issues such as land use, retaining the rural character of the region, traffic improvement recommendations, natural resources including biological resources, geology and soils, hydrology and water quality, and traffic constraints.

In general, the proposed program would be consistent with the CVMP policies. Proposed roadway improvements have the potential to degrade geotechnical, biological, hydrological, water quality, aesthetic and cultural resources, and air quality and noise in the program area primarily during construction. However, as discussed in Sections 3.1 – 3.12 of this EIR, mitigation measures have been provided that would minimize or avoid potential impacts of the proposed program on these resources and thus, ensure that the proposed program does not conflict with the CVMP.

Prior to commencement of any project construction, subsequent project-specific environmental analysis would be conducted to assess whether any individual project would be inconsistent with applicable federal, state, and local plans, policies, and ordinances. Therefore, this impact is considered **less-than-significant**. No mitigation is required.

C. Division of an Established Community

Impact LU-3: Potential Division of an Established Community (Less than Significant)

Most of the proposed roadways improvements would occur between but not in the middle of three major population centers that are considered communities in Carmel Valley: "Lower Valley", "Mid-Valley", and Carmel Valley Village. The majority of the proposed roadway improvements are considered to be minor upgrades and modifications such as shoulder widening, installation of paved turnouts, new signage, roadway extension and signalization, and additions of passing lanes, turning lanes and upgrading of bicycle lanes. None of these proposed improvements would bisect or divide any of the abovementioned communities as these road improvements would take place within existing transportation rights-of-way or require minor right-of-way takes of adjacent land within the roadway corridor. The proposed grade separation at Laureles Grade and Carmel Valley Road is expected to occur within the existing intersection right-of-way and possibly within an additional right-of-way acquisition area. This improvement would change the grade and elevation of a section of the roadway, but it would remain in the general vicinity of the existing roadway and would not be a structure that would physically divide the surrounding residential neighborhood, which are already divided by Carmel Valley Road. The proposed program would not include any new roads. Furthermore, the proposed program would not degrade access to any of the communities, but would instead improve access and traffic conditions. This impact is considered **less-than-significant**. No mitigation is required.

Section 3.6

Agricultural Resources

Introduction

The analysis of potential environmental impacts related to agricultural resources was based on the qualitative review and comparison of the type, distribution, and quality of agricultural lands in Monterey County and the potential effect of the proposed traffic improvements.

Methodology

Jones & Stokes reviewed the following sources of information to prepare the agricultural resources chapter of this document.

- Monterey County General Plan, Greater Monterey Peninsula Area Plan, and Carmel Valley Master Plan.
- *Crop Report for 2005* from the Monterey County Agricultural Commissioner's Office.
- *Important Farmland Data* and *Land Use Conversion Data* from the California Department of Conservation, Division of Land Resource Protection.
- Map of *Monterey County Williamson Act Lands 2005: Land Enrolled in Williamson Act and Farmland Security Zone Contracts as of 01-01-2005*, 1:150,000, from the California Department of Conservation, Division of Land Resource Protection.
- Monterey County economic profile, California Department of Finance.
- Interviews with Monterey County staff in the Assessor's Office, Agriculture Commissioner's Office, and Resource Management Agency - Planning Department.
- Websites for Carmel Valley Chamber of Commerce and local businesses and organizations.

Environmental Setting

Regional Setting

Agriculture is one of the primary economic bases of Monterey County. Over 300,000 acres of productive farmlands can be found in the County (Monterey County 1982). Agriculture comprises 21% of jobs (Monterey County Chamber of Commerce 2004a). In 2005, the gross production value for all agriculture in Monterey County was $3,273,011,100 (Monterey County Agricultural Commissioner's Office 2006). The success of agriculture is due to rich soils, especially in Salinas Valley, and the long growing season, especially in the coastal region. Most of the agricultural land is concentrated in the North County, Greater Salinas, and Central Salinas Valley planning areas (Monterey County 1982).

Monterey County's most important crops are vegetables (68% of gross production value for 2005); fruits and nuts, including vineyards (21%); and nursery crops (9%). The remaining products are livestock and poultry, field crops, seed crops, and apiary products (Monterey County Agriculture Commissioner's Office 2006). In 2005, lettuce, strawberries, nursery items, grapes, and broccoli were top earning crops (Monterey County Agriculture Commissioner's Office 2006).

The productivity of farmlands is linked to its soils, which have been classified mapped by the Farmland Mapping and Monitoring Program of the California Department of Conservation (California Department of Conservation 2006a). The classifications in order of productivity are prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance (see *Farmland Quality* below for more details) (California Department of Conservation 2006a). Prime farmlands are scattered throughout the County, but are concentrated in the Salinas Valley (Monterey County 1982).

Important Farmland makes up 18% of the agricultural land in Monterey County, (California Department of Conservation 2006b). The majority of the Important Farmland in Monterey County is classified as Prime Farmland (70%) (California Department of Conservation 2006b). In 2004, Monterey County had the following acreages of farmland productivity types (California Department of Conservation 2006b).

- Prime farmland: 169,368 acres.
- Farmland of statewide importance: 44,544 acres.
- Unique farmland: 26,478 acres.
- Farmland of local importance: 0 acres.
- Grazing land: 1,066,539 acres.

Carmel Valley

Carmel Valley supports some limited small-scale agriculture—vineyards, row crops, orchards, nurseries, gardens, and grazing. A few small organic farms and olive groves produce goods for commercial consumption (Earthbound Farm 2006; Carmel Valley Chamber of Commerce n.d.). Most of the crops are grown in the areas between populated areas in the narrow valley, with some vineyards extending up the slopes. A few small vineyards and an olive grove lie along Laureles Grade. The land in Carmel Valley is particularly well suited to grape-growing because of the well drained, gravely slopes coupled with warm days, cool nights, and long growing season (Monterey County Vintners and Growers Association 2006). Seven wineries have tasting rooms, and 252 acres are planted with vineyards[1] (Monterey Vintners and Growers Association 2006).

The California Land Conservation Act provides a mechanism to protect agricultural lands from conversion to non-agricultural uses (see *Williamson Act Contract Lands* below). Two parcels in Carmel Valley are under Williamson Contract: a parcel of non-prime agricultural land under non-renewable contract in the Lower Valley near Highway 1, and a small parcel of prime agricultural land on the northern slope between Mid-Valley and Carmel Valley Village (California Department of Conservation 2006d) (see Figure 3.6-1).

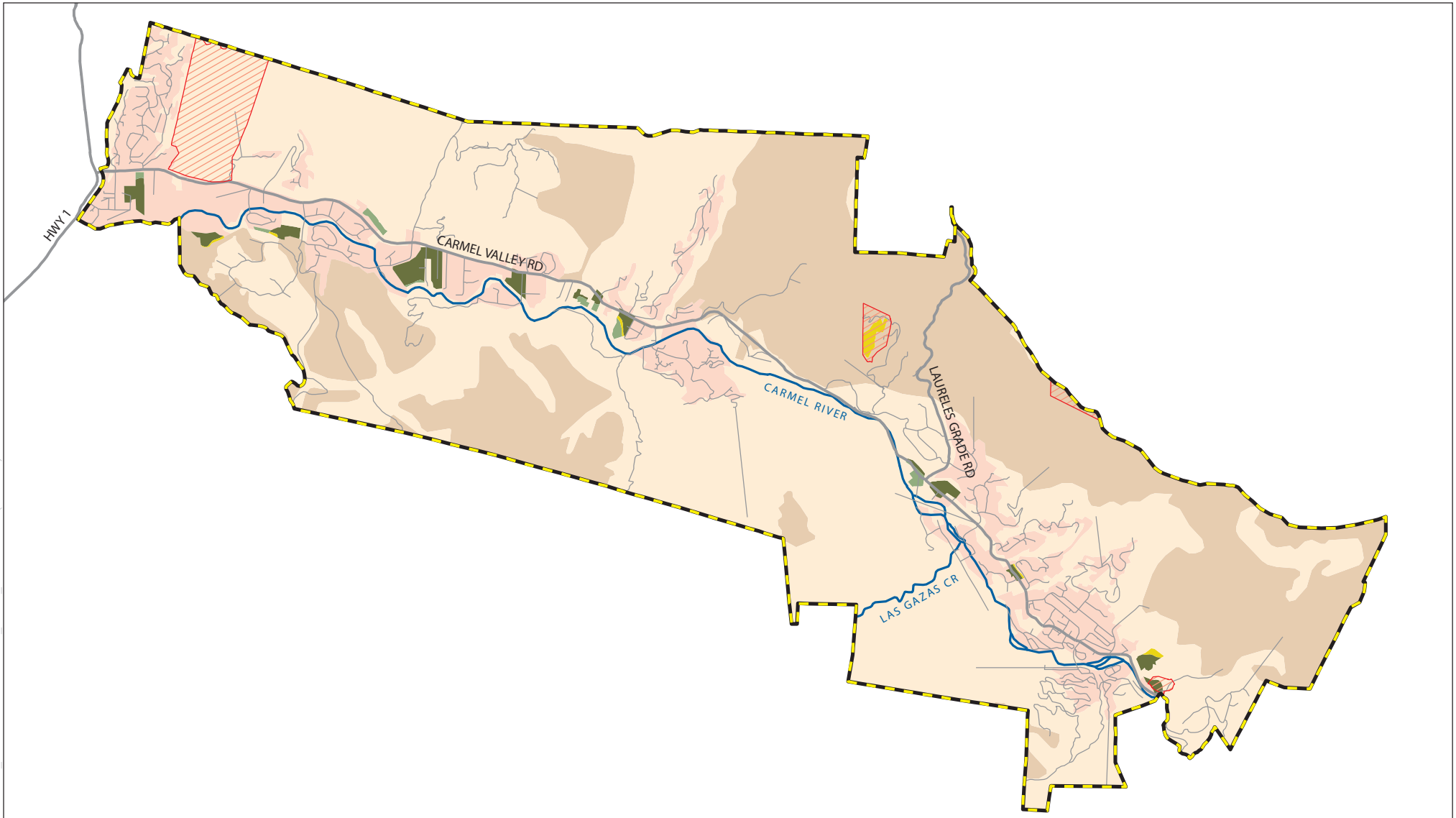
There are 9,110 acres of agricultural lands[2] in Carmel Valley, or 0.01% of the total agricultural acreage of Monterey County (California Department of Conservation 2006e). Important farmland[3] in Carmel Valley accounts for 349 acres (California Department of Conservation 2006e) (see Figure 3.6-1).

Regulatory Setting

Farmland Quality

Farmland quality refers to the ability of farmland to support various levels of crop or livestock production. Factors that affect farmland quality include the physical and chemical characteristics of a site's soils (i.e., soil quality), as well as climate, moisture supply, topography, and the quality and availability of irrigation water. The Land-Capability Classification System developed by the USDA Natural Resources Conservation Service (NRCS) and the Storie Index Rating System developed by the University of California are two land classification systems that are commonly used throughout the country to evaluate and rate the suitability of a given tract of land for agricultural production or other types of land. In California, the farmland classification system developed by the California Department of Conservation's Important Farmland Mapping and

[1] Vineyards accounted for 34,287 acres in Monterey County overall in 2003 (Monterey Vintners and Growers Association 2006).
[2] Grazing, Prime, Statewide Importance, and Unique Farmlands.
[3] Prime, Statewide Importance, and Unique Farmlands.



Carmel Valley Traffic Improvement Program SEIR

Figure 3.6-1
Important Farmlands and Williamson Act Lands

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Urban and Built-Up
Grazing Land
Prime Farmland
Farmland of Statewide Importance
Unique Farmland
Other
Williamson Act
Program Area Boundary
Major Roads
Other Roads

Source: California Department of Conservation

Jones & Stokes

Monitoring Program (FMMP) is the primary system used to evaluate the quality and distribution of farmland in California. The FMMP prepares Important Farmland maps approximately every 2 years for most of the state's agricultural regions based on soil survey information and land inventory and monitoring criteria developed by the NRCS. The farmland classification system used by the FMMP consists of eight mapping categories: five categories of agricultural lands and three categories of nonagricultural lands. The characteristics of these categories are summarized below.

Agricultural Land

- *Prime Farmland*. Lands with the combination of physical and chemical features best able to sustain long-term production of agricultural crops. The land must be supported by a developed irrigation water supply that is dependable and of adequate quality during the growing season. For this classification, the land must have been used for the production of irrigated crops at some time during the 4 years before the mapping data were collected.
- *Farmland of Statewide Importance*. Lands with agricultural land use characteristics, irrigation water supplies, and physical characteristics similar to prime farmland but with minor shortcomings (e.g., steeper slopes or less ability to hold and store moisture).
- *Unique Farmland*. Lands with lesser-quality soils used for the production of California's leading agricultural cash crops. These lands are usually irrigated but may include nonirrigated orchards or vineyards as found in some of the state's climatic zones.
- *Farmland of Local Importance*. Lands of importance to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee. In Monterey County, there are no Farmlands of Local Importance.
- *Grazing Land*. Lands on which the existing vegetation is suited to the grazing of livestock.

Nonagricultural Land

- *Urban and Built-Up Land*. Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This type of land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.
- *Other Land*. Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; vacant and nonagricultural land surrounded on all sides by urban development; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres.
- *Water*. Perennial water bodies with an extent of at least 40 acres.

State

Williamson Act Contract Lands

The California Land Conservation Act, better known as the Williamson Act, was enacted by the California State Legislature in 1965 to encourage the preservation of agricultural lands. The Williamson Act program permits property tax adjustments for landowners who contract with a city or county to keep their land in agricultural production or approved open space uses. Lands covered by Williamson Act contracts are assessed on the basis of their agricultural value instead of their potential market value under nonagricultural uses. In return for the preferential tax rate, the landowner is required to agree contractually not to develop the land for at least 10 years.

Williamson Act contracts are renewed annually for 10 years unless a party to the contract files for nonrenewal. If a landowner files a nonrenewal application, the automatic annual extension of a contract ends and a 9-year phase-out of the contract begins. During the phase-out period, the land remains restricted to agricultural and open-space uses, but property taxes gradually return to levels associated with the market value of the land. At the end of the 9-year nonrenewal process, the contract expires and the owner's uses of the land is restricted only by applicable local zoning. Under extraordinary circumstances, Williamson Act contracts can be cancelled without completing the term nonrenewal process.

The Williamson Act defines compatible use of contracted lands as any use determined by the county or city that administers the agricultural preserve to be compatible with the agricultural, recreational, or open-space use of land within the preserve and subject to contract (California Government Code, Section 51202[e]). However, uses deemed compatible by a county or city government must be consistent with the principles of compatibility set forth in California Government Code Section 51238.1.

Local

Monterey County designates three types of agricultural lands in its Land Use Plan: Permanent Grazing, Agricultural Conservation, and Agricultural Preservation.

Monterey County General Plan

Policy 3.2.3. Lands having a high erosion potential as identified in the Soil Survey shall require adequate erosion control methods for agricultural uses.

Policy 4.1.3. All farmlands designated as prime, of statewide importance, unique, or of local importance shall be protected from incompatible uses on adjacent lands.

Policy 30.0.1. The County shall prevent non-agricultural uses which could interfere with the potential of normal agricultural operations on viable farmlands designated as prime, of statewide importance, unique, or of local importance.

Policy 30.0.2. The County shall require that permanent, well- defined buffer areas be provided as part of new non-agricultural development proposals which are located adjacent to agricultural land uses on viable farm lands designated as prime, of statewide importance, unique, or of local importance. These buffer areas shall be dedicated in perpetuity, shall be of sufficient size to protect agriculture from the impacts of incompatible development and to mitigate against the effects of agricultural operations on adjacent land uses, and shall be credited as open space.

Policy 30.0.3. The County shall allow division of viable farmland designated as prime, of statewide importance, unique, or of local importance only for exclusive agricultural purposes, when demonstrated not to be detrimental to the agricultural viability of adjoining parcels.

Policy 39.4.1. Priority shall be given to the improvement of highways and arterial roads that carry a significant amount of goods movement, particularly agricultural goods.

Greater Monterey Peninsula Area Plan

Policy 26.1.6.1. Development proposals should include compatible open space uses located between other developed areas in order to maintain a rural atmosphere and to protect scenic resources.

Carmel Valley Master Plan

Policy 4.2.4. Development adjacent to agricultural lands shall be planned to minimize adverse effects on the productivity of the agricultural soils.

Criteria for Determining Significance

In accordance with State CEQA Guidelines, applicable federal and state regulations, and local plans and policies, the proposed program would be considered to result in a significant impact if it would:

A. Convert Farmland to Nonagricultural Use

Convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or Farmland of Local Importance, as shown on the maps prepared pursuant to the FMMP, to nonagricultural use.

Involve other changes in the existing environment that, because of their location or nature, could result in the conversion of farmland to nonagricultural use.

B. Conflict with Existing Use or Legal Status

Conflict with existing Williamson Act contracts.

Conflict with adjacent uses in a manner that induces those lands to be converted to nonagricultural uses.

Impacts and Mitigation Measures

A. Convert Farmland to Nonagricultural Use

Impact AG-1: Direct Conversion of Important Farmland to Nonagricultural Use (Significant and Unavoidable)

There are several parcels of prime farmland and farmland of statewide importance in Carmel Valley, many of which are located immediately adjacent to Carmel Valley Road. The proposed roadway improvements have the potential to result in the conversion of some Important Farmland to nonagricultural uses. Expansion of roadways under the proposed improvements requires taking lands for use as new right-of-way. This impact is considered potentially significant. Implementation of the following mitigation measure would reduce this impact, but not to a less-than-significant-level for all projects because Monterey County cannot guarantee that conversion of farmland can be avoided as part of future projects. Therefore, this impact is considered **significant and unavoidable**.

Mitigation Measure AG-1.1: Evaluate the Potential for Direct Farmland Conversion at the Project Level and Avoid, Minimize, and Compensate for Loss of Farmland

The County will evaluate the environmental significance of potential farmland conversion impacts at the project level using the California Agricultural Land Evaluation and Site Assessment Model, which was developed by the California Department of Conservation's Division of Land Resource Protection to provide lead agencies with a systematic and objective method for evaluating the potential impacts of proposed projects on agricultural resources. The County will implement the following measures to reduce conversion of significant farmland:

- design the proposed roadway projects to avoid or minimize the direct conversion of Important Farmland to nonagricultural uses, and
- compensate for unavoidable Important Farmland conversion impacts by:
  - enrolling offsite agricultural lands under Williamson Act contracts,
  - protecting productive offsite agricultural land subject to conversion through the purchase or transfer of its development rights, or
  - making agricultural improvements on potential prime agricultural lands.

Impact AG-2: Indirect Conversion of Important Farmland to Nonagricultural Use (Less Than Significant)

The proposed roadway improvement contributes to indirect growth of Carmel Valley to planned buildout. This growth could result in conversion of farmland to residential or other urban or semi-urban use. However, this growth is planned and approved. Further, while the proposed program accommodates future growth, it does not immediately convert a significant amount of farmland to another use. Any new development would be planned and approved separately from the proposed program and would undergo its own CEQA review. This impact is considered **less-than-significant**. No mitigation is necessary.

B. Conflict with Existing Use or Legal Status

Impact AG-3: Conflict with Existing Williamson Act Contracts (Less Than Significant)

The Williamson Act allows county and city governments to define compatible land uses for contract lands within their jurisdictions if those uses are consistent with the compatibility principles set forth in Government Code Section 51238.1. There is one parcel under Williamson Act contract in Carmel Valley close

enough to the roads to be potentially affected by the proposed improvements. This parcel is under non-renewable contract. There are no other lands under Williamson Act contracts at any of the proposed roadway improvement areas. This impact is considered **less-than-significant**. No mitigation is required.

Impact AG-4: Conflict With Use of Adjacent Lands That Induces Conversion to Nonagricultural Use (Less than Significant)

The proposed roadway improvements would improve or modify existing transportation-related uses within the Carmel Valley Road and Laureles Grade corridors. Specific projects, such as lane additions, could require taking of minimal amounts of adjacent lands in order to expand road right-of-way. Furthermore, none of the proposed traffic improvements are expected to require division of existing parcels used for agricultural production. Therefore, this impact is considered **less-than-significant**. No mitigation is required.

Section 3.7

Transportation and Circulation

Introduction

This section analyzes the proposed program's potential effects related to transportation and circulation. The key source of data used in the preparation of this section is the *Traffic Study for the Carmel Valley Master Plan* prepared by DKS Associates (DKS 2007a) and appended to this EIR as Appendix F. This section includes a review of existing conditions based on the traffic study completed for the proposed program. Analyses of the environmental impacts of the proposed roadway improvements are discussed, and where feasible, mitigation measures are recommended to minimize or avoid potentially significant impacts.

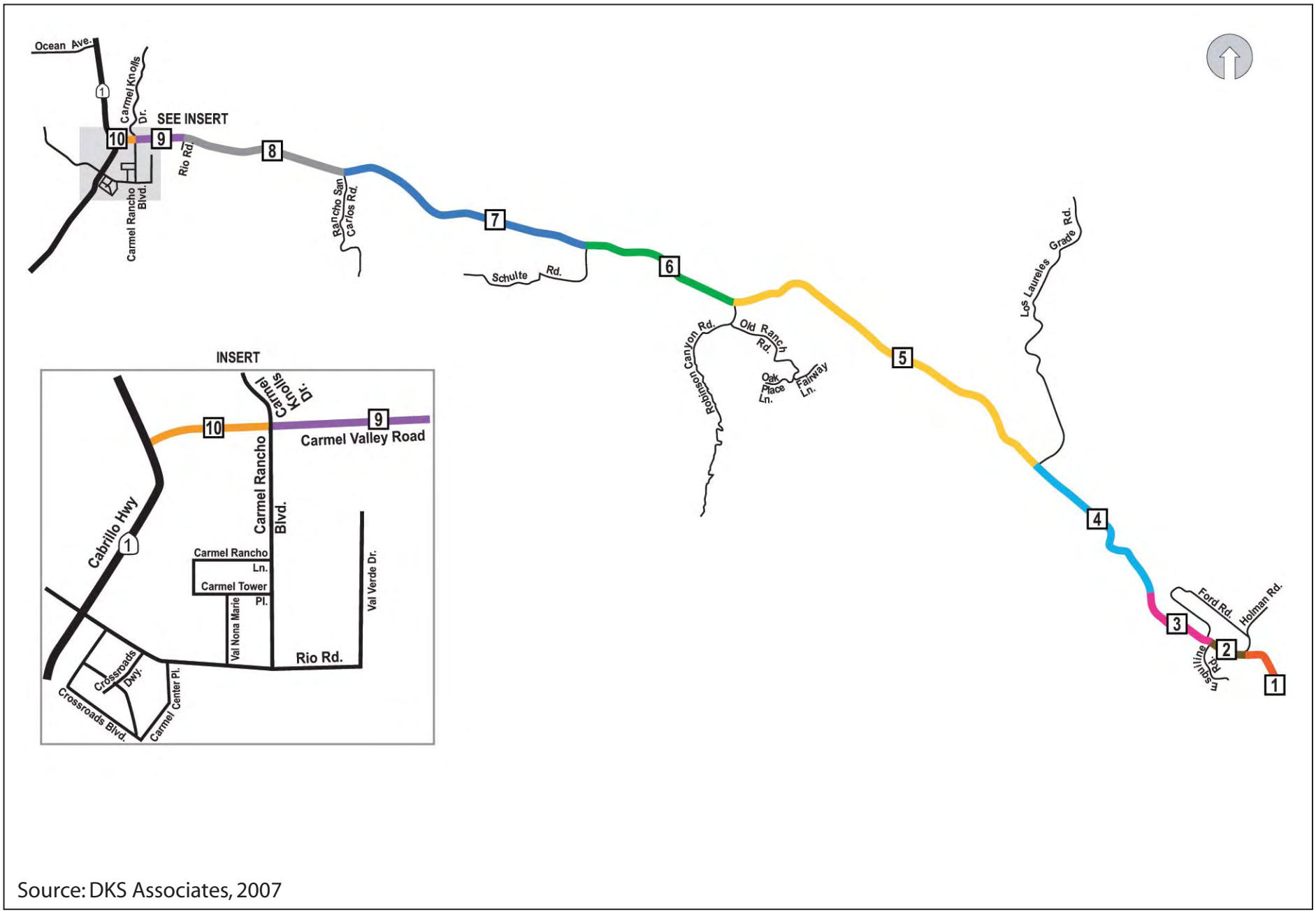
Environmental Setting

Regional Access

Regional access to the program area is provided by Highway 1, Carmel Valley Road, and Laureles Grade. Descriptions of regional access roads are given below. Figure 3.7-1 depicts the regional and local transportation network in Carmel Valley.

Highway 1 (State Route 1)

Highway 1 (SR 1) runs in the north-south direction as it passes through Carmel before becoming a freeway in Monterey. It includes two lanes of travel (one in each direction) south of Carmel Valley Road. North of Carmel Valley Road, SR 1 provides three travel lanes (two in the northbound direction and one lane in the southbound direction) until Ocean Avenue. SR 1 provides access to the program area via Carmel Valley Road and Rio Road.



Source: DKS Associates, 2007

05335.05 Traffic Study (3-07)

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Figure 3.7-1
Existing Roadway Segments

State Highway 68

State Highway 68 runs in the east-west direction and includes two lanes of travel (one in each direction) between SR 1 and the Toro Regional Park area. North of the Toro Regional Park area, State Highway 68 includes four-lanes of travel (two in each direction). State Highway 68 provides access to the program area via Laureles Grade.

Carmel Valley Road

Carmel Valley Road is a two to four-lane major arterial facility providing travel in the east-west direction; it extends from SR 1 in the west, through Carmel Valley to Arroyo Seco Road in the east. Carmel Valley Road has posted speed limits between 15 to 55 miles per hour (mph).

Laureles Grade

Laureles Grade extends from Carmel Valley Road, in the south, to Highway 68, in the north. In the program area, Laureles Grade runs in the north-south direction, and includes two-lanes of travel (one in each direction).

Local Access

Local access to the program area is provided by Rio Road and Carmel Rancho Boulevard. Descriptions of local access roads are provided below.

Rio Road

Rio Road is a two- to four-lane local street with an east-west direction of travel that extends from Val Verde Drive in the east to its terminus at Junipero Avenue in the west, where it becomes 13th Avenue in the City of Carmel-by-the-Sea. It has a posted speed limit of 25 mph.

Carmel Rancho Boulevard

Carmel Rancho Boulevard is a four-lane local street with a north-south travel direction. It extends from Rio Road in the south to its terminus at Carmel Valley Road where it becomes Carmel Knolls Drive. Carmel Rancho Boulevard has a posted speed limit of 35 mph.

Existing Traffic Conditions

Intersection Level of Service

Level of service (LOS) is a common measure of traffic service that uses letters A through F (least to most traffic congestion, respectively) to indicate the amount of congestion and delay. The LOS evaluation indicates the degree of congestion that occurs during peak travel periods and is the principal measure of roadway performance. The LOS concept was developed to correlate numerical traffic volumes to subjective descriptions of traffic performance at intersections, which are the controlling bottlenecks of traffic flow. In general practice, LOS A indicates free flow conditions, while LOS B and C signify stable conditions with acceptable delays. LOS D is typically considered acceptable for peak hours in urban areas, with average delays in the range of 35 to 55 seconds. LOS E is approaching capacity and LOS F represents conditions at or above capacity, with average delays over 80 seconds.

Monterey County uses the *2000 Highway Capacity Manual* (HCM) operations method for analysis of intersection levels of service for both unsignalized and signalized intersections.

A total of seven intersections were studied for the proposed program. Figure 3.7-2 illustrates the existing lane geometry and traffic control of each of the study intersections. Figure 3.7-3 illustrates the existing A.M. and P.M. peak hour volumes. The intersections and their corresponding existing LOS are presented in Table 3.7-1, below.

Table 3.7-1. Intersection Level of Service—Existing Conditions (2005)

#	Intersection Name	A.M. Peak		P.M. Peak	
		Avg. Delay	LOS[1]	Avg. Delay	LOS[1]
1	Highway One & Carmel Valley Road (S)	16.5	B	20.6	C
2	Carmel Rancho Boulevard & Carmel Valley Road (S)	17.5	B	22.0	C
3	Highway One & Rio Road (S)	28.7	C	30.2	C
4	Crossroads Driveway & Rio Road (S)	9.9	A	11.2	B
5	Carmel Center Place & Rio Road (S)	6.2	A	8.7	A
6	Carmel Rancho Boulevard & Rio Road[2] (U)	3.5	A	7.9	B
7	Laureles Grade & Carmel Valley Road[2](U)	46.3	E	>50	F

Notes: Average Delay in seconds per vehicle

[1] LOS: Level of Service.

[2] Unsignalized Intersections: Delay is Worst Approach Delay In seconds per vehicle.

(S): Signalized intersection; (U): Unsignalized intersection.

Signalized Intersections

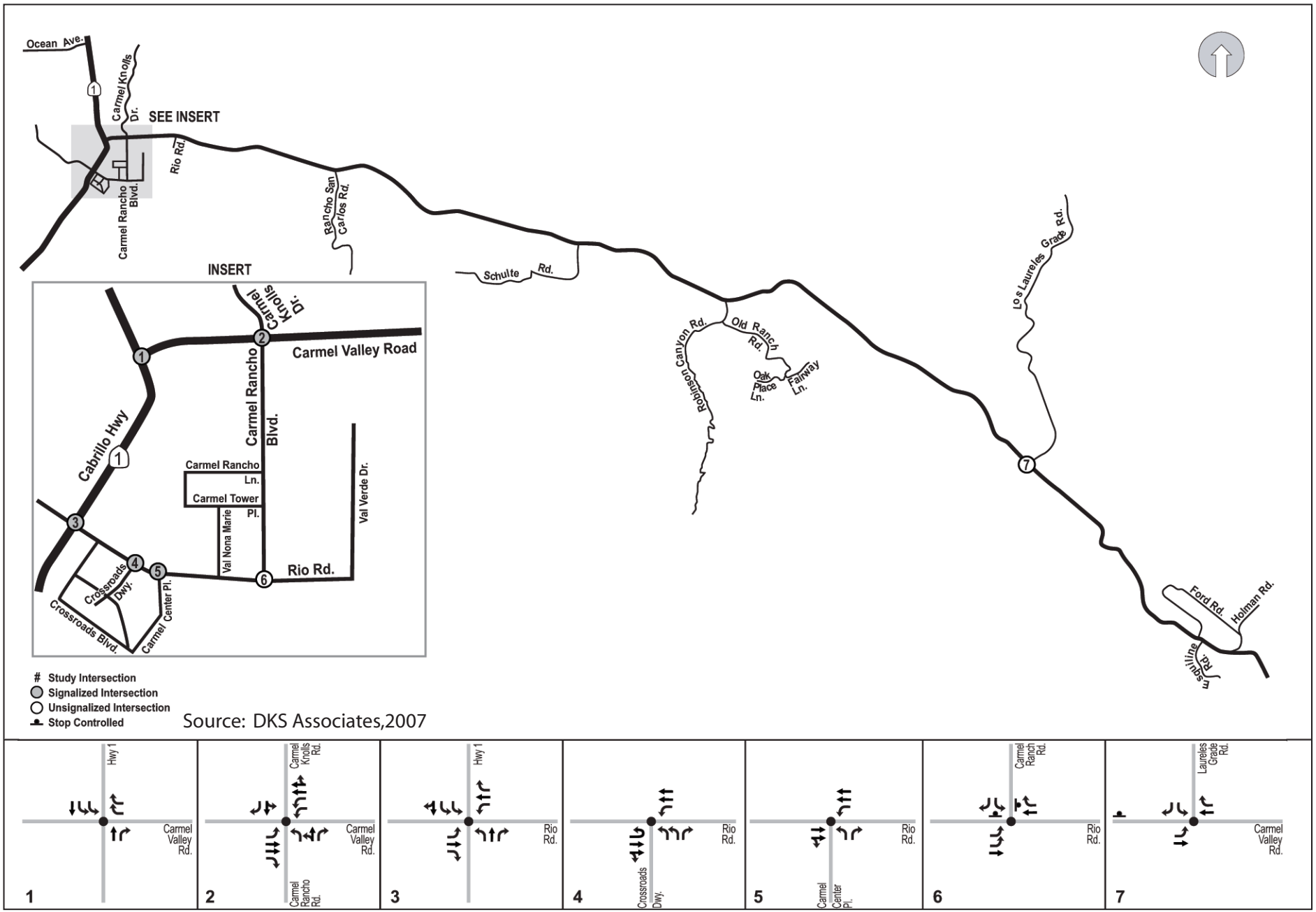
Both A.M. peak hour (7 to 9 A.M.) and P.M. peak hour (4 to 6 P.M.) intersection level of service calculations were collected for four of the seven existing study intersections from the County. To supplement data provided by the County, new weekday intersection turning movement counts were collected by DKS at the remaining intersections, listed below:

- Crossroads Driveway & Rio Road;
- Carmel Center Place & Rio Road; and
- Laureles Grade & Carmel Valley Road.

All five of the signalized intersections that were studied operated at LOS C or better in both the A.M. and P.M. peak hours.

Unsignalized Intersections

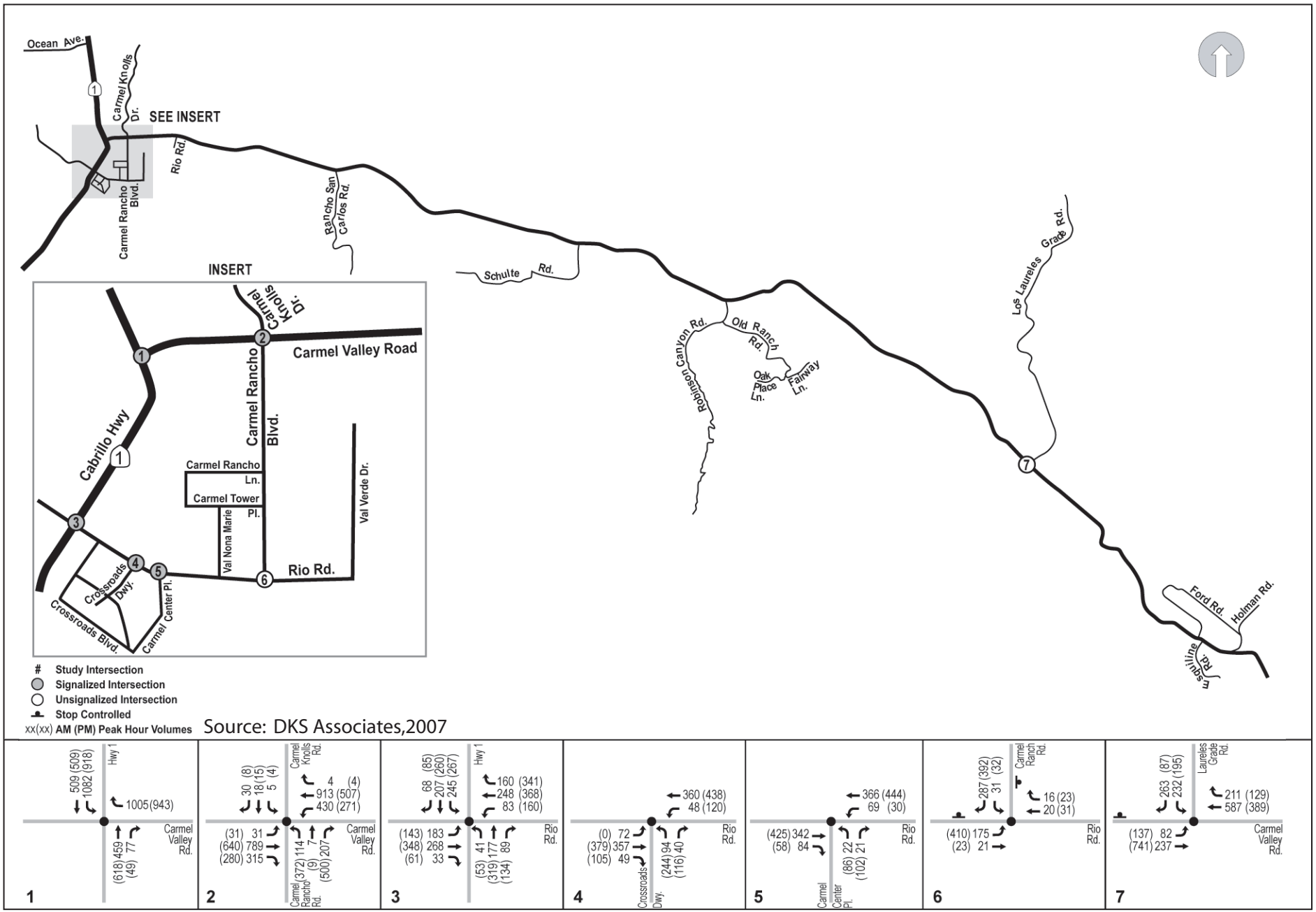
At unsignalized intersections, each approach to the intersection was evaluated separately and assigned a LOS. The LOS is based on the average delay at the worst approach for two-way stop controlled intersections, in seconds per vehicle. Total delay is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. This time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position.



05335.05 Traffic Study (3-07)

Jones & Stokes

Figure 3.7-2
Existing Insection Geometry and Traffic Control



05335.05 Traffic Study (3-07)

Jones & Stokes

Figure 3.7-3
Existing Insection Volumes
Weekday AM and PM Peak Hour

A peak-hour volume warrant (per the MUTCD California Supplement) was performed for the studied unsignalized intersections. Based on the analysis results, the intersection of Laureles Grade / Carmel Valley Road satisfied the warrant under the existing conditions for both the A.M. and P.M. peak hours. The intersection of Carmel Rancho Boulevard/Rio Road does not satisfy the peak-hour warrant criteria.

Roadway Segment Analysis

A roadway segment analysis was also performed for ten roadway segments along Carmel Valley Road using the average daily traffic (ADT) volumes and the two-lane or multi-lane HCM Methodology.

For the purpose of this analysis, Carmel Valley Road was categorized as a Class II Facility. As defined in the *Highway Capacity Manual*, a Class II facility consists of a "two-lane highway on which motorists do not necessarily expect to travel at high speeds. Two-lane highways that function as access routes to Class I facilities, serve as scenic or recreational routes that are not primary arterials, or pass through rugged terrain generally are assigned to Class II. Class II facilities most often serve relatively short trips, the beginning and ending portions of longer trips, or trips for which sightseeing plays a significant role." The multi-lane roadway segment of Carmel Valley Road between SR 1 and Rancho San Carlos was also categorized as a Class II facility. For two-lane highways, level of service is evaluated based on the "percent time-spent following" as opposed to multi-lane highways, where level of service is evaluated based on vehicle density. Table 3.7-2 provides the LOS criteria for two-lane and multi-lane highways.

Table 3.7-2. Two-Lane and Multi-Lane Highway—LOS Criteria

	Two-Lane[1]	Multi-Lane[2]
Level of Service	Percent Time-Spent Following (PTSF)	Density (pc/mi/ln)
A	<= 40	<= 11
B	> 40 to 55	> 11 to 18
C	> 55 to 70	> 18 to 26
D	> 70 to 85	> 26 to 35
E	> 85	> 35 to 41
F	See note 3	> 41

Notes:

[1] Highway Capacity Manual, Transportation Research Board, 2000, Exhibit 20-4, Class II Facility.

[2] Highway Capacity Manual, Transportation Research Board, 2000, Exhibit 21-2—Facility with FFS of 55 mph.

[3] LOS F applies whenever the flow rate exceeds the roadway segment capacity.

The County provided 2005 ADT volumes for each of the ten roadway segments, as well as 24-hour threshold volumes. A detailed description of each roadway segment is provided below.

Segment 1—East of Holman Road

This roadway segment along Carmel Valley Road consists of two (2) travel lanes, one in each direction. East of Holman Road, the posted speed limit is 55 mph and no shoulders are provided.

Segment 2—Holman Road to Esquiline Road

This roadway segment along Carmel Valley Road consists of two (2) travel lanes, one in each direction. The posted speed limit is 35 mph and no shoulders are provided. Shoulders are provided in certain areas.

Segment 3—Esquiline Road to Ford Road

This roadway segment along Carmel Valley Road consists of two (2) travel lanes, one in each direction. The posted speed limit is 25 mph and no shoulders are provided. Transit stops for MST Line 24 are provided near the Ford Road intersection. Shoulders are provided in certain areas.

Segment 4—Ford Road to Laureles Grade

This roadway segment along Carmel Valley Road consists of two (2) travel lanes, one in each direction. The posted speed limit is 35 mph and no shoulders are provided. Transit stops for MST Line 24 are provided. Shoulders are provided in certain areas.

Segment 5—Laureles Grade to Robinson Canyon Road

This roadway segment along Carmel Valley Road consists of two (2) travel lanes, one in each direction. In the westbound direction, the posted speed limit is 50 mph west of Laureles Grade to Miramonte Road. West of Miramonte Road the posted speed limit is 55 mph until Haldorn Road. Just west of Haldorn Road the posted speed limit is 45 mph. In the eastbound direction, the posted speed limit is 55 mph. Transit stops for MST Line 24 are provided.

Segment 6—Robinson Canyon Road to Schulte Road

This roadway segment along Carmel Valley Road consists of two (2) travel lanes, one in each direction. In the westbound direction, the posted speed limit is 50 mph between Robinson Canyon Road and Loma Del Rey and 45 mph west of Loma Del Rey until Schulte Road. A flashing 25 mph posted speed limit is located near the Carmel Adult School and St. Philips Lutheran Church. In the eastbound direction, the posted speed limit is 50 mph between Schulte Road and Mercurio Doud Road. East of Mercurio Doud Road the posted speed limit is 45 mph. Transit stops for MST Line 24 are provided.

Segment 7—Schulte Road to Rancho San Carlos Road

This roadway segment along Carmel Valley Road consists of two (2) lanes of travel (one lane in each direction) with a two-way left turn lane provided along the center of the roadway between Valley Green Drive and the farm driveway. Left-turn pockets are provided for vehicular turns at the intersections of Cañada Way and Valley Green Drive, as well as, at the farm entrance, near St. Philips

Lutheran Church and Schulte Road. The two-way left turn lane continues east of the fire station to Schulte Road. Carmel Valley Road has a posted speed limit of 45 mph in the eastbound direction and a 50 mph in the westbound direction. Bike lanes and transit stops are provided along this segment of Carmel Valley Road. Pedestrian facilities within this segment include sidewalks and crosswalks. Crosswalks are located west of the St. Philips Lutheran Church and accommodate pedestrian movements within the immediate vicinity. Pedestrian access to transit facilities is hampered by the lack of continuous sidewalks and walkways to transit stops.

Segment 8—Rancho San Carlos Road to Rio Road

This roadway segment along Carmel Valley Road consists of four (4) lanes of travel between Rio Road and Via Petra—Del Mesa Drive (two lanes in each direction). East of Via Petra—Del Mesa Drive, Carmel Valley Road becomes a two-lane (one lane in each direction) roadway with a two-way left turn lane provided along the center of the roadway. The two-lane roadway runs until it intersects with Rancho San Carlos. The posted speed limit is 55 mph. Signalized intersections include Via Mallorca and Rancho San Carlos. Left-turn pockets are provided for vehicular turns at the intersections of Rio Road, Martin Canyon Road, Via Mallorca, Via Petra, and Rancho San Carlos.

Pedestrian facilities within this segment include sidewalks, crosswalks, and pedestrian signals. Crosswalks and pedestrian signals at both of the signalized intersections accommodate pedestrian movements within the immediate vicinity. Ramps are provided at the signalized intersections for disabled person access. Pedestrian access to transit facilities is impeded by the lack of sidewalks and walkways to transit stops.

Segment 9—Rio Road to Carmel Rancho Boulevard

This roadway segment along Carmel Valley Road consists of four (4) travel lanes, two in each direction. The posted speed limit is 45 mph with a 25 mph posted speed limit enforced near Carmel Middle School. Signalized intersections include Carmel Rancho Boulevard and Carmel Valley Middle School. Left-turn pockets are provided for vehicular turns at the intersections of Carmel Rancho Boulevard, Rio Vista Drive, Carmel Middle School, and Rio Road.

Pedestrian facilities within this segment include sidewalks, crosswalks, and pedestrian signals. Crosswalks and pedestrian signals at both of the signalized intersections accommodate pedestrian movements within the immediate vicinity. Ramps are provided at the signalized intersections for disabled person access. Pedestrian access to transit facilities is hampered by the lack of continuous sidewalks and walkways to transit stops.

Segment 10—Highway 1 to Carmel Rancho Boulevard

This roadway segment along Carmel Valley Road consists of four (4) travel lanes, two in each direction. The posted speed limit is 45 mph. Signalized intersections include Carmel Rancho Boulevard and Highway 1. Left-turn pockets are provided for vehicular turns at the intersections of Carmel Rancho Boulevard and Highway 1.

Pedestrian facilities within this segment include sidewalks, crosswalks, and pedestrian signals. Crosswalks and pedestrian signals are provided at Carmel Valley Road and Carmel Rancho Boulevard–Carmel Knolls Drive. Crosswalks accommodate pedestrian movements within the immediate vicinity. Ramps are provided at the signalized intersections for disabled person access. There are no sidewalks or walkways to aid pedestrian access to transit stops.

Roadways Segment Operations

Table 3.7-3 provides a comparison analysis of existing ADT volumes for each of the roadway segments. Nine of the ten roadway segments in the study area currently operate below the acceptable threshold. The exception is the roadway segment (Segment 7) between Schulte Road and Rancho San Carlos Road.

Table 3.7-3. Roadway Segment—Existing ADT Monitoring

#	Roadway Segment	Lanes	24-Hr Threshold Volume	ADT 2005	Threshold Exceeded
1	East of Holman Road	2	8,487	3,774	No
2	Holman Road to Esquiline Road	2	6,835	4,260	No
3	Esquiline Road to Ford Road	2	N/A	8,651	No
4	Ford Road to Laureles Grade	2	11,600	11,589	No
5	Laureles Grade to Robinson Canyon Road	2	12,752	11,739	No
6	Robinson Canyon Road to Schulte Road	2	15,499	14,736	No
7	Schulte Road to Rancho San Carlos Road	2	16,340	16,694	**Yes**
8	Rancho San Carlos to Rio Road	4	48,487	21,010	No
9	Rio Road to Carmel Rancho Boulevard	4	51,401	25,484	No
10	Carmel Rancho Boulevard to Highway One	4	N/A	23,847	No

: Monterey County Department of Public Works, data e-mailed September 2006.

Tables 3.7-4 and Table 3.7-5 provide an existing conditions LOS comparison analysis for each of the studied two-lane and multi-lane roadway segments, respectively. Under the existing condition, all roadway segments operate at acceptable levels of service defined by CVMP policy (see discussion below).

Table 3.7-4. Two-Lane Roadway Segment—Existing Condition (2005) LOS Analysis

Segment	To/From	A.M. Peak			P.M. Peak		
		2-Way Vol.	PTSF[1]	LOS	2-Way Vol.	PTSF[1]	LOS
1	East of Holman	373	32.46	A	430	37.98	A
2	Holman Road to Esquiline Road	390	32.39	A	473	39.50	A
3	Esquiline Road to Ford Road	774	55.81	C	790	54.57	A
4	Ford Road to Laureles Grade	1,114	68.00	C	1,112	66.60	C
5	Laureles Grade to Robinson Canyon Road	1,074	70.00	D	1,158	68.77	C
6	Robinson Canyon Road to Schulte Road	1,445	76.42	D	1,430	74.92	D
7	Schulte Road to Rancho San Carlos Road	1,629	82.98	D	1,556	76.75	D

Note: [1]PTSF: Percent Time-Spent Following.

Table 3.7-5. Multi-Lane Roadway Segment—Existing Condition (2005) LOS Analysis

Segment	To/From	Direction	A.M. Peak				P.M. Peak			
			Volume (vph)	Flow Rate (pcphpl)	Density[1]	LOS	Volume (vph)	Flow Rate (pcphpl)	Density[1]	LOS
8	Rancho San Carlos to Rio Road	EB	769	470	7.53	A	1,034	550	10.00	A
		WB	937	586	10.65	A	874	475	8.64	A
9	Rio Road to Carmel Rancho Boulevard	EB	1,028	579	10.53	A	1,272	650	11.82	B
		WB	1,273	757	13.76	B	1,098	646	11.75	B
10	Carmel Rancho Boulevard to Hwy One	EB	1,106	621	11.29	B	1,030	575	10.45	A
		WB	904	601	10.93	A	1,089	662	12.01	B

Note: Density in passenger cars per mile per lane.

Regulatory Setting

Local Policies

Monterey County General Plan

According to Monterey County Public Works *Guide for the Preparation of Traffic Impact Studies* (Monterey County 2003), an acceptable level of service is LOS C for signalized intersections and LOS E for unsignalized intersections.

The current 1982 *General Plan* establishes a LOS standard of C for County road segments. However, the *General Plan* allows Area Plans to set different standards than the *General Plan*, which are described below for CVMP road segments.

Carmel Valley Master Plan

Within the CVMP area, the LOS standard for roadway segments was previously established by CVMP Policy 39.3.2.1.

Policy 39.3.2.1 To implement traffic standards to provide adequate streets and highways in Carmel Valley, the County shall conduct and implement the following:

a.) Twice yearly monitoring by Public Works (in June and October) of average daily traffic at 12 locations identified in the Keith Higgins report in Carmel Valley on Carmel Valley Road, Carmel Rancho Boulevard and Rio Road.

b.) A yearly evaluation report (December) prepared jointly by the Public Works and Planning Departments to indicate segments approaching a traffic volume which would lower existing level service and which would compare average daily traffic (ADT) counts with service volumes for levels of service.

c.) Public hearings to be held in January immediately following a December report in (b) above in which only 100 or less ADT remain before a lower level of service would be reached for any of the 12 segments described on figure B-1 of EIR 85-002 on the Carmel Valley Master Plan.

d.) With respect to those 12 identified road segments that are at level of service (LOS) C or below, approval of development will be deferred if the approval would significantly impact roads in [t]he Carmel Valley Master Plan area which are at level of service (LOS) C or below unless and until an EIR is prepared which includes mitigation measures necessary to raise the LOS to an acceptable level and appropriate findings as permitted by law are made which may include a statement of overriding considerations. For purposes of this policy, “acceptable level” shall mean, at a minimum, baseline LOS as contained in the Carmel Valley Master Plan EIR. To defer

approval if there is significant impact means that, at a minimum, the County will not approve development without such an EIR where the traffic created by the development would impact the level of service along any segment of Carmel Valley Road (as defined in the Keith Higgins Traffic Report which is part of the Environmental Impact Report (EIR) for the Carmel Valley Master Plan "CVMP") to the point where the level of service would fall to the next lower level. As for those road segments which are at LOS C, D and E, this would, at a minimum, occur when the LOS F, this would occur when it would cause a significant impact and worsening of traffic conditions as compared with the present condition. Specific findings will be made with each project and may depend on the type and location of any proposed development. Cumulative traffic impacts from development in areas outside the CVMP area must be considered and will cause the same result as development within the plan area.

This policy establishes the roadway segment standard as LOS C, except for those segments that were LOS D or lower as of the time of the traffic study for the 1986 EIR on CVMP. According to the 1986 study (CVMP Traffic Analysis, Keith B. Higgins), the baseline LOS along Carmel Valley Road is as follows (LOS standards are noted applying the CVMP policy noted above in parentheses):

- Holman Road to Ford Road (Segments 2 and 3)—Operated at LOS C or better in 1986 (standard of LOS C)
- Ford Road to Rancho San Carlos Road (Segments 4, 5, 6, and 7)—Operated at LOS D in 1986 (standard of LOS D)
- Rancho San Carlos Road to Carmel Ranch Boulevard (Segments 8 and 9)—Operated at LOS C or better in 1986 (standard of LOS C)
- Carmel Rancho Boulevard and SR1 (Segment 10)—This portion of Carmel Valley Road operated at LOS E in 1986 (standard of LOS E).

Criteria for Determining Significance

The State CEQA Guidelines, applicable local plans and policies, the Association of Monterey Bay Area Governments' (AMBAG) land use assumptions, and available information regarding assumed buildout of the CVMP were used to evaluate the impacts on transportation and circulation resulting from the proposed program. A more detailed transportation and circulation impact analysis would be required during development of plans for individual specific projects. The proposed program would be considered significant under the following conditions:

A. Intersection Operations

Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in

either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections). An acceptable level of service is LOS C for signalized intersections and LOS E for unsignalized intersections.

B. Roadway Segment LOS

Exceed, either individually or cumulatively, the LOS standard established by the County for designated roads or highways.

This criteria is applied as follows:

- Holman Road to Ford Road (Segments 2 and 3)— LOS C
- Ford Road to Rancho San Carlos Road (Segments 4, 5, 6, and 7)— LOS D
- Rancho San Carlos Road to Carmel Ranch Boulevard (Segments 8 and 9)— LOS C
- Carmel Rancho Boulevard and SR1 (Segment 10)— LOS E.

C. Roadway Hazards and Emergency Access

Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) and/or result in inadequate emergency access.

D. Parking Capacity

Result in inadequate parking capacity.

E. Alternative Transportation Plans and Policies

Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

Impacts and Mitigation Measures

A. Intersection Operations

Impact T-1: Substantial Increase in Traffic at Project Intersections Relative to the Existing Traffic Load and Capacity (Less Than Significant)

With existing and proposed development under the CVMP, there would be an expected increase in vehicular traffic on roadways due to growth within and

outside of Carmel Valley. The intersections and their corresponding levels of service under the proposed transportation improvements are presented in Table 3.7-6. The forecasting methodology for 2030 conditions are presented in Appendix F.

Table 3.7-6. Proposed Program—2030 LOS Summary

#	Intersection Name	A.M. Peak			P.M. Peak		
		Avg. Delay	LOS[1] (2030)	LOS[1] (2005)	Avg. Delay	LOS[1] (2030)	LOS[1] (2005)
1	Highway One & Carmel Valley Road	23.8	C	B	26.4	C	C
2	Carmel Rancho Boulevard & Carmel Valley Road	19.6	B	B	33.5	C	C
3	Highway One & Rio Road	29.8	C	C	38.0	D	C
4	Crossroads Driveway & Rio Road	9.2	A	A	10.5	B	B
5	Carmel Center Place & Rio Road	5.6	A	A	7.9	A	A
6	Carmel Rancho Boulevard & Rio Road[2]	10.1	B	A	14.4	B	B
7	Laureles Grade & Carmel Valley Road[2]	15.6	C	E	10.1	C	F

Source: DKS Associates, July 2007.

Average Delay in seconds per vehicle.

[1] LOS: Level of Service.

[2] Unsignalized Intersections, Delay is Worst Approach Delay In seconds per vehicle.

The proposed improvements under the program assume implementation of a partial grade separation improvement of the southbound left turn movement at the unsignalized intersection of Laureles Grade and Carmel Valley Road. With implementation of the proposed roadway improvements, all study intersections would operate at acceptable levels of service with the exception of Highway 1 and Rio Road.

At Highway One/Rio Road, the intersection would continue to operate at LOS C in the A.M. peak hour, but without improvement, would decline from an existing LOS C to LOS D in the P.M peak hour. The Transportation Agency for Monterey County (TAMC) is planning an improvement to the Highway One/Rio Road intersection that is expected to take place before projected CVMP buildout. The planned improvement includes an additional lane on Highway One northbound from this intersection and additional turning lanes. Traffic evaluation of this proposed improvement has not been completed yet, it is likely that the improvement will result in acceptable levels of service. This improvement is included as part of the Highway 1 Carmel Area Operational Improvements in the

TAMC Regional Fee Program (Source: Draft TAMC Regional Traffic Impact Fee Project Information, 9/29/2003 and Monterey County Public Works Department).

The Capital Improvement Program (CIP) in the 1991 EIR includes projects that have not been initiated, which includes a proposed extension of Rio Road. However, this extension would not be necessary since diversion of traffic from Rio Road towards Highway 1 would not be required to improve LOS to acceptable levels in existing or future traffic conditions. These impacts are considered **less-than-significant**.

B. Roadway Segment LOS

Impact T-2: Violation (Cumulatively) of the LOS Standard Established by County for Segment 3 - Esquiline Road to Ford Road (Significant and Unavoidable)

Without the program, growth within and outside the CVMP area would result in a lowering of the level of service by 2030 along four study area roadway segments below the established LOS standards:

- Esquiline Road to Ford Road (Segment 3) – This segment would operate at LOS D in both the A.M. and P.M. peak hour.
- Robinson Canyon Road to Laureles Grade (Segment 5) – This segment would operate at LOS E in the A.M and P.M. peak period.
- Schulte Road to Robinson Canyon Road (Segment 6) – This segment would operate at LOS E in both the A.M. and P.M. peak period.
- Rancho San Carlos Road to Schulte Road (Segment 7) –This segment would operate at LOS E in both the A.M. and P.M. peak period.

The proposed program would incorporate CIP and additional improvements along three of the deficient roadway segments; however, none of these improvements would help improve the deficient levels of service along Segment 3:

- Esquiline Road to Ford Road (Segment 3) – This segment would operate at LOS D in both the A.M. and P.M. peak hour with or without the program.
- Robinson Canyon Road to Laureles Grade (Segment 5) – This segment would operate at LOS D in the A.M and P. M. peak period.
- Schulte Road to Robinson Canyon Road (Segment 6) – This segment would operate at LOS D in both the A.M. and P.M. peak period.
- Rancho San Carlos Road to Schulte Road (Segment 7) – This segment would operate at LOS D in both the A.M. and P.M. peak period.

The roadway segment from Esquiline Road to Ford Road (Segment 3), which travels through the Carmel Valley Village, would require different mitigation other than proposed under the CIP to improve deficient LOS. The CIP lists an

extended left-turn pocket lane along Carmel Valley Road in the Carmel Valley Village area. Exclusive left-turn pocket lanes and medians would have a positive effect on the average travel speed of the segment but would not affect the LOS because the LOS is based upon roadway volumes. Passing lanes would improve the LOS from LOS D to LOS B in both the A.M. and P.M. peak hours; however, passing lanes in the 25 mph-designated zone in the Carmel Valley Village would create safety hazards for left-turns and is considered infeasible. Thus, improvement through the Carmel Valley Village along Carmel Valley Road would likely require a 4-lane facility to allow through traffic as well as local access. This widening would change the character of the Village, would create potential conflicts with pedestrian road crossings, would require right-of-way access, and may require removal of buildings and or trees that would change the character of the Village. Thus a 4-lane facility is not considered to be compatible with the CVMP goals and policies, and this mitigation is not recommended.

Another potential mitigation approach would be to route Carmel Valley Road through traffic along side streets such as Via Contenta Drive and/or Ford Road. While technically feasible, this would result in increased traffic through residential side streets that would create land use incompatibilities and thus the mitigation is not recommended.

Instead of physical improvements, it may be more appropriate given the character of the Village area, to change the LOS standard for roadway Segment 3 from LOS C to LOS D. While a lower standard, such a standard would be consistent with the existing standard for the segments of Carmel Valley Road heading westward (Segments 4, 5, 6, and 7) which are all LOS D.

Since no feasible mitigation measures have been identified to improve the LOS for Segment 3 to the currently acceptable level, unless the County finds that physical improvements (such as Carmel Valley Road widening or routing of through traffic on side roads) are consistent with CVMP goals and policies, this impact is considered **significant and unavoidable**.

C. Roadway Hazards and Emergency Access

Impact T-3: Potential Alteration of Present Patterns of Vehicular Circulation, Increased Traffic Delay, and Increased Roadway Hazards During Construction of Specific Projects (Less than Significant with Mitigation)

Construction of specific projects under the proposed program could involve shoulder widening, addition of passing lanes, construction of a grade separation at Laureles Grade and Carmel Valley Road, new turnouts, intersection signalization activities, bike lane upgrades, and other safety improvements. Consequently, construction activities could result in lane or road closures, detours, closure of bikeway facilities, and addition of construction trucks and equipment on the surrounding roadway system, which could affect the normal vehicular circulation patterns, cause temporary traffic delays, and/or result in introduction of roadway hazards leading to decreased mobility of emergency

access vehicles in the program area. These impacts are considered significant, however, implementation of **Mitigation Measure T-3.1** would reduce these impacts to a **less-than-significant** level.

Mitigation Measure T-3.1: Develop and Implement a Traffic Control Plan

The County or its designated contractor shall develop a traffic control plan for individual construction projects under the Traffic Improvement Program. The plan(s) should identify but not be limited to, emergency vehicle access routes, temporary lane closures, anticipated traffic delay timing and locations, and any construction staging areas within or adjacent to existing rights-of-way. Project contractors should submit the plan(s) for approval by all appropriate County departments at least 30 working days before work begins.

D. Parking Capacity

Impact T-4: Cause Inadequate Parking Capacity (Less than Significant)

The proposed program does not include provision for parking lots or facilities, or alterations to existing facilities. Construction activities within developed areas could potentially use existing lots or facilities for equipment storage or staging; however, such activities would be short-term and construction related. Therefore, this impact is considered **less-than-significant**.

E. Alternative Transportation Plans and Policies

Impact T-5: Conflict with Alternative Transportation Plans and Policies (No Impact)

The proposed program includes upgrading all new traffic improvements within the Carmel Valley Road corridor to Class 2 Bike Lanes. This action would support alternative transportation in the program area. Therefore, the proposed program would not conflict with adopted policies, plans, or programs supporting alternative transportation within the program area and there is **no impact**.

Section 3.8
Air Quality

Introduction

This section addresses air quality impacts associated with the construction and operation of the proposed roadway improvements. Cumulative air quality impacts associated with growth projected in the CVMP area are also evaluated.

This section includes a discussion of existing conditions, a summary of local policies and regulations related to air quality, an analysis of air quality impacts related to the proposed program, and cumulative growth impacts per the CVMP. Where significant impacts are identified, mitigation measures are recommended, where feasible, to reduce impacts.

Methodology

Jones & Stokes reviewed the following sources of information to prepare this section.

- Benson, P. E. 1989. CALINE4—a dispersion model for predicting air pollution concentrations near roadways. California Department of Transportation. Sacramento, CA.
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- California Air Resources Board. 2005. Air Quality and Land Use Handbook: A Community Health Perspective. April.
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Additional information on air quality in Carmel Valley is provided in Appendices D and E.

Environmental Setting

This section discusses existing air quality conditions in the program area; describes pollutants of concern in the program corridor area; identifies sensitive receptors in the program area; and describes the overall regulatory framework for air quality management in California and the region, including federal and state ambient air quality standards; and describes the existing air quality regulations applicable to the program corridor. Information presented in this section is based in part on communication with the Monterey Bay Unified Air Pollution Control District (MBUAPCD).

The program area is located within the North Central Coast Air Basin (NCCAB), which includes all of Monterey, Santa Cruz, and San Benito Counties. The MBUAPCD has jurisdiction over air quality issues throughout the three-county NCCAB.

Climate and Topography

The NCCAB lies along the central coast of California covering an area of 5,159 square miles. The northwest sector of the basin is dominated by the Santa Cruz Mountains. 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 Basin. Farther south, the Santa Clara Valley evolves into the San Benito Valley, which runs northwest to 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 the northwest end to King City at the southeast 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 valley.

The semi-permanent high-pressure cell in the eastern Pacific is the basic controlling factor in the climate of the air basin. In summer, the high-pressure cell dominates, 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 cool coastal layer of air. The onshore air currents pass over cool ocean waters to bring fog and relatively cool air into the coastal valleys. The warmer air aloft acts as a lid to inhibit vertical air movement.

The generally northwest-to-southeast orientation of mountain ridges tends to restrict and channel the summer onshore air currents. Surface heating in the interior of the Salinas and San Benito Valleys creates a weak low pressure, which intensifies the onshore airflow during the afternoon and evening.

In fall, the surface winds become weak and the marine layer grows shallow, dissipating altogether on some days. The airflow 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 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.

During winter, the Pacific High migrates southward and exerts less influence on the air basin. 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 basin as a whole in winter and early spring.

According to data recorded by the Monterey station, the program area experiences moderate temperatures and humidities. Temperatures average 58 degrees Fahrenheit (F) annually. Summer afternoon high temperatures average 61 degrees F, decreasing to an average 50 degrees F overnight. Winter temperatures average 56 degrees F in the daytime, and 43 degrees F in the nighttime. Temperatures above 70 degrees F, or below 40 degrees F, occur only in unusual weather conditions. Because of the moderating marine influence, which decreases with distance from the ocean, monthly and annual spreads between temperatures are greatest inland and smallest at the coast. Temperature has an important influence on basin wind flow, dispersion along mountain ridges, vertical mixing, and photochemistry.

According to data recorded from the Monterey station, precipitation is highly variable seasonally. Rainfall in the Monterey area averages 25.5 inches annually. Summers are often completely dry, with frequent periods of no rain through the early fall. Annual rainfall is lowest in the coastal plain and inland valleys, higher in the foothills, and highest in the mountains.

Criteria Pollutants

The federal and state governments have established ambient air quality standards (AAQS) for the following six criteria pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (particulate matter 10 microns or less in diameter [PM10] and particulate matter 2.5 microns or less in diameter [PM2.5]), and lead. Ozone, NO_2, and particulate matter are generally considered to be regional pollutants, as these pollutants or their precursors affect air quality on a regional scale. Pollutants such as CO, SO_2, lead, and particulate matter are considered to be local pollutants that tend to

accumulate in the air locally. Particulate matter is considered to be a localized pollutant as well as a regional pollutant. In the program corridor area, CO, PM10, and ozone are of particular concern. Toxic air contaminants (TACs) are also discussed below, although no state or federal ambient air quality standards exist for these pollutants. Brief descriptions of these pollutants are provided below, while a complete summary of state and national AAQS is provided in Table 3.8-1.

Ozone

Ozone is a respiratory irritant that increases susceptibility to respiratory infections. It is also an oxidant that can cause substantial damage to vegetation and other materials. Ozone is a severe eye, nose, and throat irritant. Ozone also attacks synthetic rubber, textiles, plants, and other materials. Ozone cause causes extensive damage to plants by leaf discoloration and cell damage.

Ozone is not emitted directly into the air, but is formed by a photochemical reaction in the atmosphere. Ozone precursors—reactive organic gases (ROG) and oxides of nitrogen (NO_x)—react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. The ozone precursors, ROG and NO_X, are mainly emitted by mobile sources and by stationary combustion equipment.

State and federal standards for ozone have been set for an 8-hour averaging time. The state 8-hour standard is 0.07 parts per million (ppm), not to be exceeded, while the federal 8-hour standard is 0.08 ppm, not to be exceeded more than three times in any 3-year period. The state has established a 1-hour ozone standard of 0.09 ppm, not to be exceeded, while the federal 1-hour ozone standard of 0.12 ppm has recently been replaced by the 8-hour standard. State and federal standards are summarized in Table 3.8-1.

Carbon Monoxide

Carbon monoxide is essentially inert to plants and materials but can have significant effects on human health. Carbon monoxide is a public health concern because it combines readily with hemoglobin and reduces the amount of oxygen transported in the bloodstream. Carbon monoxide can cause health problems such as fatigue, headache, confusion, dizziness, and even death.

Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

Table 3.8-1. Ambient Air Quality Standards Applicable in California

Pollutant	Symbol	Average Time	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria	
			California	National	California	National	California	National
Ozone*	O_3	1 hour	0.09	NA	180	NA	If exceeded	NA
		8 hours	0.070	0.08	137	157	If exceeded	If fourth highest 8-hour concentration in a year, averaged over 3 years, is exceeded at each monitor within an area
Carbon monoxide	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year
(Lake Tahoe only)		8 hours	6	NA	7,000	NA	If equaled or exceeded	NA
Nitrogen dioxide	NO_2	Annual average	NA	0.053	NA	100	NA	If exceeded on more than 1 day per year
		1 hour	0.25	NA	470	NA	If exceeded	NA
Sulfur dioxide	SO_2	Annual average	NA	0.03	NA	80	NA	If exceeded
		24 hours	0.04	0.14	105	365	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.25	NA	655	NA	If exceeded	NA
Hydrogen sulfide	H_2S	1 hour	0.03	NA	42	NA	If equaled or exceeded	NA
Vinyl chloride	C_2H_3Cl	24 hours	0.01	NA	26	NA	If equaled or exceeded	NA
Inhalable particulate matter	PM10	Annual arithmetic mean	NA	NA	20	50	NA	If exceeded at each monitor within area
		24 hours	NA	NA	50	150	If exceeded	If exceeded on more than 1 day per year
	PM2.5	Annual arithmetic mean	NA	NA	12	15	NA	If 3-year average from single or multiple community-oriented monitors is exceeded
		24 hours	NA	NA	NA	65	NA	If 3-year average of 98^{th} percentile at each population-oriented monitor within an area is exceeded

Table 3.8-1. Continued

Pollutant	Symbol	Average Time	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria	
			California	National	California	National	California	National
Sulfate particles	SO_4	24 hours	NA	NA	25	NA	If equaled or exceeded	NA
Lead particles	Pb	Calendar quarter	NA	NA	NA	1.5	NA	If exceeded no more than 1 day per year
		30-day average	NA	NA	1.5	NA	If equaled or exceeded	NA

Notes: All standards are based on measurements at 25ºC and 1 atmosphere pressure.
National standards shown are the primary (health effects) standards.
NA = not applicable.

* The U.S. Environmental Protection Agency recently replaced the 1-hour ozone standard with an 8-hour standard of 0.08 part per million. EPA issued a final rule that revoked the 1-hour standard on June 15, 2005. However, the California 1-hour ozone standard will remain in effect.

Source: ARB 2006c.

State and federal CO standards have been set for both 1-hour and 8-hour averaging times. The state 1-hour standard is 20 ppm by volume, and the federal 1-hour standard is 35 ppm. Both state and federal standards are 9 ppm for the 8-hour averaging period. State and federal standards are summarized in Table 3.8-1.

Inhalable Particulates

Particulates can damage human health and retard plant growth. Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled. Particulates also reduce visibility and corrode materials. Particulate emissions are generated by a wide variety of sources, including agricultural activities, industrial emissions, dust suspended by vehicle traffic and construction equipment, and secondary aerosols formed by reactions in the atmosphere.

The federal and state ambient air quality standard for particulate matter applies to two classes of particulates: PM10 and PM2.5. The state PM10 standards are 50 micrograms per cubic meter (μ/m^3) as a 24-hour average and 20 μ/m^3 as an annual geometric mean. The federal PM10 standards are 150 μ/m^3 as a 24-hour average and 50 μ/m^3 as an annual arithmetic mean. The federal PM2.5 standards are 15 μ/m^3 for the annual average and 65 μ/m^3 for the 24-hour average. The State PM2.5 standard is 12 μ/m^3 as an annual geometric mean. State and federal standards are summarized in Table 3.8-1.

Toxic Air Contaminants

TACs are pollutants which may be expected to result in an increase in mortality or serious illness or which may pose a present or potential hazard to human health. Health effects include cancer, birth defects, neurological damage, damage to the body's natural defense system, and diseases which lead to death. Although ambient air quality standards exist for criteria pollutants, no standards exist for TACs.

Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or because of their acute or chronic health risks. For TACs that are known or suspected carcinogens, the California Air Resources Board (ARB) has consistently found that there are no levels or thresholds below which exposure is risk-free. Individual TACs vary greatly in the risk they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health risks, a similar factor called a Hazard Index is used to evaluate risk. In the early 1980s, the ARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Toxic Air Contaminant Identification and Control Act (Assembly Bill [AB] 1807, Tanner 1983) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588,

Connelly 1987) supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks. In October 2000, ARB has identified diesel exhaust particulate matter as a TAC.

Greenhouse Gases

Global climate change is a problem caused by combined worldwide greenhouse gas emissions, and mitigating global climate change will require worldwide solutions. Greenhouse gases (GHGs) play a critical role in the Earth's radiation budget by trapping infrared radiation emitted from the Earth's surface, which could have otherwise escaped to space. Prominent GHGs contributing to this process include water vapor, carbon dioxide (CO2), nitrous oxide (N2O) methane (CH4), ozone, and certain hydro- and fluorocarbons. This phenomenon, known as the "greenhouse effect" keeps the Earth's atmosphere near the surface warmer than it would be otherwise and allows for successful habitation by humans and other forms of life. Increases in these gases lead to more absorption of radiation and warm the lower atmosphere further, thereby increasing evaporation rates and temperatures near the surface. Emissions of GHGs in excess of natural ambient concentrations are thought to be responsible for the enhancement of the greenhouse effect and to contribute to what is termed "global warming", a trend of unnatural warming of the Earth's natural climate. Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants (such as ozone precursors) and TACs, which are pollutants of regional and local concern.

The Intergovernmental Panel on Climate Change (IPCC) has been established by the World Meteorological Organization and United Nations Environment Programme to assess scientific, technical and socio- economic information relevant for the understanding of climate change, its potential impacts and options for adaptation and mitigation. The IPCC predicts substantial increases in temperatures globally of between 1.1 to 6.4 degrees Celsius (depending on scenario) (IPCC 2007a).

Climate change could impact the natural environment in California in the following ways, among others:

- Rising sea levels along the California coastline, particularly in San Francisco and the San Joaquin Delta due to ocean expansion;
- Extreme-heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;
- An increase in heat-related human deaths, infection diseases and a higher risk of respiratory problems caused by deteriorating air quality;
- Reduced snow pack and stream flow in the Sierra Nevada mountains, affecting winter recreation and water supplies;
- Potential increase in the severity of winter storms, affecting peak stream flows and flooding;

- Changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield;
- Changes in distribution of plant and wildlife species due to changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

These changes in California's climate and ecosystems are occurring at a time when California's population is expected to increase from 34 million to 59 million by the year 2040 (California Energy Commission [CEC] 2005).

As such, the number of people potentially affected by climate change as well as the amount of anthropogenic GHG emissions expected under a "business as usual" scenario are expected to increase. Similar changes as those noted above for California would also occur in other parts of the world with regional variations in resources affected and vulnerability to adverse effects.

GHG emissions in California are attributable to human activities associated with industrial/manufacturing, utilities, transportation, residential, and agricultural sectors (CEC 2006) as well as natural processes. Worldwide, California is the 12th to 16th largest emitter of CO2 (California Energy Commission [CEC] 2006), and is responsible for approximately 2 percent of the world's CO2 emissions (CEC 2006)).

Transportation is responsible for 41 percent of the state's GHG emissions, followed by the industrial sector (23%), electricity generation (20%), agriculture and forestry (8%) and other sources (8%) (CEC 2006). Emissions of carbon dioxide and nitrous oxide are byproducts of fossil fuel combustion, among other sources. Methane, a highly potent GHG, results from off-gassing associated with agricultural practices and landfills, among other sources. Sinks of carbon dioxide include uptake by vegetation and dissolution into the ocean. California GHG emissions in 2002 totaled approximately 491 MMT-CO2 eq.

No inventory of emissions has been completed to date for Monterey County or for the CVMP. However, existing carbon dioxide emissions were estimated based on vehicle miles traveled from the traffic study traffic model (see Table 3.8-6 below). Based on daily vehicle-miles traveled currently in the CVMP area (within the model area), daily carbon dioxide emissions were estimated as approximately 107 metric tons.

Other sources of greenhouse gas emissions in the CVMP area include (but are not limited to): offroad vehicles and equipment (construction, agriculture, water pumps, etc.; electricity consumption (resulting in indirect emissions at electricity generation locations); natural gas consumption (for heating and other uses); industrial processes; release of certain commercial and vehicle refrigerants; methane from landfill activity (indirect contributions due to waste disposal); and loss of carbon sinks (like forests that absorb carbon dioxide) due to conversion.

Existing Air Quality Conditions

Air Quality Monitoring Data

Existing air quality conditions in the program area can be characterized in terms of the ambient air quality standards that the federal and state governments have established for various pollutants (Table 3.8-1) and by monitoring data collected in the region. Monitoring data concentrations are typically expressed in terms of ppm or $\mu g/m^3$. The nearest air quality monitoring station to the program area is the Carmel Valley Ford Road monitoring station, located at 34 Ford Road in Carmel Valley. The Carmel Valley monitoring station monitors for ozone and PM10. In addition, CO is monitored at the Salinas monitoring station, which is the only monitoring station in Monterey County that monitors CO. Air quality monitoring data from the Carmel Valley and Salinas monitoring stations is summarized in Table 3.8-2. This data represents air quality monitoring data for the last three years (2004-2006) in which complete data is available. As indicated in Table 3.8-2, the Carmel Valley monitoring station has experienced no violations of the ozone and PM10 standards, while the Salinas monitoring station has experienced no violations of the CO standards during the last three years in which complete data is available (2003-2005).

Monterey County Federal and State Attainment Status

If monitored pollutant concentrations meet state or federal standards over a designated period of time, the area is classified as being in attainment for that pollutant. If monitored pollutant concentrations violate the standards, the area is considered a nonattainment area for that pollutant. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated unclassified.

The U.S. Environmental Protection Agency (EPA) has classified Monterey County as a moderate nonattainment area for the 1-hour ozone standard and an unclassified/attainment area for the 8-hour ozone, CO, PM10, and PM2.5 standards. The ARB has classified Monterey County as a moderate nonattainment area for the 1-hour ozone standard. For the CO standard, the ARB has classified Monterey County as an attainment area. The ARB has classified the County as a nonattainment area for the PM10 standard and an attainment area for the PM2.5 standard. Monterey County's attainment status for each of these pollutants relative to the NAAQS and CAAQS is summarized in Table 3.8-3.

Table 3.8-2. Ambient Air Quality Monitoring Data Measured at the Carmel Valley Monitoring Station

Pollutant Standards	2003	2004	2005
Ozone			
Maximum 1-hour concentration (ppm)	0.082	0.093	0.073
Maximum 8-hour concentration (ppm)	0.074	0.079	0.065
Number of days standard exceeded[a]			
NAAQS 1-hour (>0.12 ppm)	0	0	0
CAAQS 1-hour (>0.09 ppm)	0	0	0
NAAQS 8-hour (>0.08 ppm)	0	0	0
Particulate Matter (PM10)[b]			
National[c] maximum 24-hour concentration ($\mu g/m^3$)	35.0	31.0	23.0
National[c] second-highest 24-hour concentration ($\mu g/m^3$)	31.0	23.0	22.0
State[d] maximum 24-hour concentration ($\mu g/m^3$)	35.0	33.0	24.0
State[d] second-highest 24-hour concentration ($\mu g/m^3$)	32.0	23.0	23.0
National annual average concentration ($\mu g/m^3$)	12.8	11.7	11.3
State annual average concentration ($\mu g/m^3$)[e]	13.0	–	11.9
Number of days standard exceeded[a]			
NAAQS 24-hour (>150 $\mu g/m^3$)[f]	0	0	0
CAAQS 24-hour (>50 $\mu g/m^3$)[f]	0	0	0

Notes: CAAQS = California ambient air quality standards.
NAAQS = national ambient air quality standards.
– = insufficient data available to determine the value.

[a] An exceedance is not necessarily a violation.

[b] Measurements usually are collected every six days.

[c] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

[d] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, State statistics are based on California approved samplers.

[e] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

[f] Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored.

Sources: California Air Resources Board 2006b.

Table 3.8-3. Monterey County Attainment Status for State and Federal Standards

Pollutant	Federal	State
1-hour O_3	Moderate maintenance[1]	Moderate nonattainment
8-hour O_3	Unclassified/attainment	NA_2
CO	Unclassified/attainment	Attainment
PM10	Unclassified/attainment	Nonattainment
PM2.5	Unclassified/attainment	Attainment

Notes:
1 Previously in non-attainment area, no longer subject to the 1-hour standard as of June 15, 2005.
2 The Air Resources Board approved the 8-hour ozone standard on April 28, 2005, and it became effective on May 17, 2006. However, the ARB has not yet designated areas for this standard.

Sensitive Receptors

The MBUAPCD generally defines a sensitive receptor as a location where human populations, especially children, seniors, and sick persons, are located where there is reasonable expectation of continuous human exposure according to the averaging period for the AAQS (e.g., 24-hour, 8-hour, 1-hour). Sensitive receptors typically include residences, hospitals, and schools. Sensitive receptors in the program vicinity include (but are not limited to): residences located along Carmel Valley Road, Carmel Valley Community Chapel, Tularcitos Elementary School, Carmel Valley High School, Saint Dunstans Church, Carmelo School, First Baptist Church, All Saints Episcopal Church, Community Church of Monterey, and Carmel Middle School.

Regulatory Setting

This section discusses the local, state, and federal policies and regulations that are relevant to the analysis of air quality in Monterey County.

The air quality management agencies of direct importance in Monterey County include the EPA, ARB, and MBUAPCD. The EPA has established federal standards for which the ARB and MBUAPCD have primary implementation responsibility. The ARB and MBUAPCD are responsible for ensuring that state standards are met. The MBUAPCD is responsible for implementing strategies for air quality improvement and recommending mitigation measures for new growth and development. At the local level, air quality is managed through land use and development planning practices and measures addressing air quality are implemented in Monterey County through the general planning process. The MBUAPCD is also responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws.

Federal and State Ambient Air Quality Standards

California and the federal government have established standards for several different pollutants. For some pollutants, separate standards have been set for different measurement periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). The pollutants of greatest concern in the program area are CO, ozone, PM 2.5 and PM10, which are inhalable. State and federal standards for a variety of pollutants are summarized in Table 3.8-1.

Federal Regulations

The federal Clean Air Act (CAA), enacted in 1963 and amended several times thereafter (including the 1990 amendments), establishes the framework for modern air pollution control. The CAA directs the EPA to establish ambient air standards for six pollutants: ozone, CO, lead, nitrogen dioxide, particulate matter, and sulfur dioxide. The standards are divided into primary and secondary standards. Primary standards are designed to protect human health, including the health of "sensitive" populations such as asthmatics, children, and the elderly, within an adequate margin of safety. Secondary standards are designed to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

The primary legislation that governs federal air quality regulations is the Clean Air Act Amendments of 1990 (CAAA). The CAAA delegates primary responsibility for clean air to the EPA. The EPA develops rules and regulations to preserve and improve air quality, as well as delegating specific responsibilities to state and local agencies.

The CAA requires states to submit a state implementation plan (SIP) for areas in nonattainment for federal standards. In California, the EPA has delegated authority to prepare SIPs to the ARB, which, in turn, has delegated that authority to individual air districts. The SIP, which is reviewed and approved by the EPA, must demonstrate how the federal standards will be achieved. Failing to submit a plan or secure approval could lead to denial of federal funding and permits. In cases where the SIP is submitted by the state but fails to demonstrate achievement of the standards, the EPA is directed to prepare a federal implementation plan.

State Regulations

Responsibility for achieving California's air quality standards, which are more stringent than federal standards, is placed on the ARB and local air districts, and is to be achieved through district-level air quality management plans.

The ARB has traditionally established state air quality standards, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and approving state implementation plans.

Responsibilities of air districts include overseeing stationary source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality–related sections of environmental documents required by CEQA.

The California CAA of 1988 substantially added to the authority and responsibilities of air districts. The California CAA designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures. The California CAA focuses on attainment of the state ambient air quality standards, which, for certain pollutants and averaging periods, are more stringent than the comparable federal standards.

The California CAA requires designation of attainment and nonattainment areas with respect to state ambient air quality standards. The California CAA also requires that local and regional air districts expeditiously adopt and prepare an air quality attainment plan if the district violates state air quality standards for carbon monoxide, sulfur dioxide, nitrogen dioxide, or ozone. These Clean Air Plans are specifically designed to attain these standards and must be designed to achieve an annual five percent reduction in district-wide emissions of each nonattainment pollutant or its precursors. Where an air district is unable to achieve a 5% annual reduction in district-wide emissions of each nonattainment pollutant or its precursors, the adoption of "all feasible measures" on an expeditious schedule is acceptable as an alternative strategy (Health and Safety Code Section 40914(b)(2)). No locally prepared attainment plans are required for areas that violate the state PM10 standards.

The California CAA requires that the state air quality standards be met as expeditiously as practicable but, unlike the federal CAA, does not set precise attainment deadlines. Instead, the act established increasingly stringent requirements for areas that will require more time to achieve the standards.

The ARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) provides ARB recommendations for the siting of new sensitive land uses (including residences) near freeways, distribution centers, ports, refineries, chrome plating facilities, dry cleaners, and gasoline stations. The handbook recommends that new development be placed at distances from such facilities.

Local Regulations

At the local level, the MBUAPCD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and

state air quality laws. Air quality is also managed through land use and development planning practices. The MBUAPCD has adopted emission thresholds to determine the level of significance of a project's emissions.

The District adopted an *Air Quality Management Plan* (AQMP) in 1991 and 1994 to address attainment of the state air quality standards, and recently updated this plan in 2000. The 1991 and 1994 AQMPs relied on implementation of Trip Reduction Ordinances to meet requirements. More recently, mandatory Trip Reduction Ordinances are prohibited by State law and can no longer be used to meet requirements. The ARB indicates that a 20% reduction in 1987 ROG and NO_x was needed by 1997 to meet the ozone standard. ROG emissions have been reduced by 36% and NO_x emissions by 26% in this ten-year period in the region. Based on existing and projected air quality and recommendations of the ARB, the 2000 AQMP recommends adoption of the Suggested Architectural Coatings Control Measure. Additionally, the Plan recommends the inclusion of the Carl Moyer Memorial Air Quality Standards Attainment Program and enhanced enforcement of the District's Phase II Vapor Recovery rule as control measures.

Projects directly related to population growth (i.e., residential projects) have been forecast in the AQMP using population forecasts adopted by AMBAG. In general, population-related projects that are consistent with these forecasts are consistent with the AQMP since emissions for projects have been accounted for in the Plan and mitigated on a regional level through implementation of control measures identified in the Plan. Thus, a proposed project that is consistent with the AQMP would have insignificant impacts on air quality in the District. Exceptions are those projects that would generate more than 150 pounds per day of reactive organic gases or oxides of nitrogen (ozone precursors), as specified in the AQMP.

Climate Change

The current regulatory setting related to climate change and GHG emissions is summarized below.

Federal Regulations

Twelve U.S. states and cities (including California), in conjunction with several environmental organizations, sued to force the U.S. Environmental Protection Agency (EPA) to regulate GHGs as a pollutant pursuant to the Clean Air Act (Massachusetts vs. Environmental Protection Agency et al. [U.S. Supreme Court No. 05–1120. Argued November 29, 2006—Decided April 2, 2007). The court ruled that the plaintiffs had standing to sue, that GHGs fit within the CAA's definition of a pollutant, and that the EPA's reasons for not regulating GHGs were insufficiently grounded in the CAA.

Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting greenhouse gas emissions.

State Regulations

California Executive Order S-3-05 established the following greenhouse gas emission reduction targets for California:

- by 2010, reduce GHG emissions to 2000 levels;
- by 2020, reduce GHG emissions to 1990 levels; and
- by 2050, reduce GHG emissions to 80 percent below 1990 levels.

California Assembly Bill (AB) 1493 required ARB to develop and adopt the nation's first greenhouse gas emission standards for automobiles. The legislature declared in AB 1493 that global warming was a matter of increasing concern for public health and environment in the state. It cited several risks that California faces from climate change, including reduction in the state's water supply, increased air pollution creation by higher temperatures, harm to agriculture, and increase in wildfires, damage to the coastline, and economic losses caused by higher food, water energy, and insurance prices. Further the legislature stated that technological solutions to reduce greenhouse gas emissions would stimulate California economy and provide jobs.

California Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, codifies the State's GHG emissions target by requiring the State's global warming emissions be reduced to 1990 levels by 2020 and directs ARB to enforce the statewide cap that would begin phasing in by 2012. AB 32 was signed and passed into law by Governor Arnold Schwarzenegger on September 27, 2006. Key AB-32 milestones are as follows:

- June 30, 2007 – Identification of "discrete early action greenhouse gas emissions reduction measures.
- January 1, 2008 – Identification of the 1990 baseline GHG emissions level and approval of a statewide limit equivalent to that level. Adoption of reporting and verification requirements concerning GHG emissions.
- January 1, 2009 – Adoption of a scoping plan for achieving GHG emission reductions.
- January 1, 2010 – Adoption and enforcement of regulations to implement the "discrete" actions.
- January 1 1011 – Adoption of GHG emission limits and reduction measures by regulation.
- January 1, 2012 – GHG emission limits and reduction measures adopted in 2011 become enforceable.

CARB identified early actions in its April 20, 2007 report:

- Group 1 - Three new GHG-only regulations are proposed to meet the narrow legal definition of "discrete early action greenhouse gas reduction measures" in Section 38560.5 of the Health and Safety Code. These include the Governor's Low Carbon Fuel Standard, reduction of refrigerant losses from

motor vehicle air conditioning maintenance, and increased methane capture from landfills. These actions are estimated to reduce GHG emissions between 13 and 26 Million Metric tons of carbon dioxide equivalent (MMT-CO2 eq) annually by 2020 relative to projected levels. If approved for listing by the Governing Board, these measures will be brought to hearing in the next 12 to 18 months and take legal effect by January 1, 2010. When these actions take effect, they would influence GHG emissions associated with vehicle fuel combustion and air conditioning, but would not affect project site design or implementation otherwise. Thus, the project is consistent with these measures.

- Group 2 - ARB is initiating work on another 23 GHG emission reduction measures in the 2007-2009 time period, with rulemaking to occur as soon as possible where applicable. These GHG measures relate to the following sectors: agriculture, commercial, education, energy efficiency, fire suppression, forestry, oil and gas, and transportation.
- Group 3 - ARB staff has identified 10 conventional air pollution control measures that are scheduled for rulemaking in the 2007-2009 period. These control measures are aimed at criteria and toxic air pollutants, but will have concurrent climate co-benefits through reductions in CO2 or non-Kyoto pollutants (i.e., diesel particulate matter, other light-absorbing compounds and/or ozone precursors) that contribute to global warming.

Proposed Groups 2 and 3 measures that could become effective during implementation of the proposed program and could pertain to transportation include the following:

- Measure 2-6, Education: Guidance/protocols for local governments to facilitate GHG emission reductions.
- Measures 2-13, 2-14, 2-20, 3-2, 3-4, Transportation: Emission reductions for light-duty vehicles, heavy-duty vehicles, tire inflation program, and reductions for onroad diesel trucks and off-road diesel equipment (non-agricultural).

These measures have not yet been adopted. Some proposed measures will require new legislation to implement, some will require subsidies, some have already been developed, and some will require additional effort to evaluate and quantify. Applicable early action measures that are ultimately adopted from Groups 2 and 3 will become effective during implementation of the projects within the CVMP area which might be subject to these requirements, depending on their timing. There are no specific early action measures related to residential uses.

Local Regulations

The Monterey Bay Unified Air Pollution Control District presently has no guidance concerning CEQA evaluation of greenhouse gas emissions and no regulatory requirements.

Criteria for Determining Significance

In accordance with CEQA, State CEQA Guidelines, Monterey County plans and policies, Greater Monterey Peninsula Area Plan plans and policies, Carmel Valley Master Plan plans and policies, and agency and professional standards, a project impact would be considered significant if the project would cause one or more of the following:

A. Air Quality Plan Consistency

Conflict with or obstruct implementation of the applicable air quality management plan; or violate any air quality standard or contribute substantially to an existing or projected air quality violation.

B. Long-Term Emissions

Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors) or; expose sensitive receptors to substantial pollutant concentrations.

C. Construction Emissions

Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors) or; expose sensitive receptors to substantial pollutant concentrations.

D. Odors

Create objectionable odors affecting a substantial number of people.

The State CEQA Guidelines further state that the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the determinations above. The MBUAPCD has specified significance thresholds within its CEQA Air Quality Guidelines (2004) to determine whether mitigation is needed for project-related air quality impacts. Based on consultation with MBUAPCD staff (Brennan pers. comm.) and the MBUAPCD's CEQA air quality guidelines, Table 3.8-4 summarizes applicable thresholds that are used in the analysis of significant air quality impacts.

Table 3.8-4. Monterey Bay Unified Air Pollution Control District Thresholds of Significance

Pollutant	Construction	Operation[1]
ROG	NA[2]	137 pounds per day
NO_X	NA[2]	137 pounds per day
CO	NA	550 pounds per day
PM10	82[3] pounds per day	82 pounds per day
SO_X	NA	150 pounds per day
DPM	Cancer incidence > 10 in 1 million	NA
Acrolein	Hazard Index > 1	NA

Notes:

[1] Projects that emit other criteria pollutant emissions would have a significant impact if emissions would cause or substantially contribute to the violation of State or national AAQS. Criteria pollutant emissions could also have a significant impact if they would alter air movement, moisture, temperature, climate, or create objectionable odors in substantial concentrations.

[2] The MBUAPCD does not have significance thresholds for construction-related ozone precursors from typical construction equipment because they are accommodated in the emission inventories of State- and federally-required air plans and would not have a significant impact on the attainment and maintenance of ozone AAQS.

[3] Based on the construction threshold of 82 pounds per day of PM10, the MBUAPCD has identified levels of construction activity that could result in a significant impact. For construction activities with minimal earthmoving, the MBUAPCD has identified construction sites that disturb more than 8.1 acres per day as having the potential to exceed the District's 82 pounds per day threshold. For construction activities involving grading, excavation, and other earthmoving activities, the MBUAPCD has identified construction sites that disturb more than 2.2 acres per day as having the potential to exceed the District's 82 pounds per day threshold.

Source: Monterey Bay Unified Air Pollution Control District 2004.

E. Greenhouse Gases / Climate Change

A fundamental difficulty in analysis of GHG emissions is the global nature of the existing and cumulative future conditions. Changes in GHG emissions can be difficult to attribute to a particular planning program or project because the planning effort or project may cause a shift in the locale for some types of GHG emissions, rather than causing "new" GHG emissions. Whether this represents a net global increase, reduction, or no change depends on the GHG emissions that would exist if the project were not implemented.

California has one of the lower per capita GHG emission rates in the United States, due to many factors including the relatively more urban character of the state compared to more rural states, as well as due to regulatory requirements such as building energy efficiency standards and electricity production efficiency. Thus, if a planning effort or a specific project results in residential growth in a particular part of California, and the bulk of new residents are from an area with higher per capita emissions, there could be a net reduction in GHG emissions from a global perspective. The reverse would be true if the

displacement of growth were from an area of lower per capita GHG emissions than the receiving locale. Similar considerations would apply to other sectors of the economy such as industrial activity or commercial activity. For example, if planning, policy, or project activities were to result in displacing industrial activity from the United States to a country with far higher industrial GHG emissions (on a pro rata basis), this might be measured as a reduction of GHG emissions in the 'sending' locale (the United States), but it could be a net increase on a global scale. It is for this reason that broader assessments of effective policies to promote GHG reductions are far more likely to be able to take into account the full global context of GHG emissions than an assessment for a particular planning effort or project.

While the existing traffic-related emissions in the CVMP area were estimated as discussed above and the estimated future emissions are greater than the existing emissions, this increase is due to growth within and outside of the CVMP area. While it is likely that some of the project-related GHG emissions associated with traffic would be truly "new" emissions, it is also likely that some of the emissions would occur in other locations if residential growth in the CVMP area were slowed due to continuation of the subdivision moratorium. Exactly how much diversion of residential growth occurs and from what locations makes it difficult to estimate how many traffic miles traveled are truly "new" and thus to estimate which GHG emissions are truly "new" as well.

There are further methodological problems to identify a significance threshold for greenhouse gas emissions. Under CEQA, an environmental impact report must identify and focus on the significant environmental effects of a proposed project. Significant effect on the environment means a substantial, or potentially substantial, adverse change in the environment (PRC Section 21068). CEQA further states that the CEQA guidelines shall specify certain criteria that require a finding that a project may have a significant effect on the environment. However, as of the writing of this EIR, the agencies with jurisdiction over air quality regulation and GHG emissions such as the ARB and the MBUAPCD have not established regulations, guidance, methodologies, significance thresholds, standards, or analysis protocols for the assessment of greenhouse gas emissions and climate change. Thus, the methodology to establish an appropriate baseline, to develop a project-level inventory for the program, or to evaluate the significance of GHG emission changes has not yet been established that would allow for an appropriate analysis of the impact of the program on climate change.

Impacts and Mitigation Measures

Approach and Methodology

Construction and operation activities could result in direct and indirect impacts on air quality caused by ground disturbance or vegetation clearing as part of project construction and or vehicle emissions associated with program operations. The thresholds of significance found in the State CEQA Guidelines

and MBUAPCD's CEQA Air Quality Guidelines (2004) (discussed below) were used to determine the significance of these impacts.

Construction-Related Emissions

The MBUAPCD does not require the quantification of construction-related ozone precursor (i.e., ROG or NO_X), as they are accommodated in the emission inventories of state and federally required air plans and therefore would not need to be quantified (Monterey Bay Unified Air Pollution Control District 2004). The MBUAPCD has established a construction PM10 threshold of 82 pounds per day (Table 3.8-4). Based on the construction threshold of 82 pounds per day of PM10, the MBUAPCD has identified levels of construction activity that could result in a significant impact. For construction activities with minimal earthmoving, the MBUAPCD has identified construction sites that disturb more than 8.1 acres per day as having the potential to exceed the District's 82 pounds per day threshold. For construction activities involving grading, excavation, and other earthmoving activities, the MBUAPCD has identified construction sites that disturb more than 2.2 acres per day as having the potential to exceed the District's 82 pounds per day threshold.

It is currently unknown what level of construction activities would occur with implementation of the projects included in the proposed program and where these activities would be located in relation to nearby sensitive receptors. Because this information is not known, quantification of fugitive dust emissions from construction activities is not appropriate at this time. As indicated above, construction activities of less than 8.1 acres per day (minimal earthmoving) or 2.2 acres per day (construction activities involving grading, excavation, and other earthmoving activities) are not anticipated to result in significant levels of fugitive dust emissions. However, it is anticipated that projects in excess of these levels of construction activity could result in significant levels of construction-related fugitive dust emissions. Consequently, this analysis takes the approach of specifying the appropriate control measures and limiting the levels of construction activity to ensure that emissions are effectively controlled to a less-than-significant level.

In addition, the MBUAPCD has also established health-based thresholds for construction emissions. These thresholds are identified in Table 3.8-4. Because the level and location of construction activities are currently unknown, this analysis takes the approach of specifying the appropriate control measures and limiting the levels of construction activity to ensure that health risks associated with construction emissions are effectively controlled to a less-than-significant level.

Operation-Related Emissions

The primary operational emissions associated with the program are CO, PM10, and ozone precursors emitted as vehicle exhaust. The effects of CO "hot spot"

emissions were evaluated through CO dispersion modeling, while mass emissions of CO, PM10, and ozone precursors were evaluated using the ARB's EMFAC2007 (version 2.3) emission rate program. Both models are briefly described below.

Carbon Monoxide Hot Spot Emissions. An evaluation to determine whether CO hot spots would occur at roadway intersections in the vicinity of the program area was conducted through CO dispersion modeling. The ambient air quality effects of operation-related CO emissions were evaluated using the CALINE4 dispersion model developed by the California Department of Transportation (Caltrans) (Benson 1989). CALINE4 treats each segment of a roadway as a separate emission source producing a plume of pollutants that disperses downwind. Pollutant concentrations at any specific location are calculated using the total contribution from overlapping pollution plumes originating from the sequence of roadway segments. CO modeling was conducted for the following conditions: existing year (2005), 2030 No project (limited CVMP buildout), and the 2030 Project (CVMP buildout, projects in the approval pipeline, traffic improvements) conditions. These various study conditions are described in the CVMP Traffic Study in Appendix F. Detailed methodology of the CO analysis is provided in Appendix D.

The EMFAC2007 (version 2.3) Model. The ARB's EMFAC2007 (version 2.3) emission rate program calculates emission rates from all motor vehicles (i.e., cars, trucks, etc.) operating on highways, freeways and local roads in California. EMFAC will calculate the emission rates of hydrocarbons, CO, NO_X, particulate matter, lead, SO_2 and CO_2 for up to 45 model years for each vehicle class within each calendar year; for 24 hourly periods; for each month of the year; and for each district, basin, county and subcounty in California. Emission inventories associated with the proposed program are estimated by applying emission rate data from EMFAC model to vehicle activity data. Detailed methodology of the mass emissions analysis is provided in Appendix E.

A. Air Quality Plan Consistency

Impact AIR-1: Consistency with the 2004 Air Quality Management Plan for the Monterey Bay Region (Less Than Significant)

CVMP Policy CV-2.18 requires that 12 specified road segments in Carmel Valley meet a designated level of service (LOS) ("LOS C"). In a December 11, 2001 report issued by the Monterey County Department of Public Works, the County found that two segments of Carmel Valley Road had exceeded the established level of service threshold. Consequently, the County has undertaken an update to the Carmel Valley Master Plan to include the proposed traffic improvements to address the existing and forecasted level of service deficiencies in the CVMP area, and allow development to proceed in accordance with all CVMP policies such that traffic operations will be in compliance with the CVMP. Population and employment growth data from the CVMP are incorporated into the projections in the 2004 Air Quality Management Plan for the Monterey Bay Region. Because the proposed program will ensure traffic

conditions meet the projections contained in the CVMP for the project area, this impact is considered **less-than-significant**. No mitigation is required.

B. Long-Term Emissions

Impact AIR-2: Exposure of Sensitive Receptors to Substantial Concentrations of CO (Less-than-Significant)

CO modeling protocol analysis was conducted to evaluate whether the proposed roadway improvements would cause or contribute to localized violations of the state or federal ambient standard in the program vicinity. CO concentrations at sensitive receptors near congested roadways and intersections were estimated using CALINE4 dispersion modeling and traffic data provided by the program traffic engineers, DKS Associates (2007b). Table 3.8-5 summarizes CO modeling results for existing year (2005), 2030 No project, and 2030 Project conditions.

As indicated in Table 3.8-5, no violations of the state or federal 1- or 8-hour CO standards are anticipated in the program area under design-year with-project conditions. Therefore, the impact of proposed program traffic conditions on ambient CO levels in the program area is considered **less-than-significant**. No mitigation is required.

Impact AIR-3: Generation of ROG and NO_X, CO, and PM10 Emissions in Excess of MBUAPCD Thresholds (Less than Significant)

Long-term air quality impacts are those associated with motor vehicles operating on the roadway network, predominantly those operating in the program vicinity. Emission of ROG, NO_X, CO, and PM10 for existing year (2005), 2030 No project, and 2030 Project conditions were evaluated through modeling conducted using the ARB's EMFAC2007 (version 2.3) emission rate program and traffic data provided by the program traffic engineers, DKS Associates (Story pers. comm.). The conditions modeled in the analysis include traffic operating on roadway network in the vicinity of the proposed program.

The assessment of the proposed program's contribution to an air quality impact was conducted by evaluating whether program-related operational emissions would exceed the MBUAPCD's thresholds of significance for program operations (Table 3.8-4). Program-related operational emissions were obtained by comparing buildout year (2030) with-project emissions to buildout year (2030) with no-project emissions. The results of these calculations are summarized in Table 3.8-6. Italicized data represents differences between with- and without- project conditions that were analyzed to determine emissions generated directly as a result of implementation of the proposed roadway improvements.

Table 3.8-5. Modeled Carbon Monoxide Levels Measured at Receptors in the Vicinity of the Project Area

		Existing		2030 No project		2030 Project Alternative	
Intersection[1]	Receptor[2]	1-hour CO[3]	8-hour CO[4]	1-hour CO[3]	8-hour CO[4]	1-hour CO[3]	8-hour CO[4]
Highway One & Carmel Valley Road	1	8.7	4.9	3.4	1.7	3.5	1.8
	2	8.1	4.6	3.4	1.7	3.4	1.7
	3	9.4	5.3	3.4	1.7	3.7	1.9
	4	7.5	4.2	3.3	1.7	3.3	1.7
Carmel Rancho Boulevard & Carmel Valley Road	5	7.0	3.9	3.2	1.6	3.2	1.6
	6	7.1	4.0	3.3	1.7	3.3	1.7
	7	7.6	4.3	3.3	1.7	3.3	1.7
	8	7.6	4.3	3.4	1.7	3.4	1.7
Highway One & Rio Road	9	7.0	3.9	3.3	1.7	3.3	1.7
	10	6.2	3.4	3.1	1.6	3.1	1.6
	11	6.8	3.8	3.3	1.7	3.3	1.7
	12	6.6	3.7	3.2	1.6	3.2	1.6
Crossroads Driveway & Rio Road	13	4.9	2.6	2.9	1.4	2.9	1.4
	14	4.9	2.6	2.9	1.4	2.9	1.4
	15	5.4	2.9	3.0	1.5	3.0	1.5
	16	5.4	2.9	3.0	1.5	3.0	1.5
Laureles Grade & Carmel Valley Road	17	5.8	3.2	3.1	1.6	3.1	1.6
	18	5.9	3.2	3.2	1.6	3.1	1.6
	19	5.4	2.9	3.0	1.5	3.0	1.5
	20	5.4	2.9	3.0	1.5	3.0	1.5

Notes:

[1] Receptors 1 through 16 are located 35.4 feet from the center of each intersection diagonal, 25 feet from the roadway centerline, and 3 feet from the boundary of the mixing zone.

[2] Background concentrations of 2.5 ppm and 1.2 ppm were added to the modeling 1-hour and 8-hour results, respectively. Based on MBUAPCD recommendation of using the highest CO concentration reported over the last three years for the Salinas air monitoring station for background CO concentrations (Monterey Bay Unified Air Pollution Control District 2004).

[3] The federal and state 1-hour standards are 35 and 20 ppm, respectively.

[4] The federal and state 8-hour standards are 9 and 9.0 ppm, respectively.

Table 3.8-6. Motor Vehicle Emissions (Pounds/Day)

Condition	VMT[1]	ROG	NO_X	CO	PM10	PM2.5	CO_2
Emissions by condition							
Existing	213,937	182.5	786.7	3,631.2	37.7	28.8	235,518.6
2030 No Project	334,567	42.0	185.1	1,017.1	37.6	25.1	361,808.3
2030 Project Alternative	334,636	42.1	185.2	1,017.4	37.6	25.1	361,882.9
Differences in emissions by condition							
2030 Project Alternative - 2030 No Project	69	0.0	0.0	0.2	0.0	0.0	74.6
MBUAPCD thresholds of significance	**NA**	**137**	**137**	**550**	**82**	**NA**	**NA**

Notes:

[1] Vehicle miles traveled.

Individual roadways may not add up to totals due to rounding.

Emissions calculations are based on EMFAC2002 Model.

Vehicular emissions are anticipated to lessen in future years due to continuing improvements in engine technology and the retirement of older, higher-emitting vehicles. Table 3.8-6 indicates that VMT are expected to increase with implementation of the proposed program, relative to the future no-project scenario. Table 3.8-6 also indicates that, relative to the future no-project scenario, emissions are expected to increase with implementation of the proposed program, although the increases are almost negligible due to the relatively small increases in VMT. As indicated in Table 3.8-6, emissions of ozone precursors (ROG and NO_X), CO, and PM10 are not anticipated to exceed the MBUAPCD's thresholds of significance (Table 3.8-4). Consequently, this impact is considered **less-than-significant**. No mitigation is required.

C. Construction Emissions

Impact AIR-4: Generation Construction Emissions in Excess of MBUAPCD Thresholds (Less than Significant with Mitigation)

Construction of the proposed roadway improvements would result in the temporary generation of emissions of ROG, NO_X, CO, and PM10 that would result in short-term impacts on ambient air quality in the program area. Emissions would originate from mobile and stationary construction equipment exhaust, employee vehicle exhaust, dust from clearing the land, exposed soil eroded by wind, and ROG from asphalt paving. Construction-related emissions would vary substantially depending on the level of activity, length of the construction period, specific construction operations, types of equipment, number of personnel, wind and precipitation conditions, and soil moisture content.

As previously indicated, it is currently unknown what level of construction activities would occur and quantification of emissions from construction activities is not appropriate at this time. However, construction activities could exceed the MBUAPCD's PM10 threshold for construction activities (Table 3.8-4), depending on the level of construction activity required to construct program improvements. Consequently, this impact is considered potentially significant. Implementation of **Mitigation Measure AIR-4.1 and AIR-4.2** would reduce construction-related emissions to a **less-than-significant** level.

Mitigation Measure AIR-4.1: Limit Construction Activities

The County shall limit daily construction activities to 8.1 acres per day for construction activities with minimal earthmoving and 2.2 acres per day for construction activities involving grading, excavation, and other earthmoving activities. This requirement shall be incorporated into the construction contract.

Mitigation Measure AIR-4.2: Implement MBUAPCD Mitigation Measures for Construction PM10 Emissions

The County shall require the construction contractor to implement all applicable and feasible control measures required by the MBUAPCD. This requirement shall be incorporated into the construction contract. These measures include:

- Water all active construction sites 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 mph).
- 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 hydroseed 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 at construction sites.
- Sweep streets if visible soil material is carried out from the construction site.

- Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number of the MBUAPCD shall also be visible to ensure compliance with Rule 402 (Nuisance).
- Limit the area under construction at any one time.

Impact AIR-5: Elevated Health Risk from Exposure to Construction-Related Emissions (Potentially Significant and Unavoidable)

Construction of the proposed roadway improvements are anticipated to involve the operation of diesel-powered equipment for various ground-disturbing activities. In October 2000, the ARB identified diesel exhaust as a TAC. In addition, the MBUAPCD has identified acrolein from construction exhaust as a pollutant of concern. Diesel fuel will be reformulated over the next several years to reduce particulate emissions. In addition, cleaner diesel powered equipment will replace older construction equipment leading to an overall decrease in emissions of exhaust particulate matter and ozone precursor emissions. However, emission reductions are still needed on individual construction projects to reduce the exposure of sensitive receptors to toxic air contaminants and reduce ozone levels.

The assessment of cancer health risks associated with exposure to diesel exhaust is typically associated with chronic exposure, in which a 70-year exposure period is often assumed. However, while excess cancer can result from exposure periods of less than 70 years, acute exposure periods (i.e. exposure periods of 2 to 3 years) to diesel exhaust are not anticipated to result in an increased health risk, as health risks associated with exposure to diesel exhaust are typically seen in exposure periods that are chronic in nature. Currently, it is unknown how long construction activities would occur. However, construction activities are typically short-term and occur over periods not lasting more than several months in duration, and are not often associated with long-term emissions of diesel exhaust at a project site. **Mitigation Measure AIR-5.1** would reduce construction-related emissions to a less-than-significant level.

The MBUAPCD has identified screening distances from which construction activities are not anticipated to result in significant health risks from DPM and acrolein exposure. However, because it is currently unknown how close construction activities may occur in relation to sensitive receptors, construction activities may occur with these distances and result in significant health risks. Consequently, this impact is considered **significant and unavoidable**.

Mitigation Measure AIR-5.1: Implement MBUAPCD Mitigation Measures for Off-Road Mobile Source and Heavy Duty Equipment Emissions

The County shall require the construction contractor to implement all applicable and feasible control measures required by the MBUAPCD. This requirement shall be incorporated into the construction contract. These measures include:

- Limit the pieces of equipment used at any one time.
- Minimize the use of diesel-powered equipment (i.e., wheeled tractor, wheeled loader, roller) by using gasoline-powered equipment.
- Limit the hours of operation for heavy-duty equipment.
- Undertake project during non-zone season.
- Off-site mitigation.
- Use PuriNOx emulsified diesel fuel in existing engines.
- Modify engine with ARB verified retrofit.
- Repower with current standard diesel technology.
- Repower with CNG/ LNG technology.

D. Odors

Impact AIR-6: Generation of Objectionable Odors Affecting a Substantial Number of People (Less than Significant)

Diesel exhaust from construction activities may generate temporary odors while construction of program improvement projects are underway. Once construction activities have been completed, these odors will cease. Operation of the proposed program would not generate any odors, as roadway projects are not typically associated as sources of odors. This impact is considered **less-than-significant**. No mitigation is required.

E. Greenhouse Gases / Climate Change

Impact AIR-7: Increase in Greenhouse Gas Contaminant Emissions (Less than Significant)

The MBUAPCD has not developed any CEQA significance thresholds for greenhouse gases. This is because greenhouse gases, especially carbon dioxide, do not pose any health risks at ambient concentrations. The impacts associated with greenhouse gases are long-term climatic changes, which are beyond the regulatory purview of the air district. However, automobiles are a major source of greenhouse gas emissions, and the quantity of greenhouse gas emissions from automobiles is directly correlated with the amount of VMT. Table 3.8-6 summarizes emissions of greenhouse gases (CO_2 and NO_X, as well as ROG, which is an ozone precursor) associated with vehicle trips. As previously indicated, the MBUAPCD has not established any thresholds or guidance to evaluate impacts associated with greenhouse gas emissions.

The impact scale for climate change is global and the amount of GHG emissions necessary to effect radiative forcing (e.g. global warming) is of a global scale. As noted above, California is responsible for perhaps 2 percent of global emissions. With the program, carbon dioxide emissions associated with vehicle-miles traveled in 2030 would result in an increase in emissions that are

approximately 0.004 percent of California's emissions, which is equivalent to 0.00009 percent of global emissions. The most ambitious state goal for GHG emissions reductions in current planning are for 80% less emissions in 2050 (compared to 1990 emissions levels) to contribute to stabilization of emissions. This goal would still mean that 20% of 1990 GHG emissions would still occur. Even if all of the GHG emissions in Table 3.8-6 are "new" on a global level, this amount of emissions, without considering other cumulative global emissions, would be insufficient to cause substantial climate change directly as it is far less than the amount of global emissions necessary to stabilize greenhouse gas atmospheric concentrations. Thus, project emissions, *in isolation*, are considered **less-than-significant**.

A further consideration is that with or without the proposed program, absent other actions, vehicle-miles traveled and associated GHG emissions will occur in the CVMP area. As shown in Table 3.8-6, VMT and carbon dioxide emissions with or without the proposed program are virtually the same. Thus, compared to the future no-project condition, the project only results in an increase in vehicle-related carbon dioxide emissions of 75 pounds/day, which would represent about 12 metric tons per year. This calculation does not include the increase in residential or other growth allowed by removal of the subdivision moratorium, but as discussed above, there are methodological difficulties in determining what portion of growth is truly "new" on a global basis compared to baseline.

However, climate change is a global cumulative impact, and thus the proper context for analysis of this issue is not a project's emissions in isolation, but rather as a contribution to cumulative GHG emissions, which is discussed in Chapter 4.

Section 3.9
Noise

Introduction

This section addresses noise impacts associated with the construction and operation of proposed roadway improvements to the Carmel Valley Road corridor. Cumulative noise impacts associated with growth projected in the CVMP area are also evaluated.

This study includes a discussion of existing conditions, a summary of local policies and regulations related to noise issues, an analysis of environmental noise impacts related to the proposed program, and cumulative growth per the CVMP. Where significant impacts are identified, mitigation measures are recommended where feasible to reduce impacts.

Methodology

Jones & Stokes reviewed the following sources of information to prepare this section.

- Carmel Valley Master Plan, 1986.
- Monterey County General Plan.
- Greater Monterey Peninsula Area Plan, September 1997.
- Traffic Study prepared for the Carmel Valley Master Plan by DKS Associates, (Appendix F).

Environmental Setting

This section discusses existing conditions related to noise in the program area.

Noise Terminology

Sound, Noise, and Acoustics

Sound is a disturbance that is created by a moving or vibrating source in a gaseous or liquid medium or the elastic stage of a solid and that is capable of being detected by the hearing organs. Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a medium to a hearing organ, such as a human ear. For traffic sound, the medium of concern is air. Noise is defined as loud, unpleasant, unexpected, or undesired sound.

Sound is actually a process that consists of three components: the sound source, the sound path, and the sound receiver. All three components must be present for sound to exist. Without a source to produce sound or a medium to transmit sound pressure waves, there is no sound. Sound must also be received; a hearing organ, sensor, or object must be present to perceive, register, or be affected by sound or noise. In most situations, there are many different sound sources, paths, and receivers, not only one of each. Acoustics is the field of science that deals with the production, propagation, reception, effects, and control of sound.

Frequency and Hertz

A continuous sound can be described by its frequency (pitch) and its amplitude (loudness). Frequency relates to the number of pressure oscillations per second. Low-frequency sounds are low in pitch, like the low notes on a piano, whereas high-frequency sounds are high in pitch, like the high notes on a piano. Frequency is expressed in terms of oscillations, or cycles, per second. Cycles per second are commonly referred to as Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of hertz. The human ear can generally hear frequencies ranging from 20 Hz on the low end, to about 20,000 Hz (20 kHz) on the high end.

Sound Pressure Levels and Decibels

The amplitude of a sound determines its loudness. Loudness of sound increases and decreases with increasing and decreasing amplitude. Sound-pressure amplitude is measured in units of micro-Newtons per square meter (FN/m^2), also called micro-Pascals (µPa). One µPa is approximately one hundred billionth

(0.00000000001) of normal atmospheric pressure. The pressure of a very loud sound may be 200 million µPa, or 10 million times the pressure of the weakest audible sound (20 µPa). Because expressing sound levels in terms of µPa would be cumbersome, sound pressure level (SPL) is used to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called bels, named after Alexander Graham Bell. To provide finer resolution, a bel is divided into 10 decibels (dB).

Addition of Decibels

Because decibels are logarithmic units, SPL cannot be added or subtracted by ordinary arithmetic means. For example, if one automobile produces an SPL of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. When two sounds of equal SPL are combined, they produce a combined SPL 3 dB greater than the original individual SPL. In other words, sound energy must be doubled to produce a 3 dB increase. If two sound levels differ by 10 dB or more, the combined SPL is equal to the higher SPL; the lower sound level would not increase the higher sound level.

A-Weighted Decibels

SPL alone is not a reliable indicator of loudness. The frequency of a sound also has a substantial effect on how humans respond. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the SPL in that range. In general, the healthy human ear is most sensitive to sounds from 1,000 to 5,000 Hz and perceives a sound within that range as being more intense than a sound of higher or lower frequency with the same magnitude. To approximate the frequency response of the human ear, a series of SPL adjustments is usually applied to the sound measured by a sound level meter. The adjustments, referred to as a weighting network, are frequency-dependent.

The A-scale weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Other weighting networks have been devised to address high noise levels or other special problems (e.g., B-, C-, and D-scales), but these scales are rarely used in conjunction with highway-traffic noise. Noise levels for environmental noise studies are typically reported in terms of A-weighted decibels (dBA). In environmental noise studies, A-weighted SPLs are commonly referred to as noise levels. Table 3.9-1 shows typical A-weighted noise levels.

Table 3.9-1. Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 300 meters (1000 feet)		
	— 100 —	
Gas lawn mower at 1 meter (3 feet)		
	— 90 —	
Diesel truck at 15 meters (50 feet) at 80 kph (50 mph)		Food blender at 1 meter (3 feet)
	— 80 —	Garbage disposal at 1 meter (3 feet)
Noisy urban area, daytime		
Gas lawn mower, 30 meters (100 feet)	**— 70 —**	Vacuum cleaner at 3 meters (10 feet)
Commercial area		Normal speech at 1 meter (3 feet)
Heavy traffic at 90 meters (300 feet)	**— 60 —**	
		Large business office
Quiet urban daytime	**— 50 —**	Dishwasher next room
Quiet urban nighttime	**— 40 —**	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night, concert
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	**— 0 —**	Lowest threshold of human hearing

Source: Caltrans 1998b.

Human Response to Changes in Noise Levels

Under controlled conditions in an acoustics laboratory, the trained, healthy human ear is able to discern 1-dB changes in sound levels when exposed to steady, single-frequency (“pure-tone”) signals in the midfrequency range. Outside such controlled conditions, the trained ear can detect 2-dB changes in

normal environmental noise. However, it is widely accepted that the average healthy ear can barely perceive 3-dB noise level changes. A 5-dB change is readily perceptible, and a 10-dB change is perceived as being twice or half as loud. As discussed above, doubling sound energy results in a 3-dB increase in sound; therefore, doubling sound energy (e.g., doubling the volume of traffic on a highway) would result in a barely perceptible change in sound level.

Noise Descriptors

Noise in our daily environment fluctuates over time. Some fluctuations are minor, but some are substantial. Some noise levels occur in regular patterns, but others are random. Some noise levels fluctuate rapidly, but others slowly. Some noise levels vary widely, but others are relatively constant. Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise descriptors most commonly used in traffic noise analysis.

- Equivalent Sound Level (L_{eq}): L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level that in a stated period would contain the same acoustical energy as the time-varying sound that actually occurs during the same period. The 1-hour A-weighted equivalent sound level (L_{eq}[h]), is the energy average of the A-weighted sound levels occurring during a 1-hour period.

- Percentile-Exceeded Sound Level (L_x): L_x represents the sound level exceeded for a given percentage of a specified period (e.g., L10 is the sound level exceeded 10% of the time, L90 is the sound level exceeded 90% of the time).

- Maximum Sound Level (L_{max}): L_{max} is the highest instantaneous sound level measured during a specified period.

- Day-Night Level (L_{dn}): L_{dn} is the energy average of the A-weighted sound levels occurring during a 24-hour period with 10 dB added to the A-weighted sound levels occurring between 10 p.m. and 7 a.m.

- Community Noise Equivalent Level (CNEL): CNEL is the energy average of the A-weighted sound levels occurring during a 24-hour period with 10 dB added to the A-weighted sound levels occurring between 10 p.m. and 7 a.m. and 5 dB added to the A-weighted sound levels occurring between 7 p.m. and 10 p.m.

Sound Propagation

When sound propagates over a distance, it changes in level and frequency content. The manner in which noise reduces with distance depends on the following factors.

Geometric Spreading: Sound from a small, localized source (i.e., a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates (or drops off) at a rate of 6 dBA for each doubling of distance. Highway noise is not a single, stationary point source of sound. The movement of the vehicles on a highway makes the source of the sound appear to emanate from a line (i.e., a line source) rather than a point. This line source results in cylindrical spreading rather than the spherical spreading that results from a point source. The change in sound level from a line source is 3 dBA per doubling of distance.

Ground Absorption: The noise path between the highway and the observer is usually very close to the ground. Noise attenuation from ground absorption and reflective-wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is done for simplification only because prediction results based on this scheme are sufficiently accurate for distances of less than 200 feet. For acoustically hard sites (i.e., those sites with a reflective surface, such as a parking lot or a smooth body of water, between the source and the receiver), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees, between the source and the receiver), an excess ground-attenuation value of 1.5 dBA per doubling of distance is normally assumed. When added to the geometric spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dBA per doubling of distance for a line source and 7.5 dBA per doubling of distance for a point source.

Atmospheric Effects: Atmospheric conditions can have a significant effect on noise propagation. Wind has been shown to be the most important meteorological factor within approximately 500 feet of the source, whereas vertical air-temperature gradients are more important for greater distances. Other factors such as air temperature, humidity, and turbulence also have significant effects. Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lower noise levels. Increased sound levels can also occur as a result of temperature inversion conditions (i.e., increasing temperature with elevation).

Shielding by Natural or Human-Made Features: A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by this shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction. A taller barrier may provide as much as 20 dB of noise reduction.

Noise-sensitive Land Uses

Noise-sensitive land uses are generally defined as locations where people reside or where the presence of noise could adversely affect the use of the land. Typical sensitive receptors include residents, school children, hospital patients, the elderly, etc. Sensitive land uses in the program area that could be affected include:

- single-family residences located along Carmel Valley Road and connecting roadways,
- multi-family residences and condominiums located along Carmel Valley Road and Rio Road,
- places of worship,
- schools, athletic fields, and playgrounds,
- parks and actively used open space areas,
- lodging, motels and hotels, and
- golf courses.

The noise-sensitive areas affected by traffic on Carmel Valley Road were divided into twelve segments for this study. A description of these segments and associated land use is shown in Table 3.9-2.

Table 3.9-2. Land Use adjacent to segments in the Carmel Valley Road study area

Segment Number	Roadway	Segment ends	Land Use
1	Carmel Valley Road	East of Holman Road	Low-density single-family residences
2		Holman Road to Esquiline Road	Single- and multi-family residences, sports court
3		Esquiline Road to Ford Road	Single- and multi-family residential, commercial
4		Ford Road to Laureles Grade	Single-family residences, lodging
5		Laureles Grade to Robinson Canyon Road	Low-density single family residences, golf course, Carmel Valley High School, Garland Ranch Regional Park, open space
6		Robinson Canyon Road to Schulte Road	Single-family residences, Hall School, Carmelo School, Places of Worship
7		Schulte Road to Rancho San Carlos Road	Low-density single-family residences, golf course, open space
8		Rancho San Carlos Road to Rio Road	Low-density single-family residences, place of worship, golf course, open space
9		Rio Road to Carmel Rancho Boulevard	Single-family residences, Carmel Middle School
10		Carmel Rancho Boulevard to Highway 1	Single-family residences, commercial

Existing Noise Environment

The program area includes residential and public land uses located along Carmel Valley Road between the City of Carmel-by-the Sea and the village of Carmel Valley. The existing noise environment in the program area is dominated by noise from traffic traveling on Carmel Valley Road.

The existing noise environment in the program area has been characterized both with sound level measurements taken in the program area and traffic noise modeling as described below.

Noise Monitoring

The existing noise environment in the program area was characterized by conducting short- and long-term noise monitoring in locations adjacent to Carmel Valley Road, Rio Road, and Laureles Grade.

Jones & Stokes selected the noise monitoring sites. Sites were selected to document existing ambient noise levels at representative locations in the program

area where noise-sensitive land uses are located. The noise monitoring sites are described below.

Long-Term Monitoring

Long-term monitoring was conducted at two positions using Larson-Davis Model 720 Type 2 sound level meters (serial numbers 0502 and 0506). The purpose of the long-term monitoring is to record the day-night variation in noise levels. The long-term sound level data was collected over 24-hours, beginning Monday, June 5, 2006, and ending Tuesday, June 6, 2006.

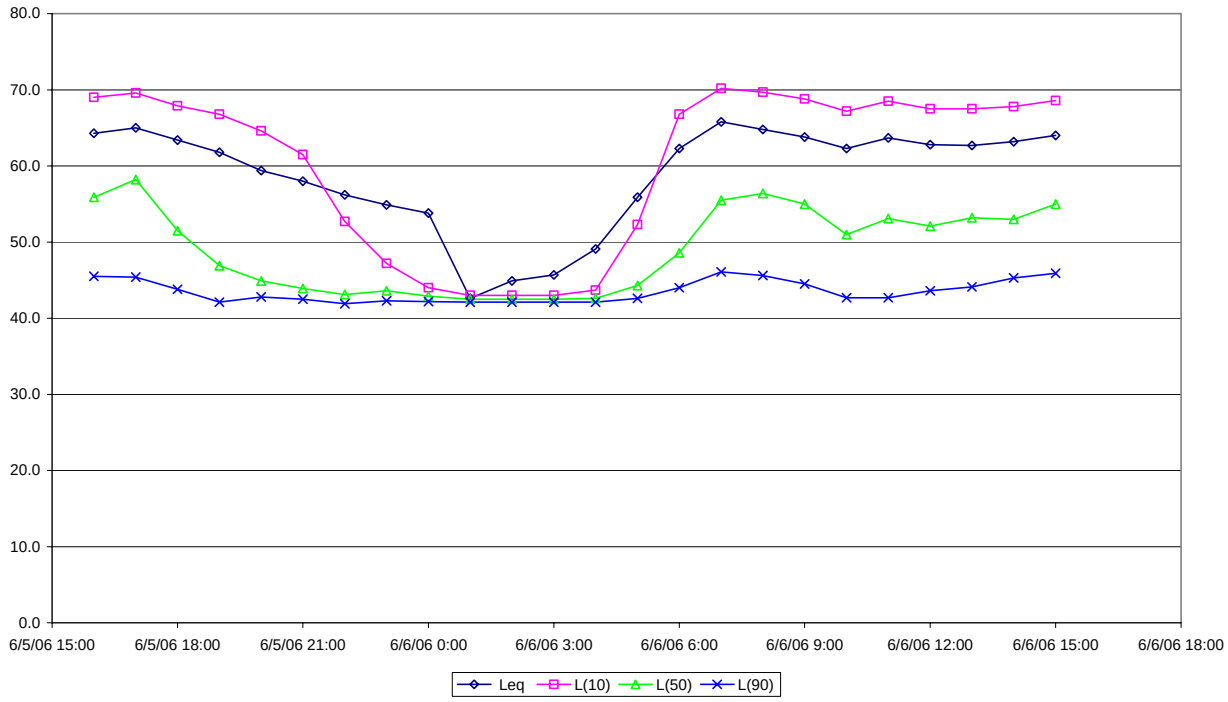
Position LT-1. The long-term monitoring position LT-1 was located in the front yard of the residence at 1 Holman Road in Carmel Valley. The residence is in a first-row location relative to East Carmel Valley Road, at the top of an embankment about 10 feet in height. The microphone was located within line-of-sight to East Carmel Valley Road, approximately 50 feet from the edge-of-pavement. The posted speed for traffic on East Carmel Valley Road was 35 miles per hour (mph). The loudest hour sound level measured was 65.8 dBA L_{eq}1h, during the 7:00 a.m. hour. The day-night noise level was measured to be 64.3 dBA L_{dn}. Table 3.9-3 and Figure 3.9-1 summarize the results of the long-term monitoring.

Table 3.9-3. Summary of Long-Term Monitoring, Site LT-1

Hour Beginning	One-hour average noise levels (dBA, L_{eq}[h])	Difference from Loudest Hour (dB)
12:00 a.m.	53.8	-12.0
1:00 a.m.	42.6	-23.2
2:00 a.m.	44.9	-20.9
3:00 a.m.	45.7	-20.1
4:00 a.m.	49.1	-16.7
5:00 a.m.	55.9	-9.9
6:00 a.m.	62.3	-3.5
7:00 a.m.	**65.8**	0
8:00 a.m.	64.8	-1.0
9:00 a.m.	63.8	-2.0
10:00 a.m.	62.3	-3.5
11:00 a.m.	63.7	-2.1
12:00 p.m.	62.8	-3.0
1:00 p.m.	62.7	-3.1
2:00 p.m.	63.2	-2.6
3:00 p.m.	64.0	-1.8
4:00 p.m.	64.3	-1.5
5:00 p.m.	65.0	-0.8
6:00 p.m.	63.4	-2.4
7:00 p.m.	61.8	-4.0
8:00 p.m.	59.4	-6.4
9:00 p.m.	58.0	-7.8
10:00 p.m.	56.2	-9.6
11:00 p.m.	54.9	-10.9
L_{dn}	**64.3**	NA

Note: Worst noise hour noise level is in **bold** text.

Figure 3.9-1. Long-Term Monitoring at Site LT-1, June 5-6, 2006



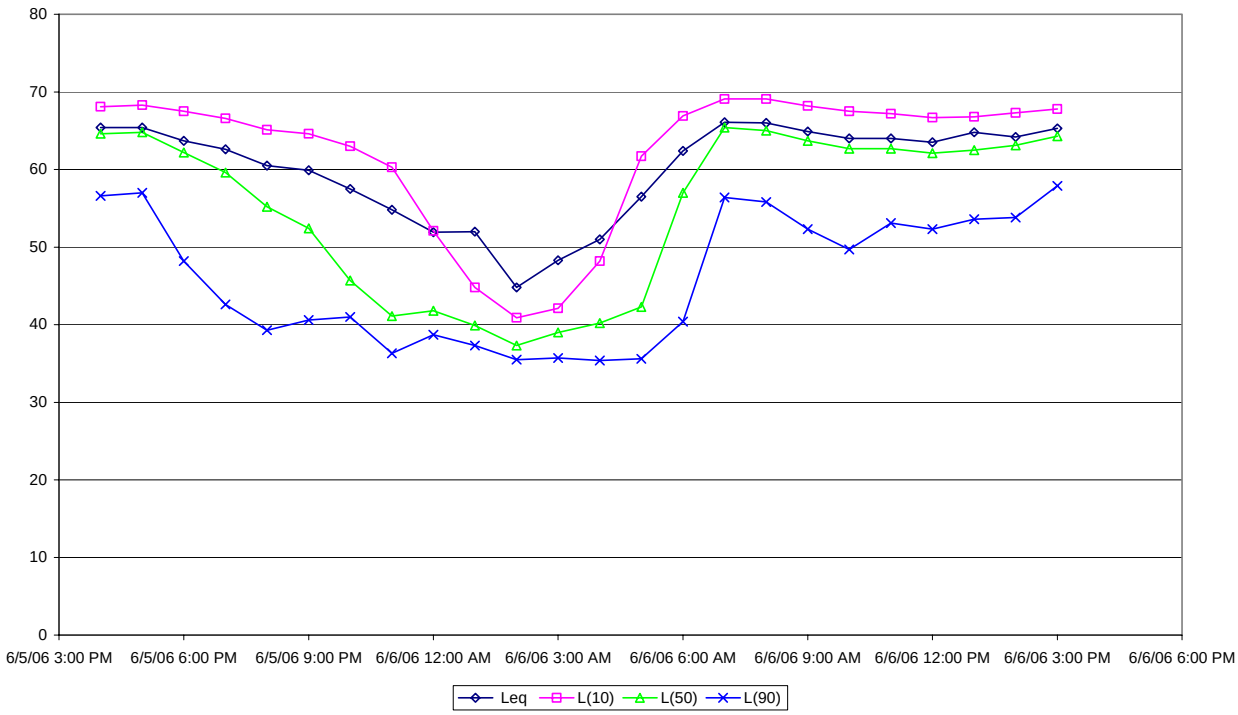
Position LT-2. The long-term monitoring position LT-2was located in the front yard of the residence at 7470 Carmel Valley Road. The residence is in a first-row location relative to Carmel Valley Road. The microphone was located within line-of-sight to Carmel Valley Road, approximately 75 feet from the edge-of-pavement. The posted speed for traffic on Carmel Valley Road was 50 mph. The loudest hour sound level measured was 66.1 dBA $L_{eq}1h$, during the 7:00 a.m. hour. The day-night noise level was measured to be 65.0 dBA L_{dn}. Table 3.9-4 and Figure 3.9-2 summarize the results of the long-term monitoring.

Table 3.9-4. Summary of Long-Term Monitoring, Site LT-2

Hour Beginning	One-hour average noise levels (dBA, L_{eq}[h])	Difference from Loudest Hour (dB)
12:00 a.m.	51.9	-14.2
1:00 a.m.	52.0	-14.1
2:00 a.m.	44.8	-21.3
3:00 a.m.	48.3	-17.8
4:00 a.m.	51.0	-15.1
5:00 a.m.	56.5	-9.6
6:00 a.m.	62.4	-3.7
7:00 a.m.	**66.1**	0
8:00 a.m.	66.0	-0.1
9:00 a.m.	64.9	-1.2
10:00 a.m.	64.0	-2.1
11:00 a.m.	64.0	-2.1
12:00 p.m.	63.5	-2.6
1:00 p.m.	64.8	-1.3
2:00 p.m.	64.2	-1.9
3:00 p.m.	65.3	-0.8
4:00 p.m.	65.4	-0.7
5:00 p.m.	65.4	-0.7
6:00 p.m.	63.7	-2.4
7:00 p.m.	62.6	-3.5
8:00 p.m.	60.5	-5.6
9:00 p.m.	59.9	-6.2
10:00 p.m.	57.5	-8.6
11:00 p.m.	54.8	-11.3
L_{dn}	**65.0**	NA

Note: Worst noise hour noise level is in **bold** text.

Figure 3.9-2. Long-Term Monitoring at Site LT-2, June 5-6, 2006



Short-Term Monitoring

Attended short-term monitoring was conducted on Monday, June 5, 2006 through Tuesday, June 6, 2006, using a Larson-Davis Model 812 Precision Type 1 sound level meter (serial number 0430). At each position, the meter was positioned on a tripod at a microphone height of 5 feet above the ground. Sound levels and audible noise sources were recorded on field data sheets in order to characterize the noise environment at each position. Monitoring was conducted for a 15-minute duration at each location. The short-term measurement positions are the positions indicated as ST-1 through ST-12 in Figure 3.9-3.

The noise monitoring was conducted in residential areas adjacent to roadway study segments identified by DKS Associates. One short-term measurement was conducted in each of the program segments. Traffic noise from Carmel Valley Road and other local roadways was the dominant noise source observed during attended monitoring. Measurements were taken during the daytime hours between 10:00 a.m. and 5:00 p.m. Noise levels between 60 and 68 dBA L_{eq} were measured at eight of the ten measurement sites, while noise levels below 60 dBA L_{eq} were measured at the other two sites.

Temperature, wind speed, and humidity were recorded manually during the short-term monitoring session using a Kestrel 3000 portable weather station. During the attended measurements, skies were clear and wind speeds were typically in the range of 0–5 mph. Temperatures were in the range of 16–25°C (61–77°F), with relative humidity typically in the range of 65–85%.

ST-10
ST-9
ST-11
ST-8
ST-7
LT-2
ST-6
ST-12
ST-4
ST-5
LT-1
ST-1
ST-3
ST-2
HWY 1
CARMEL VALLEY RD
CARMEL RIVER
LAURELES GRADE RD
LAS GAZAS CR
N
W
E
S
0 0.5 1 2
Miles
055335.05 (02/07)
Jones & Stokes

Figure 3.9-3
Noise Measurement Locations

Table 3.9-5 summarizes the short-term monitoring results.

Table 3.9-5. Summary of Short-Term Sound Level Measurements, June 5-6, 2006

Receivers	Location	Time	Duration (minutes)	Measured Sound Level (dBA)		
				L_{eq}	L_{33}	L_{90}
ST-1	End of Camp Stefani Road	4:42 p.m.	15	62.4	59.0	45.8
ST-2	Sports Court near Esquiline Road	2:30 p.m.	15	54.0	51.9	45.4
ST-3	End of Hidden Valley Institute entrance	3:00 p.m.	15	62.5	61.9	53.8
ST-4	Near Boronda Road	3:31 p.m.	15	58.6	58.5	53.4
ST-5	Garland Ranch Regional Park	1:23 p.m.	15	61.0	61.7	56.3
ST-6	Across from Via Del Cinco Road	12:40 p.m.	15	62.5	61.9	53.7
ST-7	Near Enlace Road	12:05 p.m.	15	63.0	59.7	52.4
ST-8	Near Congregation Beth Israel Synagogue	11:31 a.m.	15	68.0	68.5	60.4
ST-9	In front of Carmel Valley Middle School	11:05 a.m.	15	63.9	63.5	55.9
ST-10	Near Carmel Knolls Drive	10:05 a.m.	15	61.5	61.4	54.8
ST-11	Arroyo Carmel Condos	10:33 a.m.	15	54.6	54.8	50.9
ST-12	In front of 373 Laureles Grade	4:42 p.m.	15	64.0	64.8	54.3

Existing Conditions

Existing traffic noise levels were calculated using the Federal Highway Administration Traffic Noise Prediction Model (FHWA-RD-77-108) and existing traffic volumes provided by the program traffic engineers, DKS Associates (DKS Associates 2007a). Table 3.9-6 summarizes the traffic noise modeling results based on existing traffic conditions. As shown in the table, areas adjacent to eight of ten segments of Carmel Valley Road currently exceed the County's performance standard of 60 dB L_{dn} at 100 feet from the road centerline.

Table 3.9-6. Existing Noise Levels along Program Segments

Roadway	Section	Land Use Description	Performance Standard, L_{dn}/CNEL	Existing Condition dBA L_{dn}, 100 feet from Roadway Centerline
Carmel Valley Road	East of Holman Road	Residential	60	61
	Holman Road to Esquiline Road	Residential	60	58
	Esquiline Road to Ford Road	Residential	60	57
	Ford Road to Laureles Grade	Residential	60	60
	Laureles Grade to Robinson Canyon Road	Residential	60	65
	Robinson Canyon Road to Schulte Road	Residential	60	65
	Schulte Road to Rancho San Carlos Road	Residential	60	66
	Rancho San Carlos Road to Rio Road	Residential	60	68
	Rio Road to Carmel Rancho Boulevard	Residential	60	68
	Carmel Rancho Boulevard to Highway One	Residential	60	67

Regulatory Setting

Local Regulations and Standards

Noise standards in the County of Monterey are defined in the General Plan Noise Element, the Greater Monterey Area Specific Plan, and the Carmel Valley Master Plan. The following is a brief discussion of each as they apply to the program.

County of Monterey General Plan

Policy 22.2.1 from the County's General Plan Noise Element addresses land use compatibility for new developments. New developments must conform to the noise parameters established by Table 6 within the County's General Plan. The County's land use compatibility guidelines established in Table 6 of the General Plan are summarized in Table 3.9-7, below.

In addition to the County's land use compatibility guidelines, the Monterey County Resource Management Agency - Planning Department has established 60 dB as the maximum acceptable noise level for residential uses.

For new roadway improvement projects and general construction projects, the acceptable noise levels shown in Table 3.9-7 must be met. Further, construction-related noise is subject to the County's Noise Control Ordinance, described below.

Where existing noise-sensitive land uses may be exposed to increased noise levels, the following criteria is used to determine the significance:

- Where existing noise levels are less than 60 dB L_{dn} at outdoor activity areas of noise-sensitive land uses, a 5 dB L_{dn} increase in noise levels will be considered significant;
- Where existing noise levels are between 60 and 65 dB L_{dn} at outdoor activity areas of noise-sensitive land uses, a 3 dB L_{dn} increase in noise levels will be considered significant; and
- Where existing noise levels are greater than 65 dB L_{dn} at outdoor activity areas of noise-sensitive land uses, a 1.5 dB L_{dn} increase in noise levels will be considered significant.

Guidance from the Monterey County Health Department indicates that using thresholds contained within the General Plan is appropriate and may be used in the determination of significance for the proposed program (Beretti pers. comm.).

Table 3.9-7. Land Use Compatibility for Exterior Community Noise

Land Use Category	Noise Ranges (Ldn or CNEL) dB			
	I	II	III	IV
Passively used open spaces	50	50–55	55-70	70+
Auditoriums, concert halls, amphitheaters	45-50	50–65	65-70	70+
Residential—low density single-family, duplex, mobile homes	50–55	50–70	70–75	75+
Residential—multi-family	50–60	60–70	70–75	75+
Transient lodging—motels, hotels	50–60	60–70	70–80	80+
Schools, libraries, churches, hospitals, nursing homes	50–60	60–70	70–80	80+
Actively used open spaces—playgrounds, neighborhood parks	50–67	---	67-73	73+
Golf courses, riding stables, water recreation, cemeteries	50–70	---	70–80	80+
Office buildings, business commercial and professional	50–67	67–75	75+	---
Industrial, manufacturing, utilities, agriculture	50–70	70–75	75+	---

Notes:

Noise Range I—Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Noise Range II—Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Noise Range III—Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Noise Range IV—Clearly Unacceptable: New construction or development should generally not be undertaken.

Source: Office of Noise Control, California Department of Health 1976.

County of Monterey Health and Safety Noise Control Ordinance

Chapter 10.60.030 prohibits the generation of mechanical noise in excess of 85 dBA, measured 50 feet from the noise source. This ordinance is only applicable to noise generated within 2,500 feet of any occupied dwelling unit. As mentioned above, the County's Draft General Plan uses the Noise Control Ordinance to regulate construction-related noise.

Greater Monterey Peninsula Specific Plan

The Specific Plan does not specify criteria for noise impacts, but cites a noise level of 60 dBA as generally a threshold of concern.

Criteria for Determining Significance

In accordance with CEQA, State CEQA Guidelines, Monterey County plans and policies, Greater Monterey Peninsula Area Plan plans and policies, Carmel Valley Master Plan plans and policies, and agency and professional standards, implementation of the program is considered to result in a significant noise impact if it would:

A. Long-Term Program-Related Increases in Traffic Noise

Expose outdoor activity areas of noise-sensitive land uses to a 5 dB increase in noise where existing noise levels are below 60 dBA Ldn, a 3 dB increase in noise where existing noise levels are between 60 and 65 dBA Ldn, or a 1.5 dB increase in noise where existing noise levels are above 65 dBA Ldn. (Increases are evaluated by comparing to future with-project conditions to future no-project conditions.)

B. Short-Term Construction Noise

Expose outdoor activity areas of noise sensitive land uses to construction noise of greater than 85 dB at 50 feet.

C. Vibration

Expose persons to or generate excessive groundborne vibration or groundborne noise levels.

Impacts and Mitigation Measures

Approach Methodology

CEQA requires the significance of noise impacts to be determined for proposed projects. The process of assessing the significance of noise impacts associated with a proposed project starts by establishing thresholds at which significant impacts are considered to occur. Next, noise levels associated with project-

related activities are predicted and compared to the criteria for determining significance, outlined in the previous section. A significant impact is considered to occur when a predicted noise level exceeds a threshold.

Because detailed project-level information on the proposed traffic improvements has not been determined at this time, the traffic noise analysis has been conducted at a program level based on roadway segment volumes. Noise from traffic on segments of Carmel Valley Road in the CVMP area has been evaluated under future project buildout Year 2030 conditions, both with and without implementation of the program. Impacts related to the grade separation project have been evaluated qualitatively.

The FHWA-RD-77-108 noise model was used for calculating future traffic noise levels, using traffic information provided by DKS Associates (DKS Associates 2007a). Noise levels were calculated along roadway segments potentially affected by the program. Construction noise was evaluated using methods recommended by the U.S. Department of Transportation (FTA 2006).

Traffic improvements assessed were described in Chapter 2, "Program Description".

A. Long-Term Program-Related Increases in Traffic Noise

Impact N-1: Exposure of Noise-Sensitive Land Uses to Increased Traffic Noise (Less than Significant with Mitigation)

Table 3.9-8 summarizes the predicted traffic noise levels along roadway segments in the program area under future-year 2030 conditions both with and without implementation of the proposed roadway improvements. The results in Table 3.9-8 indicate that implementation of the proposed traffic improvements will not increase traffic volumes to a level that will result in any change in traffic noise. This impact is therefore considered **less-than-significant**.

Because the proposed grade-separation at the intersection of Carmel Valley Road and Laureles Grade specified in the program will substantially modify the vertical alignment of the roadway and will expand the footprint of the existing roadway to accommodate added turning lanes, the proposed grade separation has the potential to substantially increase noise levels at noise-sensitive locations adjacent to the intersection. This impact is considered to be potentially significant. Implementation of the following mitigation measure would reduce this impact to a **less-than-significant level**.

Mitigation Measure N-1.1: Implement Noise-Reducing Treatments at the Grade Separation Project

If significant noise impacts are identified as part of the project-level noise study for the grade separation project, the County shall implement noise-reducing treatments where feasible to a less-than-significant level. These treatments may include but are not limited to:

- Use of noise-reducing asphalt such as open-graded asphalt or rubberized asphalt.
- Placement of solid barriers in the form of walls or berms between the roadway and adjacent land uses.
- Implementation of upgraded acoustical insulation at residences where interior noise levels are predicted to exceed 45 Ldn.

Table 3.9-8. Existing and Future Year 2030 Traffic Noise Levels along Carmel Valley Road Segments 100 feet from Roadway Centerline

Roadway		County Compatibility Standard, L_{dn}/CNEL	Significant Increase Criterion[a]	Existing L_{dn} Noise Level (dBA)	No-Project L_{dn} Noise Level (dBA)	Future Increase Relative to Existing Conditions (dB)	With-Project L_{dn} Noise Level (dBA)
Carmel Valley Road	East of Holman Road	60	3 dB	61	63	+2	63
	Holman Road to Esquiline Road	60	5 dB	58	60	+2	60
	Esquiline Road to Ford Road	60	5 dB	57	59	+2	59
	Ford Road to Laureles Grade	60	3 dB	60	62	+2	62
	Laureles Grade to Robinson Canyon Road	60	1.5 dB	65	67	+2	67
	Robinson Canyon Road to Schulte Road	60	1.5 dB	65	67	+2	67
	Schulte Road to Rancho San Carlos Road	60	1.5 dB	66	67	+1	67
	Rancho San Carlos Road to Rio Road	60	1.5 dB	68	69	+1	69
	Rio Road to Carmel Rancho Boulevard	60	1.5 dB	68	69	+1	69
	Carmel Rancho Boulevard to Highway One	60	1.5 dB	67	68	+1	68

[a] See *Thresholds of Significance* section, and Table 3.9-6.

B. Short-Term Construction Noise

Impact N-2: Exposure of Noise Sensitive Land Uses to Construction Noise Levels (Less than Significant with Mitigation)

The proposed roadway improvement projects along Carmel Valley Road have the potential to result in short-term or periodic increases in ambient noise levels above existing levels from construction activities. Table 3.9-9 shows noise levels produced by typical construction equipment (FTA 2006).

Table 3.9-9. Construction Equipment Noise Emission Levels

Equipment	Typical Noise Level 50 feet from Source (dBA)
Air Compressor	81
Backhoe	80
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Bulldozer	85
Excavator/Shovel	82
Generator	81
Grader	85
Loader	85
Scraper	89
Truck	88

Source: Federal Transit Administration 2006.

Noise from construction sources typically drops off at a rate of about 6 dB per doubling of distance. The data in Table 3.9-10 indicates that noise sensitive land uses in the vicinity of Carmel Valley Road could be exposed to construction noise that exceeds 85 dBA at 50 feet. Therefore, this impact is considered significant. Implementation of the following mitigation measures would reduce this impact to **less-than-significant** levels.

Mitigation Measure N-2.1: Limit hours of Construction Operations

Construction operations should be limited to the hours of 8:00 a.m. to 5:00 p.m. Monday through Friday.

Mitigation Measure N-2.2: Locate Noise-Generating Equipment as Far as Practicable from Noise-Sensitive Receptors

All stationary noise-generating equipment, such as pumps and generators, will be located as far as possible from nearby noise-sensitive receptors as practicable. Where practicable, stationary noise-generating equipment will be shielded from nearby noise-sensitive receptors by noise-attenuating buffers, such as structures or haul truck trailers. Stationary noise-generating equipment located less than 300 feet from noise-sensitive receptors will be equipped with noise reducing engine housings. Portable acoustic barriers will be placed around stationary noise-generating equipment located within 200 feet of residences. Water tanks and equipment storage, staging, and warm-up areas will also be located as far from noise-sensitive receptors as possible.

Mitigation Measure N-2.3: Use Sound-Control Devices on Combustion-Powered Equipment

All construction equipment powered by gasoline or diesel engines will be required to use sound-control devices that are at least as effective as those originally provided by the manufacturer. No equipment will be permitted to have an unmuffled exhaust.

Mitigation Measure N-2.4: Use Shortest Possible Traveling Routes When Practicable

Construction vehicles accessing the project sites shall be required to use the shortest possible route to and from local freeways, provided the routes do not expose additional receptors to noise, and comply with local roadway ordinances.

Mitigation Measure N-2.5: Disseminate Essential Information to Residences and Implement a Complaint Response and Tracking Program

Residences within 500 feet of a construction area shall be notified of the construction schedule before construction begins. Monterey County and the construction contractor shall designate a noise disturbance coordinator to be responsible for responding to complaints regarding construction noise. The coordinator will determine the cause of complaint and will ensure that reasonable measures are implemented to correct the problem for valid complaints. A contact telephone number for the noise disturbance coordinator will be conspicuously posted on construction site fences and will be included in the notification to nearby residents.

Mitigation Measure N-2.6: Implementation of Additional Mitigation Measures, as Needed and/or Required

Throughout a project's construction period, the project contractor will implement additional noise mitigation measures at the request of Monterey County to ensure that noise levels at the nearest residences do not exceed the appropriate agency significance criteria. Additional measures may include changing the location of stationary noise-

generating equipment, shutting off idling equipment, rescheduling construction activity, installing acoustic barriers around stationary sources of construction noise, using alternative equipment or construction methods that produce less noise, and other site-specific measures.

C. Vibration

Impact N-3: Potential Exposure of Sensitive Receivers to Excessive Groundborne Vibration Levels (Less than Significant with Mitigation)

Project-specific construction activities such as grading and other earthmoving activities may result in minor amounts of ground vibration and noise. These activities are not expected to result in the exposure of persons to perceptible levels of groundborne vibration. Vibration that may occur from these activities would generally be short-term and will end when construction is completed. However, if high-impact activities such as pile driving occur, there is potential for significant groundborne vibration impacts. Therefore, these impacts are considered potentially significant. Implementation of **Mitigation Measures N-2.1, N-2.2, N-2.5, and N-2.6** will likely reduce this impact to a **less-than-significant** level.

Section 3.10

Public Services and Utilities

Introduction

This section presents a qualitative analysis of proposed program's potential to affect the following public services and utilities within the County.

- Public Services.
  - Schools.
  - Library Services.
  - Emergency Services (Fire and Police Protection).
  - Parks.
- Utilities.
  - Electricity and natural gas.
  - Water.
  - Wastewater treatment.
  - Solid waste.

Methodology

Jones & Stokes reviewed the following sources of information to prepare the public services and utilities chapter of this document.

- Interviews with local representatives of fire and police protection offices, Carmel Valley Chamber of Commerce, California American Water Company, and the Carmel Unified School District (CUSD).
- Websites for governmental agencies, non-profit organizations, and The Pacific Gas and Electric Company (PG&E).

Environmental Setting

The following discussion describes the environmental and regulatory setting of the County's public services and utilities. The regulatory setting includes relevant policies of the Monterey County General Plan and the Greater Monterey Peninsula Area Plan (GMPAP). The Carmel Valley Master Plan (CVMP) is included by reference.

Public Services

Schools

The CUSD includes one elementary school, one middle school, and one high school. The CUSD also operates a child development center. In the 2005–2006 school year, total CUSD enrollment was 1,090 students. The facilities, their locations, and current enrollments by school are listed in Table 3.10-1.

Table 3.10-1. 2006 Public School Enrollments in Carmel Unified School District

Facility	Address	Enrollment
Carmel Child Development Center	8460 Carmel Valley Road	171
Tularcitos Elementary School	35 Ford Road	365
Carmel Middle School	4378 Carmel Valley Road	524
Carmel Valley High School	27335 Schulte Road	30
	Total Enrollment	**1,090**

Sources: Carmel Unified School District 2000; Wright pers. comm.

Library Services

One library is located in Carmel Valley, the Carmel Valley Library. This library is a branch of Monterey County Free Libraries, which provides complete library services to the Carmel Valley community (Carmel Valley Chamber of Commerce n.d.). This branch serves approximately 10,000 people and maintains 15,000 volumes (Monterey County 1984).

Emergency Services

Monterey County's Consolidated Emergency Fire Dispatch Center provides emergency fire and medical dispatch services for the entire County (Monterey County 2003). The County also has responsibility for and operates ambulance services in the County except for the areas covered by the Carmel Valley Fire

Protection District and the City of Carmel (Local Agency Formation Commission 2005a).

Fire Protection Services

Three fire protection districts provide structural fire protection and emergency response services to the Carmel Valley area: the Carmel Valley Fire Protection District (Carmel Fire District) for most of Carmel Valley, the Cypress Fire Protection District (Cypress Fire District or CFD) for portions of lower Carmel Valley (Local Agency Formation Commission 2005a), and Salinas Rural Fire Protection District (Salinas Fire District). In addition, the California Department of Forestry and Fire Protection (CDF) provides protection from forest fire throughout the region (Robberton pers. comm.).

Carmel Valley Fire Protection District

Carmel Valley Fire District provides fire protection, emergency response, and ambulance transport service throughout its boundaries. The Carmel Fire District service area boundaries extend from San Clemente Drive in the Sleepy Hollow area in the east to Rancho San Carlos Road in the west; and from within the Santa Lucia Preserve in the south to the hills that rise from the valley floor in the north (Carmel Valley Fire Protection District 2006). The Carmel Fire District serves a population of 20,000 (Carmel Valley Fire Protection District 2006).

The Carmel Fire District has three stations, and leases an additional site from which equipment is dispatched (Local Agency Formation Commission 2005a).

- Carmel Valley Fire Protection District headquarters and Mid Carmel Valley Fire Station: 8455 Carmel Valley Road (owned by the District).
- Carmel Valley Village Fire Station at 26 Via Contenta Road, Carmel Village (owned by the District).
- Temporary station on the Santa Lucia Preserve (leased by the District). A permanent station on the Preserve is planned.
- Equipment dispatch site (leased by the District).

The District is staffed by a paid staff of 20 employees, a seven-member Board of Directors, and three volunteer battalions with approximately 60 volunteers (Carmel Valley Fire Protection District 2006, Local Agency Formation Commission 2005b). District staff are cross-trained as firefighters and paramedics (Local Agency Formation Commission 2005a). The District has adopted and maintains the following minimum staffing requirements:

1. Carmel Valley Village Fire Station: two personnel with the ranks of Engineer and Paramedic, 24 hours a day, seven days a week.
2. Mid Carmel Valley Fire Station: two personnel with the ranks of Engineer and Paramedic, 24 hours a day, seven days a week.

3. Santa Lucia Fire Station: one person at the rank of Engineer/Paramedic, eight hours a day, seven days a week.

The District operates the following equipment (Local Agency Formation Commission 2005a):

- five fire engines for structure fires,
- four engines for wildland fires,
- two water tenders,
- four ambulances, and
- five command staff vehicles.

Average response time from March to July 2007 at the Mid Carmel Valley Fire Station is just under 6 minutes, and at the Carmel Valley Village Fire Station is just over 7 minutes (Schuler pers. comm).

Cypress Fire Protection District

The CFD provides structural fire protection and emergency medical services to portions of the lower Carmel Valley area, specifically, the mouth of Carmel Valley near Rio Road and Aguajito and Del Monte Fairways (Local Agency Formation Commission 2005b).

The CFD has two fire stations: on Carmel Hill Road and on Rio Road (Carreiro pers. comm.). The station that serves Carmel Valley is located at 3775 Rio Road. CDF staffs the fire station and provides all the needs of the CFD, serving a population of 10,000. The CFD has a staff of nine full-time firefighters and 15 paid-call firefighters, and maintains a contract with the CDF San Benito/Monterey Unit to provide all personnel and management services (Local Agency Formation Commission 2005a).

The CFD personnel provide first response for traffic accidents on Highway 1 and Carmel Valley Road. In 2003, 70% of the 322 emergency calls to the Cypress Fire District were emergency medical service or rescue calls (Local Agency Formation Commission 2005a).

The CFD participates in a mutual aid fire suppression and emergency response agreement with all neighboring fire districts, including Carmel Fire District and CDF (Local Agency Formation Commission 2005b; Carreiro pers. comm.).

Average response time from the station during June and July 2007 was 3 minutes and 10 seconds (Flower pers. comm.).

Salinas Rural Fire Protection District

The Salinas Fire District provides fire protection services and emergency medical services for a portion of unincorporated Monterey County, including a small, primarily wildland area, along Laureles Grade.

The closest fire station, Laureles Station, is at the intersection of Highway 68 and Laureles Grade at 31 Laureles Grade in Salinas, approximately 8 miles from Carmel Valley (Local Agency Formation Commission 2005b; Salinas Rural Fire Protection District 2005).

The Salinas Fire District has 35 paid personnel and 20 volunteer firefighters. Laureles Station is staffed with 3 firefighters 24 hours a day, seven days a week, 365 days a year—a Captain, Lieutenant, and Firefighter—and the station is backed up with personnel at Toro Station, another Salinas Fire District station located approximately 6 miles away along Hwy 68 (Urquides pers. comm.).

At the Laureles Station, the Salinas Fire District operates two fire engines, a Type I engine for responding to large fires, a Type III engine for grass and brush fires, and a breathing support unit with air and light. The station also houses a utility vehicle (Urquides pers. comm.).

The Salinas Fire District has automatic aid agreements with nearby fire districts, including the Carmel Fire District and CDF.

Average response time from the Laureles Station is 7 minutes (Urquides pers. comm.).

California Department of Forestry and Fire Protection

The Monterey-San Benito Unit of the CDF is responsible for forest fire response in Carmel Valley. Most of the Carmel Valley area is considered a State Responsibility Area[1] by the CDF. The valley itself near the Carmel River and the structures are not within the area of state responsibility. Most of the covered area is in a very high or high fire severity zone.

CDF Forest Fire Stations (FFS) near or in the program area are the following:

- Tularcitos FFS, 16650 Cachagua Road, Carmel Valley and
- Carmel Hill FFS, 4180 17 Mile Drive, Pebble Beach.

Tularcitos FFS is open during the fire season, generally May 15 through mid-November. During the rest of the year, Tularcitos staff work out of the Carmel Hill FFS.

During fire season, two wildland fire engines are staffed at Carmel Hill FFS and one at Tularcitos FFS, and additional engines are on call. During the rest of the year, one wildland fire engine is staffed at Carmel Hill FFS, with additional engines on call. CDF also uses a bulldozer at the Monterey-San Benito Headquarters in Monterey, and helicopter and air support.

[1] *CDF State Responsibility Areas* are "[l]ands exclusive of cities and federal lands regardless of ownership, classified by the State Board of Forestry as areas in which the primary financial responsibility for preventing and suppressing fires is that of the State. These are lands covered wholly or in part by timber, brush, undergrowth or grass, whether of commercial value or not, which protect the soil from erosion, retard runoff of water or accelerated percolation, and lands used principally for range or forage purposes" (California Department of Forestry 2001).

Police Protection Services

Office of the Sheriff, Monterey County

The Office of the Sheriff, Monterey County is responsible for police protection in unincorporated areas of the County. The Sheriff's Patrol consists of three regional response areas or stations: Central (Salinas), Coastal (Monterey), and South County (King City). The Office has 86 deputies, 15 sergeants, and three commanders.

The Coastal Station is responsible for police protection services in Carmel Valley, as well as for unincorporated areas of the Monterey Peninsula and approximately 90 miles of the Big Sur coastline. Twenty-two deputies report to the Coastal Station, located on the basement level of the Monterey County Courthouse building in Monterey at 1200 Aguajito Road (Galletti pers. comm.). This station also houses the Office of the Sheriff Search and Rescue Team function.

Three beats generally cover the Carmel Valley area and include, Beat 7, 8A, and 8B. Response times for each beat vary from 12 to 19 minutes. Table 3.10-2 shows average response times for each beat.

Table 3.10-2. Office of the Sheriff Beats Covering Carmel Valley and Average Response Times

Beat	Location	Average Response Time[a]
Beat 7	Hwy 1 from Ocean Avenue to Mal Paso. Carmel Valley Road from Hwy 1 to Rancho San Carlos Road.	12 minutes
Beat 8A	Carmel Valley Road from Rancho San Carlos Road to Laureles Grade, and some areas off Laureles Grade.	16 minutes
Beat 8B	Carmel Valley Road from Laureles Grade to the 38-mile marker, including Cachagua, China Camp, Chews Ridge, and Boettcher's Gap.	19 minutes

Source: Galletti pers. comm.

Notes:

[a] Response times are from a 2003 study. During that time, the Coastal office used single-deputy patrol units on the swing and midnight shifts. Since that time, the requirement for the midnight shift has changed to two Salinas deputies in one patrol vehicle covering Beats 6A, 6B, 7, 8A, 8B, and 9. The change could affect response times for calls for service (CFS) during that shift.

The Office of the Sheriff has one Community Field Office (CFO), located in Carmel Valley Village, which provides office space for officers to write reports and conduct case follow-up by telephone, while remaining easily accessible to the communities. This office is not always manned, nor does it keep specific scheduled hours (Galletti pers. comm.).

The Office of the Sheriff does not normally address traffic issues except as directed by County ordinance. However, the Sheriff's Office does respond to some types of traffic issues. The office is notified of vehicle traffic crashes and

may be dispatched to the scene of an accident to assess injuries or do traffic control if needed. Office of the Sherrif personnel issue citations to those individuals whom they see violating provisions of the California Vehicle Code, and also conduct traffic stops when they suspect a driver of driving under the influence (DUI). Any suspected DUI drivers are then turned over to CHP for the completion of the DUI investigation (Galletti pers. comm.)

California Highway Patrol

The California Highway Patrol (CHP) also provides police protection services. The CHP patrols several County roads (i.e., Carmel Valley Road and Laureles Grade), where they are responsible for traffic issues, violations of California Vehicle Code, and traffic accidents (Galletti pers. comm.). The CHP also provides service to the area for traffic enforcement and vehicular accidents involving injury. The CHP does not respond to violations of penal code (Galletti pers. comm.). The CHP Monterey Dispatch Center is located in Salinas (California Highway Patrol 1997).

Parks

Many public lands surround the proposed program area, including national forest; state parks, beaches, and reserves; and regional, county, and community parks. Public lands of regional interest include the following.

- Los Padres National Forest, including the Ventana Wilderness.
- Pinnacles National Monument.
- Pfeiffer Big Sur State Park.
- Monterey State Historic Park.
- State beaches, including Asilomar and Carmel River State Beaches.
- Point Lobos State Reserve.

Several regional, county, and community parks lie either completely or partially within Carmel Valley. No national forest or California state parks lie within the valley.

Regional Parks

Monterey Peninsula Regional Park District (MPRPD) owns and operates 12 parks in the region surrounding the proposed program area. In Carmel Valley itself, MPRPD owns and operates one regional park: Garland Regional Park. The main entrance of the 4,500-acre park is located 8.6 miles east of SR 1 on Carmel Valley Road. The park extends several miles east and south along Carmel Valley Road to Carmel Valley Village (Monterey Peninsula Regional Parks District n.d.). Day use activities include hiking and jogging, bird watching, photography and painting, horseback riding, and limited mountain bike riding (Monterey Peninsula Regional Parks District 2006).

County Parks

Monterey County Parks Department owns and operates eight parks in Monterey County and one in San Luis Obispo County (Monterey County n.d.[d]; Burgess pers. comm.). One of these, Jacks Peak County Park, is located in the hills north of Carmel Valley, and encompasses approximately 525 acres, with 8.5 miles of trails. Access to the Jacks Peak County Park is from Jacks Peak Road or Loma Alta Road north of Carmel Valley; there is no access from Carmel Valley directly (Monterey County Parks n.d.[e]). Day use activities include hiking, picnicking, and viewing scenery (California Tourism Commission n.d.).

Community Parks and Facilities

The Carmel Valley Park and Recreation District was spawned by the Monterey Peninsula Regional Parks District, after the regional parks district assumed management of the community center in Carmel Valley Village (Monterey Peninsula Regional Parks District n.d.). The Carmel Valley Park and Recreation District owns and operates one community park within Carmel Valley (Local Agency Formation Commission 2005a).

Carmel Valley Community Park encompasses 7 acres, and is located at 24 Ford Road in Carmel Valley Village (Local Agency Formation Commission 2005a; Carmel Valley Community Youth Center 2006). This community park contains open space, barbeque pits, picnic tables, an outdoor stage, volleyball and horseshoe areas, meeting rooms, two public restroom buildings, parking areas, and a community center (the Carmel Valley Community Youth Center) (Local Agency Formation Commission 2005a). Organizing recreational programs and activities is an important function of the Carmel Valley Park and Recreation District, and is done in conjunction with the Carmel Valley Community Youth Center, a not-for-profit organization (Local Agency Formation Commission 2005a; Carmel Valley Community Youth Center 2006). The Youth Center has a pool and offers both recreational swim time and swim classes, in addition to providing facilities for community events such as community meals (Carmel Valley Community Youth Center 2006). The park is viewed as “a first class community park that enhances the “Village” quality of life and reflects the friendly rural character of the Valley” (Monterey Peninsula Regional Parks District n.d.).

Utilities

Electricity and Natural Gas

PG&E is the provider of energy service in Carmel Valley (Coleman pers. comm.). All public electrical energy for Carmel Valley is generated outside the County and is supplied via [underground or overhead] transmission lines, and natural gas is supplied via PG&E’s gas piping system (Pacific Gas and Electric Company 2004).

Water

The primary provider of water in Carmel Valley is California American Water Company (Cal Am). Other sources of water are private wells.

Cal Am's water sources are groundwater from wells located near the Carmel River in both the upper and lower valley, reservoir water, and withdrawals from the Carmel River. Cal Am owns and operates two dams in Carmel Valley: San Clemente Dam and Los Padres Dam (Bowie pers. comm.). San Clemente Dam is about 20 miles upstream from the City of Carmel, and the Los Padres Dam is about 6.5 miles further upstream (Monterey County 2005). San Clemente Dam is nearing the end of its useful life because of siltation (Bowie pers. comm.). These dams provide storage for drinking water for Carmel Valley, in addition to Carmel, Pacific Grove, Monterey, Seaside, and Pebble Beach (Bryant pers. comm.).

Water is distributed through a series of pipelines to service areas. Cal Am owns and operates the water distribution pipelines in Carmel Valley. A water main runs along Carmel Valley Road (Bowie pers. comm.).

Cal Am owns and operates the water treatment plants that treat water supplied to Carmel Valley: the Carmel Valley Filter near the Sleepy Hollow community and Begonia Iron Removal Plant located between Mid-Valley and the mouth of the Carmel River (Monterey County Weekly 2006; Bowie pers. comm.).

Wastewater

The Carmel Area Wastewater District (CAWD) provides, operates, and maintains collection, treatment, and disposal facilities for wastewater to part of the Carmel Valley and surrounding areas. Most wastewater in Carmel Valley is handled through septic systems rather than through a wastewater collection and treatment service (Bowie pers. comm.). The westernmost "mouth" of Carmel Valley receives wastewater service from the CAWD, along with nearby coastal areas and the City of Carmel. CAWD also responds to individual requests for annexation of properties when septic tanks at the mouth of Carmel Valley fail (Local Agency Formation Commission 2005a).

Wastewater is taken to the CAWD wastewater treatment plant at 3945 Rio Road, for processing (State Water Resources Control Board n.d.; Bowie pers. comm.). Its existing capacity for wastewater treatment is 4.0 million gallons per day (mgd) (3.0 mgd permitted). The remaining capacity in 2004 was 1.7 mgd (Monterey County 2004).

The CAWD is governed by a five-member Board of Directors, who are elected for four-year terms (Local Agency Formation Commission 2005a).

Stormwater runoff is regulated by the Monterey County Erosion Control Ordinance and is discussed in detail in Section 3.2, *Hydrology and Water Quality*.

Solid Waste

Waste in the program area is managed by the Monterey Regional Waste Management District (MRWMD). Solid waste, liquid waste (other than wastewater), and green waste and recycling materials are taken to the Carmel Valley Transfer Station at 9 Pilot Road, Carmel Valley, and from the transfer station to the Monterey Landfill. The 315-acre Monterey Landfill is located at the 475–acre Monterey Regional Environmental Park, 14201 Del Monte Boulevard north of Marina and approximately 6 miles from Carmel Valley. Other facilities at the park consist of a materials recovery facility, and a hazardous waste facility (Monterey Regional Waste Management District 2005).

The Monterey County landfill facility has a total capacity of approximately 40 million tons (Monterey Regional Waste Management District n.d.; Flanagan pers. comm.). The facility is expected to remain open until 2107. Hazardous waste is handled by the HHW Collection Program, which sorts out and gives away usable hazardous materials, such as paint, garden products and other usable chemicals; and ships motor oil, antifreeze, batteries, and freon for recycling at remote facilities. The Materials Recovery Facility recovers heavy and inert components from waste in order to reduce the tonnage going to the landfill, targeting "materials brought in from self-haul loads and commercial wastes, construction and demolition debris, woodwaste and yardwastes" (Monterey Regional Waste Management District n.d.).

Regulatory Setting

State Policies and Regulations

The California Integrated Waste Management Board (CIWMB) oversees, manages, and tracks both hazardous and non-hazardous waste generation in California. The principal state regulations governing waste disposal are CCR Title 14 and Title 17. These regulations establish minimum standards for the handling of solid wastes and minimum requirements for information submitted by operators of solid waste disposal sites.

Local Policies and Regulations

Monterey County General Plan

Policy 47.1.2. The County shall assist school districts, where appropriate, in reserving sites for future schools in or near areas of development.

Policy 50.2.1. The County shall encourage the delivery of library services to all areas and residents of the County.

Policy 17.3.1. In no case shall a roadway be less than 12-feet wide. Determination of the width of an all-weather surface shall be made at the time of subdivision approval. Further, the County shall revise its subdivision ordinance to address road standards including minimum width, height clearance, gradient and materials; these standards shall pertain to all new development. Minimum road widths of all new driveways, roads and streets shall be designed, constructed and maintained according to adopted County Standards (Appendix D: Standard Detail, 1977).

Policy 17.3.5. Water systems constructed, extended or modified to serve a new land use or a change in land use or an intensification of land use shall be designed to meet, in addition to the average daily demand, the standards shown in Table 2, subject only to changes authorized pursuant to Policy Number 17.4.2.

Policy 17.3.8. The maximum grade of the road shall not exceed 15 percent.

Policy 17.3.9. The road shall have an overhead clearance of 13 feet, 6 inches vertical distance for its entire width and length, including turnouts.

Policy 17.3.11. Obstruction of the road width (Policy 17.3.1), including the parking of vehicles, shall be prohibited.

Policy 17.3.12. New and reconstructed bridges on tertiary and lesser roads shall be the width of the existing road bed and berms, but in any event no less than 12 feet wide. Bridge width on all roads exceeding tertiary standards shall be not less than the width of two lanes with berms. All bridges shall be designed for HS 15-44 loading (Standard Specification for Highway Bridges) and have guard rails.

Policy 17.3.14. All access roads and driveways shall be maintained by the responsible parties to ensure the fire department safe and expedient passage at all times.

Policy 17.4.2. Every building, structure and/or development shall be constructed to meet, at minimum, the requirements specified in Volume I of the current edition of the Uniform Building Code, Fire Hazards Policy 17.3.5, and Table 2 of this general plan. The chief of the fire agency

having jurisdiction may recommend to the appropriate decision-making authority a variation of the general plan fire hazard policies and Table 2 (but not U.B.C. standards) for such development where, in his opinion, the fire safety of the County and adjoining and nearby properties and improvements is not materially impaired by such variation.

Policy 17.4.6. The County should discourage location of public facilities and aboveground utilities in high or very high fire hazard areas. When unavoidable, special precautions shall be taken to ensure an acceptable level of risk and uninterrupted operation of these facilities.

Policy 17.4.12. A zone which can inhibit the spread of wildland fire shall be required of new development in fire hazard areas to protect development. Such zones should consider irrigated greenbelts, streets, and fuel modification zones in addition to other suitable methods that may be used. The County should not accept dedications of any open space lands required as part of this fire prevention zone.

Policy 41.2. Promote opportunities for shopping, employment, education, health care, and enjoyment of recreational resources through public and/or private transit use.

Policy 41.2.1. Transit use shall be encouraged through land use designations and zoning which cluster areas of employment, areas of parking, areas of commercial use, and recreation areas, where appropriate. Car pool parking areas shall also be encouraged in land use planning and subsequent subdivision/commercial development review.

Policy 41.2.2. Transit and bus parking facilities shall be required at major hotels, motels, convention centers, and other tourist-serving areas.

Policy 39.2.2. The needs of bicyclists, pedestrians, utilities, and drainage shall be considered and, where appropriate, provided for on all public rights-of-way.

Policy 56.1.1. The County shall, when planning for development, provide for utility corridor rights-of-way.

Policy 56.2. Ensure the aesthetic placement of utility lines.

Policy 56.2.1. The County shall, in accordance with the Monterey County Subdivision Ordinance, require that all new utility lines be placed underground.

Policy 56.2.2. The County shall seek to place existing utility lines underground whenever feasible.

Policy 5.2.1. Owners of property adjacent to waterways or responsible agencies shall be encouraged to maintain healthy vegetation along the drainage

course, or provide other suitable means of preventing bank erosion or siltation.

Policy 5.2.2. The County shall establish special procedures for land use, building locations, grading operations, and vegetation removal adjacent to all waterways and significant water features.

Policy 7.2. Encourage the use of drought-resistant plants for landscaping, particularly in water deficient areas.

Policy 17.3.5. Water systems constructed, extended or modified to serve a new land use or a change in land use or an intensification of land use shall be designed to meet, in addition to the average daily demand, the standards shown in Table 2, subject only to changes authorized pursuant to Policy Number 17.4.2.

Policy 21.2. Enhance the quality of water in the County by regulating the type, location, and intensity of land use, and grading operations.

Policy 21.2.1. The County shall require all new and existing development to meet federal, state, and County water quality regulations.

Policy 55.1.1. The County shall support the adopted Solid Waste Management Plan to achieve solid waste management objectives.

Policy 10.1.3. All new and/or expanding wastewater discharges into the coastal waters of Monterey County shall require a permit from the Health Department.

Local Ordinances

Monterey County Code *Title 10 Health and Safety, Chapter 10.41 Solid Waste Collection and Disposal* controls collection and disposal of solid waste in Monterey County. Section 10.41.060 Ownership of solid waste states that solid waste becomes the property of the collector when the collector takes possession of the waste, and the property of the disposal facility when it is delivered there. If the solid waste is not collected, "ownership of the solid waste remains with the generator of such solid waste until it is properly delivered to a licensed disposal facility. (Ord. 4190, 2003; Ord. 2661, 1980)

Criteria for Determining Significance

In accordance with State CEQA Guidelines, applicable federal and state regulations, and local plans and policies, the proposed program would be considered to result in a significant impact if it would:

A. Fire and Police Services

Result in substantial increased demands to maintain acceptable service ratios, response times, or other performance objectives related to fire or police services, which would require new or expanded facilities to maintain acceptable provision of service or result in inadequate emergency access.

B. Emergency Access

Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

C. Wildland Fire Hazard

Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

D. Water Demand

Result in a water demand that exceeds water supplies available to serve the project from existing entitlements and resources, and/or require new or expanded supplies.

E. Infrastructure Capacities

Result in water demand that exceeds capacity of the water supply infrastructure system; or would require substantial expansion of water supply, treatment, or distribution facilities, the construction of which could cause significant environmental effects.

F. Wastewater Treatment

Result in wastewater flows that exceed sewer line or treatment plant capacity, or that contribute substantial increases to flows in existing sewer lines that exceed capacity.

G. Utility Disruption During Construction

Result in prolonged or recurring disruption in the provision of services and utilities, including power, water, and sewer service to residences, businesses, or public service providers during construction of a project.

H. School Enrollments

Result in increased student enrollments that would cause school capacities to be exceeded, or that would substantially increase existing overcrowding in schools, resulting in a need for new facilities.

I. Recreational Demand

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.

Require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

J. Open Space

Diminish the quality or quantity of open space areas.

K. Landfill Capacity

Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.

Impacts and Mitigation Measures

A. Fire and Police Services

Impact PSU-1: Change in Demand for Fire or Police Services Requiring New or Expanded Facilities (Less Than Significant)

The proposed roadway improvements are comprised of minor lane additions, infrastructure improvements (e.g., shoulder widenings, bike lanes, signage) and do not involve construction of major roadway facilities that would result in an

increased demand for fire or police services or expansion or construction of fire or police facilities. Therefore, this impact is considered **less-than-significant**. No mitigation is required. (Potential impacts related to indirect growth inducement resulting from the proposed program are discussed in Chapter 4, *Other CEQA Analyses,* and *Section 3.12, Population and Housing*).

B. Emergency Access

Impact PSU-2: Result in Inadequate Emergency Access (Less Than Significant with Mitigation)

Emergency access could be affected by construction of the proposed roadway improvements; specifically, temporary lane closures and construction-related traffic could delay or obstruct the movement of emergency vehicles on Carmel Valley Road. This impact is considered potentially significant. With implementation of **Mitigation Measure PS-2.1**, construction-related impacts would be reduced to a **less-than-significant** level.

Mitigation Measure PSU-2.1: Implement Construction Traffic Control Plan to Ensure that Construction Does Not Obstruct Emergency Response or Evacuation

The County shall develop a traffic control plan to minimize the effects of construction traffic. The plan will be subject to review and approval by the County. The County will be responsible for monitoring to ensure that the plan is effectively implemented.

The construction traffic control plan will include, but not be limited to the following requirements.

- Notify and consult with emergency service providers and provide emergency access by whatever means necessary to expedite and facilitate the passage of emergency vehicles.
- Maintain two-way traffic flow at all times on area roadways.
- Avoid lane closures on Carmel Valley Road during peak AM and PM traffic periods. If temporary lane closures are required, provide advance construction warning signage and flaggers in both directions to control traffic.
- Provide access for driveways and private roads outside the immediate construction zone by using steel plates or temporary backfill.
- Provide clearly marked pedestrian detours if any sidewalk or pedestrian walkway closures are necessary.
- Provide clearly marked bicycle detours if designated bicycle lanes or heavily used bicycle routes must be closed, or if bicyclist safety would be otherwise compromised.

- Provide crossing guards and/or flagpersons as needed to avoid traffic conflicts and ensure pedestrian and bicyclist safety.
- Use nonskid traffic plates over open trenches to minimize hazards.
- Locate all stationary equipment as far away as possible from areas used by vehicles, bicyclists, and pedestrians.
- Avoid routing construction traffic through residential areas to the extent feasible.
- Prohibit mobilization and demobilization[2] of heavy construction equipment during AM and PM peak traffic hours.
- Prohibit construction worker parking in residential areas.
- Additional stipulations may be developed, depending on the needs of the community.

C. Wildland Fire Hazard

Impact PSU-3: Exposure of People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires (Less Than Significant)

The proposed roadway improvements would not introduce new structures or access to wildland areas, nor would it change the exposure of people or structures to wildland fires. Furthermore, the proposed roadway improvements could improve access from the CDF and other fire protection districts to the Carmel Valley service areas. This impact is considered **less-than-significant**. No mitigation is required.

D. Water Demand

Impact PSU-4: Increased Water Demand that Would Exceed Available Water Supplies and/or Require New or Expanded Supplies (Less Than Significant)

The proposed roadway improvements are comprised of minor lane additions, infrastructure improvements (e.g., shoulder widenings, bike lanes, signage) and do not involve construction of major roadway facilities and do not involve construction of infrastructure that would generate an increase in water demand or need for new or expanded water supplies. Therefore, this impact is considered **less-than-significant**. No mitigation is required. (Potential impacts related to indirect growth inducement resulting from the proposed program are discussed in Chapter 4, *Other CEQA Analyses* and *Section 3.12, Population and Housing*.)

[2] *Mobilization* refers to delivering heavy construction equipment to a site; *demobilization* refers to removing it from the site.

E. Infrastructure Capacities

Impact PSU-5: Increased Water Demand That Would Exceed Capacity or Require Substantial Expansion of Water Supply, Treatment, Or Distribution Facilities (Less Than Significant)

The proposed roadway improvements are intended to alleviate unacceptable traffic levels of service resulting from development in Carmel Valley as governed by the CVMP. As such, they would not directly increase water demand that would exceed existing capacities or require the expansion of existing water supply, treatment or distribution facilities. However, an increase in population resulting from indirect growth enabled by the proposed roadway improvements could lead to an increase in water supply, treatment, or distribution facilities. Any future development project would undergo its own separate CEQA review, which would consider the impact of that project on water demand. This impact is considered **less-than-significant**. No mitigation is required.

F. Wastewater Treatment

Impact PSU-6: Increased Wastewater Flows that Would Exceed Sewer Line or Treatment Plant Capacity (Less Than Significant)

The proposed roadway improvements are comprised of minor lane additions, infrastructure improvements (e.g., shoulder widenings, bike lanes, signage) and do not involve construction of infrastructure that would generate or require the discharge of wastewater flows. Therefore, this impact is considered **less-than-significant**. No mitigation is required. (Potential impacts related to discharge of stormwater flows are discussed in Section 3.2, *Hydrology and Water Quality*.)

G. Utility Disruption During Construction

Impact PSU-7: Utility Disruption During Construction (Less Than Significant with Mitigation)

Construction of the proposed roadway improvements could conflict with existing underground utilities and interrupt service to residents, businesses and government services in Carmel Valley. If water service interruptions are required during utility interruptions, this could also affect fire flows. This impact is considered potentially significant. Implementation of **Mitigation Measure PSU-7.1** would reduce this impact to a **less-than-significant** level.

Mitigation Measure PSU-7.1: Coordinate with the Appropriate Utility Service Providers and Related Agencies to Reduce Service Interruptions

The County will coordinate with the appropriate utility service providers and related agencies prior to commencement of construction activities to avoid conflict with existing utility lines. This coordination may include but not be limited to the following:

- Contact the Underground Service Alert (800/227-2600) (Underground Service Alert North 2006) at least 48 hours before excavation work begins to verify the nature and location of existing underground utilities.
- Notify all public and private utility owners at least 48 hours prior to the commencement of work adjacent to any exiting utility, unless the excavation permit specifies otherwise.
- Coordinate with CalAm as the water purveyor and with the Carmel Valley Fire Protection District, the Cypress Fire Protection District, and the Salinas Rural Fire Protection District, as appropriate, to minimize or eliminate potential water interruptions. Such coordination efforts may include requiring the construction contractor to "hot-tap" existing water lines for new water line connections when possible to maintain service of existing water lines, and isolate construction areas and backfeed water through alternate lines to provide continuous service.
- Coordinate with CAWD, as the sewer agency, to minimize or eliminate potential interruptions of service when connections are made between existing and new sewer lines. Efforts may include coordination with the construction contractor to bypass sewage flows in the affected areas through use of a portable pipeline that connects to unaffected sewage lines.

H. School Enrollments

Impact PSU-8: Increased Student Enrollments That Would Cause School Capacities to be Exceeded or Increase Existing Overcrowding in Schools (Less Than Significant)

The proposed roadway improvements do not involve construction of infrastructure that would generate an increase in student enrollments or resulting changes to school facilities. Future roadway improvements could improve access to existing school facilities. Therefore, this impact is considered **less than significant**. No mitigation is required. (Potential impacts related to indirect growth inducement resulting from the proposed program are discussed in Chapter 4, *Other CEQA Analyses* and *Section 3.12, Population and Housing*.)

I. Recreational Demand

Impact PSU-9: Increased Use of Existing Parks or Other Recreational Facilities, Resulting in Construction or Expansion of Facilities or Leading to Substantial Physical Deterioration (Less Than Significant)

The proposed roadway improvements do not involve construction of infrastructure that would generate an increased demand for recreational facilities. This impact is considered **less than significant**. No mitigation is required. (Potential impacts related to indirect growth inducement resulting from the proposed program are discussed in Chapter 4, *Other CEQA Analyses* and *Section 3.12, Population and Housing*.)

J. Open Space

Impact PSU-10: Diminished Quality or Quantity of Open Space Areas (Less Than Significant)

Some of the proposed traffic improvements could be constructed adjacent to open space areas that could require taking such land for additional right-of-way use. However, the majority of the roadway improvements that could require additional right-of-way encompass single lane additions such as passing lanes and/or turning lanes with the exception of the proposed grade separation project at Laureles Grade and Carmel Valley Road. Large parcels of land are not expected to be taken from adjacent areas such that there would be a diminished quality or use of open spaces. Therefore, this impact is considered **less-than-significant**. No mitigation is required.

K. Landfill Capacity

Impact PSU-11: Increase in Solid Waste Disposal That Would Exceed Current Permitted Landfill Capacity (Less Than Significant with Mitigation)

Construction activities associated with the proposed roadway improvements could increase the generation of solid waste. Waste materials generated may include excavated materials (site soils and sediments), gravel, and roadbed fragments. This impact is considered potentially significant. Implementation of **Mitigation Measure PSU-11.1** would reduce this impact to a **less-than-significant** level.

Mitigation Measure PSU-11.1: Develop a Solid Waste Reuse Plan

The County shall develop a solid waste reuse plan prior to commencement of roadway construction activities. The solid waste reuse plan shall be incorporated into construction documents. The development of the reuse plan shall be coordinated with the County Health Department.

Section 3.11
Cultural Resources

Introduction

This analysis is a preliminary cultural resources sensitivity study based on secondary source materials related to the history, prehistory, and ethnography of Carmel Valley and Monterey County. This analysis assumes that any development on or near a cultural resource may have a significant impact on that resource. Archaeological resources are sensitive to direct impacts from development (e.g., damaging or otherwise compromising the potential for future preservation/study), while architectural and modern cultural resources may be subject to direct or indirect impacts (e.g., damage to structures or changes to their historic setting, respectively).

Due to the programmatic level of environmental analysis conducted for this project, no site-specific surveys or records searches were conducted in preparation of this EIR. Jones & Stokes reviewed the following literature sources to prepare the cultural resources section of this chapter.

- Brandman, Michael and Associates. 2006. Draft Program Environmental Impact Report: Monterey County General Plan 2006. Monterey County, CA. August 18, 2006.
- Breschini Archaeological Consulting. Preliminary Archaeological Reconnaissance for Rancho Cañada Community Partners Housing Site on a Portion of the Rancho Cañada Golf Club in Carmel, Monterey, CA. December 13, 2003.
- Breschini, G. and Mary Doane. Archaeological Consulting. Preliminary Archaeological Reconnaissance for Rancho Cañada Village Extension, Including portions of APN 015-162-016 and APN 015-162-037 in Carmel, Monterey, CA. July 28, 2005.
- Monterey County Municipal Code. Chapters 18.25 and 21.54.

Environmental Setting

The regional conditions for cultural resources consist of the prehistoric and historic contexts of the program vicinity. The following contexts summarize information published in previously prepared reports and other secondary sources.

Prehistoric Background

Recent research models and methods have expanded our knowledge of Central Coast prehistory. Sites such as CA-MNT-234, a prehistoric village site located in Monterey, near Moss Landing and SCR-177, in Scotts Valley, have allowed a tentative reevaluation of the prehistory of this region. For example, recent archaeological undertakings have revealed that the prehistory of this area is much older than originally suspected. The first occupation of the area is well documented around 7,000 B.P. (Before Present) however it is possible that occupation of this area is much older and may exceed 10,000 years (Moratto 1984).

South Bay and Central Coast prehistory is well documented between circa 7,000–5,000 B.P., and is summarized in *California Archaeology*, by Michael Moratto (1984). Many carbon 14 dates (C-14) have been established for this time period. The Monterey Peninsula appears to have been inhabited by hunting and gathering groups. Archaeological evidence of settlements in the hills and along the coast attest to these populations. The toolkits of these individuals tend to include large projectile points, and milling stones, domed scrapers, large utilized flake stones and many bone and shell tools. Archaeological remains such as these suggest an importance on both vegetal and animal subsistence strategies (Moratto 1984).

Between 4000 B.P. and 2000 B.P., the populations of the Central Coast undergo a significant change. A new distinctive pattern develops that is markedly influenced by the Berkeley Pattern. The Berkeley pattern is characterized by widespread use of minimally shaped cobble mortars and pestles, limited use of manos and metates, darts, atlatls, and an increased emphasis on bone tool use. The ratio of grinding implements to shell mounds suggest an emphasis on food gathering both terrestrial and marine, rather than hunting. Burials of this time period are flexed with limited utilitarian grave goods (Moratto 1984).

By 1500 B.P., the Berkeley Pattern transforms into the Augustine Pattern. The Augustine Pattern has attributes of the Berkeley Pattern and displays a shift from spear and atlatl to the use of the bow and arrow. The artifacts from this period demonstrate a proliferation of settlements, intensification of trade, use of clam shell disc beads for monetary exchange, and new levels of social and political complexity. This period is an example of the relationship between increased contact among resident populations and improved environmental conditions (Moratto 1984).

In summary, dates from sites on the Monterey Peninsula range from approximately 1240–480 years B.P. (Bean 1994). Artifacts reveal that the activities at these sites include the exploitation of marine mammals and intensive shellfish processing, and the use of terrestrial resources. Breschini and Haversat were not able to determine if these sites were occupied exclusively by local groups or if certain sites were occupied by inland groups on a seasonal basis. Breschini and Haversat conclude that all of the groups on the area probably had access to these sites at some point (Bean 1994).

Ethnographic Background

At the time of European contact, the San Francisco Bay Area and south to Monterey was occupied by a group of Native Americans whom ethnographers refer to as Ohlone (or Costanoans). The territory of the Ohlone people extended along the coast from the Golden Gate in the north to just beyond Carmel in the south, and up to 60 miles inland (Levy 1978). There is also evidence that the Esselen Tribe was the first group in Carmel Valley and then later got pushed into the inland mountains and south to Big Sur by the Ohlone. The Ohlone were hunter-gatherers who relied heavily on acorns and seafood. They also exploited a wide range of other foods, including various seeds (the growth of which was promoted by controlled burning), buckeye, berries, roots, land and sea mammals, waterfowl, reptiles, and insects (Bean 1994).

Seven Spanish missions were founded in Ohlone territory between 1777 and 1797. While living within the mission system, the Ohlone commingled with other groups, including the Esselen, Yokuts, Miwok, and Patwin. Mission life devastated the Ohlone population (Milliken 1995). It has been estimated that in 1777, when the first mission was established in Ohlone territory, the Native American population numbered around 10,000. As a result of introduced disease, harsh living conditions, and reduced birth rates, the population declined sharply to less than 2,000 by 1832.

After the secularization of the missions around 1830, Native Americans gradually left the missions. Many went to work as wage laborers on local ranchos, in the mines, or as domestic laborers. There was a partial return to aboriginal religious practices and subsistence strategies, but the Ohlone culture was greatly diminished (Levy 1978). Today, descendants of the Ohlone still live in the vicinity of the program area, and many are active in maintaining their traditions and advocating for Native American issues.

Historic Background

Monterey County

Monterey Bay was the focus of several Spanish exploratory expeditions following Juan Cabrillo's initial 1542 discovery of the bay. The bay was named

for Conde de Monterrey, Viceroy of Spain, by Sebastian Vizcaino who sailed into it in 1602. The Franciscans founded three missions (San Carlos Borromeo, San Antonio de Padua, and Nuestra Sonora de Soledad) in what is now Monterey County, and these, along with the Presidio established in the late 1700s and eight large ranchos that formed from land concessions to Spanish army veterans, became focal points of activity.

When the Mexican Republic formed in 1822, the missions were secularized and their land holdings were dispersed to private owners through land grants. An agrarian economy emerged, mostly based on large-scale cattle ranching operations. The local economy received a boost when the Mexican government opened Monterey harbor to foreign trade, enabling rancheros to trade their hides and tallow for products from the outside world. The Custom House in Monterey became the site for collection of duties, providing the main source of income for Alta California's government. This commercial vitality, supported by Monterey Bay's ideal harbor, led to Monterey's role as the Mexican capital of California.

Monterey's importance to Mexican California and excellent harbor geography meant that it continued to play a key role after the United States took control of California in the late 1840s. For example, the convention to draft and sign California's new constitution convened at Colton Hall. This period coincided with the California Gold Rush, and during the 1850s the market for tallow and hides shifted to a demand for beef and grain to feed the population of gold prospectors congregating in San Francisco to the north. At the same time, dairy farming was introduced in the area around Gonzales and Soledad. This enterprise required irrigation to support alfalfa production, a practice based on rudimentary canal systems used earlier by friars at the missions.

Transportation soon became a major factor in supporting the County's growing economy. In 1872, Southern Pacific Railroad extended its line to Salinas from Pajaro and Hollister. As the railroad pushed farther south it opened new markets and stimulated settlement of new towns. From Salinas it extended southward to Chualar, followed by Gonzales and Soledad, as landowners donated right-of-way across their ranches. With this new transport capability, crops could be shipped to market more efficiently. As improved irrigation systems were introduced to the area in the late nineteenth century, combined with additional railroad connections, production of fruits and vegetables replaced dry farming of grains as the leading agricultural products.

In addition to agriculture, by the late nineteenth century, Monterey County became a destination for tourism and resort activities. Three hot spring resorts with hotels developed, at Paraiso, Tassajara, and Slates Hot Springs. Pacific Grove was founded as a religious and cultural retreat, growing from a tent city to a town of small Victorian cottages. In the early 1900s, Pebble Beach was subdivided and became a fashionable summer resort. The area's many golf courses further attracted recreational visitors. In Carmel, Pebble Beach, and Del Monte Forest, the Arts and Crafts movement took hold in local architecture, and the area achieved renown as a colony for artists and writers.

Paleontological Resources

Most of the fossils found in Monterey County are of marine life forms. They form a record of the region's geologic history of advancing and retreating sea levels. These deposits lack the large terrestrial fossils found in other regions due to their marine origin. (Brandman 2006.)

Monterey County's fossils are mainly comprised of microorganisms such as foraminifers or diatoms or assemblages of mollusks and barnacles most commonly found in sedimentary rocks ranging from Cretaceous age (138 to 96 million years old) to Pleistocene age (1.6 million to 11 thousand years old). (Brandman 2006.)

Fossils are found throughout the County because of the widespread distribution of marine deposit, however only 12 sites have been identified in Monterey County as being a significant paleontological resource (Brandman 2006).

Existing Conditions

Archaeological Resources

The program area is known to contain archeological resources related to the region's prehistory. The County General Plan Environmental Resource Management Element includes a map delineating archeological sensitivity throughout the County as either "high," "moderate," or "low." Much of the program area is shown as having high sensitivity, with the remaining area shown as moderate, meaning that while archeological surveys may not have been conducted for the entire area, known or assumed native settlement/activity patterns make archeological resources likely to occur in those areas. There are no areas of low archeological sensitivity in the program area. The areas of high sensitivity are mostly centered around the Carmel River and Carmel Valley.

In addition, the program area may be sensitive for historical archaeological resources related to early settlement of the region including resources from the Mexican, Spanish, and early American periods.

Historical Resources

Carmel Valley includes historic resources listed on inventories of landmarks and historic resources by federal, State, and County agencies.

The County Parks Department maintains an Official Register of Historic Resources that includes sites, structures, and other landmarks that are important to the County's cultural heritage. As of March 2007, this inventory includes six Native American sites, three historic sites, 18 historic structures (including four bridges), and one landmark tree located within Carmel Valley. These resources

and their approximate locations, as listed in the County inventory, are provided below (Clovis pers. comm.).

Native American Sites

1. Ichxenta, San Jose Creek
2. Tecutnut, mouth of Potrero Canyon
3. Socorronda, Mid-Carmel Valley
4. Echilat, San Francisco Flat
5. Sepponet, South of Tularcitos Guard Station
6. Indian Dam Site, Carmel River

Historic Sites

7. Bradley Sargeant Adobe site, Potrero Canyon
8. Inesimo/Meadows Adobe site, Mid-Carmel Valley
9. San Francisquito Adobe site, Rancho San Carlos

Historic Structures

10. Old Carmelo School, North of Schulte Road
11. Meadows Home, North of Schulte Road
12. Farm Center, Robinson Canyon Road at Carmel Valley Road
13. Carmel Valley Rock & Sand Co. Conveyor, behind the Farmer Center
14. Colton Home, Holt Ranch
15. Wright Cabin, Robinson Canyon
16. Los Laureles Lodge, Upper Carmel Valley: Carmel Valley Road past Boronda Road
17. Boronda Adobe, Boronda Road
18. Del Monte Milk Barn, Carmel Valley Village
19. Robles del Dio Lodge, Robles del Rio
20. Rosie's Cracker Barrel, Roles del Rio
21. Bridge #501, Schulte Road at Carmel River
22. Bridge #507 (Boronda Road Bridge), Boronda Road at Carmel River
23. Bridge #508, Esquiline Road at Carmel River
24. Bridge #523, Garzas Road at Garzas Creek

25. Cooper Barn, Garland Park
26. Chalk Rock House, 27200 Los Arboles Drive

Natural Landmarks

27. Descanso Oak site, Carmel Valley Road

Several sites and structures within Carmel Valley are also listed on the California Register of Historical Resources (CRHR). These include:

- Berwick Manor and Orchard
- Boronda Road Bridge (also County-listed)
- 90 Boronda Road
- 10 East Carmel Valley Road
- Carmel Valley Historic Airpark

As indicated above, one structure—the Boronda Bridge—is listed on both the County inventory and the CRHR. In addition to its State listing, the Berwick Manor and Orchard site is also listed in the National Register of Historic Places National Register of Historic Places (NRHP) (listed as registry number 77000309).

Regulatory Setting

Federal Regulations

The National Historic Preservation Act (NHPA) of 1966, as amended, is the primary mandate governing projects under federal jurisdiction that may affect cultural resources. If specific traffic improvement projects implemented under the proposed program are funded by the federal government, then this statute would apply. Section 106 of the National Historic Preservation Act requires that all federal agencies review and evaluate how their actions or undertakings may affect historic properties. Historic properties may include those that are already listed in national registers or that have not yet been reviewed and considered for such. The regulations implementing Section 106 are codified at 36 CFR Part 800 (2001).

The Section 106 review process involves four-steps:

- Initiate the Section 106 process by establishing the undertaking, developing a plan for public involvement, and identifying other consulting parties;
- Identify historic properties by determining the scope of efforts, identifying cultural resources and evaluating their eligibility for inclusion in the NRHP;

- Assess adverse effects by applying the criteria of adverse effect to historic properties (resources that are eligible for inclusion in the NRHP);
- Resolve adverse effects by consulting with the State Historic Preservation Officer (SHPO) and other consulting agencies, including the Advisory Council if necessary, to develop an agreement that addresses the treatment of historic properties.

To determine whether an undertaking may affect NRHP-eligible properties, cultural resources (including archaeological, historical, and architectural properties) must be inventoried and evaluated for listing in the NRHP. 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
>
> a. that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> b. that are associated with the lives of persons significant in our past; or
>
> c. that 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; or
>
> d. that have yielded, or may be likely to yield, information important in prehistory or history.

Ordinarily, properties that have achieved significance within the past 50 years are not considered eligible for listing in the NRHP. However, such properties will be considered eligible if a property that achieved significance within the past 50 years is of exceptional importance.

As codified in 36 CFR Part 800.4(d)(2), if there are historic properties which may be affected by a federal undertaking, the agency official shall assess adverse effects, if any, in accordance with the *Criteria of Adverse Effect* (36 CFR 800.5 (a)(1)). In general, an adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP. Adverse effects include, but are not limited to physical destruction, damage, alterations not consistent with the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (36 CFR part 68), removal, neglect, or change of setting, or the introduction of introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features.

State Regulations

California Environmental Quality Act

CEQA requires that public or private projects financed or approved by public agencies assess the effects of the project on historical resources. *Historical resources* are defined as buildings, sites, structures, objects, or districts, each of which may have historical, architectural, archaeological, cultural, or scientific significance. CEQA requires that, if the project would result in an effect that may cause a substantial adverse change in the significance of a historical resource, alternative plans or measures to mitigate the effect must be considered; however, only significant historical resources need to be addressed. Therefore, the significance of cultural resources must be determined. The following steps are normally taken in a cultural resources investigation for CEQA compliance.

1. Identify cultural resources.
1. Evaluate the significance of the resources.
2. Evaluate the effects of the project on significant resources.
3. Develop and implement measures to mitigate the effects of the project on significant resources.

The CEQA guidelines define three ways that a property may qualify as a significant historical resource for the purposes of CEQA review.

- The resource is listed in or determined eligible for listing in the CRHR.
- The resource is included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC, or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the PRC, unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- The lead agency determines the resource to be significant as supported by substantial evidence in light of the whole record (CCR, Title 14, Division 6, Chapter 3, Section 15064.5[a]).

Each of these ways of qualifying as a significant historical resource for the purposes of CEQA is related to the eligibility criteria for inclusion in the CRHR (PRC 5020.1[k], 5024.1, 5024.1[g]). A historical resource may be eligible for inclusion in the CRHR if it:

- is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- is associated with the lives of persons important in our past;
- embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values; or

- has yielded, or may be likely to yield, information important in prehistory or history.

Properties that are listed in or eligible for listing in the NRHP are considered eligible for listing in the CRHR, and thus are significant historical resources for the purpose of CEQA (PRC Section 5024.1[d][1]).

Other Regulations

Regulations on Human Remains

Records about Native American graves, cemeteries, and sacred places, as well as information about the location of archaeological sites, are exempt from being disclosed to the public under California's equivalent of the Freedom of Information Act (California Government Code Section 6254.10). Such information is considered sensitive and confidential; it should not be presented in a public document.

California Public Resources Code Section 5097.9 states that no public agency or private party on a public property shall "interfere with the free expression or exercise of Native American Religion." It also states the following:

> No such agency or party [shall] cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine…

Treatment of Human Remains

The disturbance of human remains without authority of law is considered a felony. The treatment of human remains is well defined in various California laws and codes. The Native American Heritage Commission (NAHC) acts as a central point of contact for notification of Native Americans and arbitration between the Native American representative and the property owner (who is also the owner of the remains and any associated archaeological materials). The following procedures are set forth in the PRC 5097.98: notification of discovery of Native American human remains, notification of descendants, and disposition of human remains and associated grave goods. The process is as follows.

- Discovery. If human remains were discovered (in either an archaeological or construction context), the County would notify the Monterey County coroner, who would determine whether the remains were suspected to be of Native American origin (California Health and Safety Code 7050.5c). (This is often done in consultation with the archaeological investigator or occasionally in consultation with a forensic or physical anthropologist.) If this determination were made, the coroner would notify NAHC.
- Notification of Most Likely Descendent. NAHC would notify those persons it believes are most likely descended from the deceased Native American.

This is usually a single individual, although for a number of reasons, NAHC may assign more than one Most Likely Descendent. The Most Likely Descendent would likely be on the original consultation list; however, this is not always the case because some individuals have removed themselves from the general consultation list.

- Inspection and Recommendations. The Most Likely Descendent would have 24 hours from the time he or she were contacted to inspect the remains and make recommendations to the County regarding the disposition of the remains. If the Most Likely Descendent failed to make a recommendation or the Most Likely Descendent and the County failed to come to an agreement (with mediation provided by the NAHC, as appropriate), then the County would respectfully re-inter the remains in consultation with the NAHC and the project archaeologist.
- Once the above-described protocols had been applied, excavation of all human remains within areas of direct project impacts would be required prior to any construction for the project. Each burial would be carefully removed using the appropriate excavation techniques conducted by an archaeologist who meets the Secretary of the Interior's standard, in the presence of a Native American Monitor. There would be no intentional disturbance of human remains in the absence of a Native American monitor. The soil matrix surrounding all burials would also be excavated for the recovery of all associated artifacts.

Local Regulations

Monterey County Municipal Code

Title 18 of the Monterey County Municipal Code (Buildings and Construction) includes a chapter (18.25) dedicated to historic resources preservation. The chapter outlines the County's program and policies of protecting, enhancing, and perpetuating structures and districts within the County that are of historic, archaeological, architectural, and engineering significance, and thus of cultural and aesthetic value to the community and an asset to economic, cultural, and aesthetic benefit of the County as a whole. The program outlined in this chapter pertains to property that has not been zoned by the County as a Historic Resources District ("HR"), while property that is so zoned is subject to the regulations set forth in Chapter 21.54, which is discussed below.

The County maintains an inventory of historic resources and districts. According to County policy, an improvement, natural feature, or site within the County may be designated an historical resource and an area within the County may be designated a historic district it meets the criteria for listing on the National Register of Historic Places, the California Register of Historic Resources, or if one or more of several listed conditions pertaining to a site or district's historical, cultural, architectural, and engineering significance, and its unique or valued community and geographic setting are met. County designation of historic resources and districts may be initiated by the County Board of Supervisors, the

County Planning Commission, the County Historic Resources Review Board (Review Board), the Director of the Department of Planning and Building Inspection (Planning Director), or upon application of the owner of the property for which designation is requested, or the authorized representative of the owner. No property is designated as a historic resource without the consent of the property owner. Proposals and applications for historic designation are considered by the Review Board at a public hearing, after which the Review Board makes a recommendation regarding the proposal and designation to the Board of Supervisors, who maintains sole authority to declare an historic resource or historic district.

For structures, sites, or districts listed on the County's register, granting of construction permits and entitlements by the County require application to the Planning Director, a field visit, and an initial determination of the proposed work's effect on a structure's appearance or a district's character. Applications found to affect the appearance or character during this initial review are referred to the Review Board for further investigation. Demolition of a designated historic resource or a structure in a designated historic district is prohibited without one hundred eighty days' prior written notice from the property owner or Planning Director that such act is planned for such structure. Following the receipt of such notice, the Review Board may take such steps as it determines are necessary to preserve the structure concerned.

The chapter also indicates that the Review Board will take appropriate steps to notify all public agencies and public utilities owning or acquiring property—including easements and public rights-of-way—about the existence and character of designated resources and historic districts, and that the Review Board will maintain a current record of such resources and districts with each such public agency and public utility. When construction, alteration, or modification is proposed on publicly owned property that is within a County-designated historic district but that is not subject to the County's permit review procedures, the agency owning such property is encouraged to seek the advice of the Review Board prior to approval or authorization of such work.

Chapter 21.54 of the Monterey County Municipal Code (Regulations for Historic Resources Zoning Districts) applies the "HR" zone to historic resources and requires Use Permit applications for proposed modification to structures and land so zoned. Plans for modifications are referred to the Review Board and Use Permits must be considered for approval by the Planning Commission.

Criteria for Determining Significance

In accordance with State CEQA Guidelines, applicable federal and state regulations, and local plans and policies, the proposed program would be considered to result in a significant impact if it would:

A. Historical Resources

Cause a substantial adverse change in the significance of a historical resource (State CEQA Guidelines Section 15064.5), including physical demolition, destruction, relocation, or alteration of historical resources or their immediate surroundings, such that their significance would be materially impaired. The significance of a historical resource is considered materially impaired when a project demolishes or adversely materially alters those physical characteristics that convey its historical significance and that justify its eligibility for or inclusion in the California Register of Historical Resources (CRHR) or in registers meeting the definitions in Public Resources Code 5020.1(k) or 5024.1(g).

B. Archaeological Resources

Cause a substantial adverse change in the significance of an archaeological resource, or potential disturbance to undiscovered archaeological resources (CEQA 15064.5).

C. Human Remains

Disturb or potentially disturb any undiscovered human remains, including those interred outside of formal cemeteries.

D. Paleontological Resources

Directly or indirectly destroy a unique paleontological resource or site, or a unique geological feature.

Impacts and Mitigation Measures

Impact CR-1: Potential Demolition, Destruction, Relocation, or Alteration of Historical Resources (Significant and Unavoidable)

Architectural Resources

As described under "Environmental Setting," three historic sites, 18 historic structures (including four bridges), and one landmark tree within Carmel Valley are listed on the County inventory of historic resources. Five sites within Carmel Valley are listed in the CRHR, and one site is listed in the NRHP.

The proposed roadway improvement such as lane widenings and/or grade separation, could lead to the demolition or destruction of historical resources including structures and their surroundings and historic sites.

The proposed roadway improvement could also require relocation of historically significant buildings and structures and result in a substantial adverse change to historical resources if specific efforts are not made to maintain historical and structural integrity, setting, and association. The proposed grade separation could also result in visual changes to the environment and adversely impact historical resources. In particular, when viewsheds are character-defining elements, such as historic landscapes, visual changes must be taken into account. Implementation of new roadway facilities may also result in noticeable increases in noise levels. When loud noise (intermittent or constant) is out of character with a historic resource, it may constitute an impact to the integrity of the setting or to the actual structure itself. However, for historic properties at which noise was a normal aspect (e.g., manufacturing plants or railroad resources), increases in noise levels may not be an impact.

Archaeological Resources

Much of the program area is known to have a high or moderate sensitivity for presence of archeological resources related to the region's prehistory due to it's proximity to major water sources and the near by Monterey Bay. Carmel Valley would have been a rich resource base and a very attractive place for Native American settlements. The program area may also be sensitive for historical archaeological resources related to early settlement of the region. Construction of the proposed roadway improvement projects could alter or damage existing archaeological sites or resources within the program area. Alteration or damage of archaeological sites or resources that are considered historically significant under CEQA or NEPA is considered an adverse effect.

As discussed above, demolition, destruction, relocation, or alteration of architectural or archaeological resources within the program area has the potential to damage the eligibility or eligibility potential of these resources for listing in the NRHP or CRHR. Project work also has the potential to affect County-listed resources, and would be subject to project review procedures set forth in Chapter 18.25 of the Monterey Municipal Code. Therefore, this impact is considered potentially significant. Implementation of **Mitigation Measures CR-1.1 to CR-1.6** would reduce these impacts to a **less-than-significant** level. However, if an architectural or archaeological resource cannot be avoided, the resource could be permanently damaged under project implementation. In this case, the impact would be considered **significant and unavoidable**. (Impact CR-2, below, discusses project impacts to previously unidentified buried resources, including disturbance to human remains).

Mitigation Measure CR-1.1: Avoid Historic Architectural and Archaeological Resources

Avoidance is the preferred mitigation measure for all historical resources, but it is often not feasible. When a project has sufficient flexibility, the County should consider avoidance of all historical resources as the primary mitigation measure.

Mitigation Measure CR-1.2: Architectural and Archaeological Resources—Conduct Project-Specific Records Searches, Background Research, and Field Surveys; and Prepare Technical Reports

Before initiating projects, the County shall direct a qualified archaeologist and architectural historian to perform a records search at the Northwest Information Center of the California Historical Resources Information System in Rohnert Park, California, along with a field survey of an individual project area. Analysis and resources identification and subsequent evaluation should be conducted to determine if there are archaeological resources present or potentially buried and which architectural resources are more than 50 years old and historically significant within an individual project area.

These investigations must comply with all applicable federal, state, and local laws and regulations depending upon the specific project. It is important that these studies are conducted as early in the planning stages as possible and always by a qualified archaeologist and architectural historian. It is also important to allocate sufficient time to allow for consideration of a full range of mitigation alternatives, if mitigation is necessary.

At a minimum, archaeological and architectural resource identification and sensitivity assessment studies require that a qualified archaeologist/architectural historian respectively conduct:

- a record search at the official state archive for Monterey County, which is located at the Northwest Information Center of the California Historical Resource Information System in Rohnert Park, California;
- research of other appropriate materials, including historical maps and local documents, library archives;
- consultation with historical societies;
- consultation with the NAHC and interested Native American individuals identified by the NAHC;
- a pedestrian survey or examination of exposed ground surface;
- written documentation of the methods and results of the study in a technical report, an assessment of the sensitivity of the project area for the presence of architectural resources, documentation of archaeological sites or building evaluations on Department of Parks and Recreation 523 forms, and recommendations for further work.

The archaeological sensitivity assessment may be based on the presence of artifacts or features on the ground surface, similarities in topography or geography to other archaeologically sensitive areas, reports of previous discoveries in the area, or evidence revealed during archival or other documentary research. Consultation with various state and federal

agencies, NAHC or other Native American individuals or groups, local historical societies, and other interested or knowledgeable parties may also be required.

If archaeological resources are discovered or if the potential for them to exist in the project area is considered significant, additional work to determine their nature, extent, and significance may be necessary. Such work is conducted to establish whether the archaeological resources appear to meet the criteria for inclusion in the NRHP or CRHR. This work should be conducted according to applicable federal or state guidelines and regulations, in consultation with the lead agency and other appropriate agencies and individuals, and by a qualified archaeologist. Evaluations of the significance of archaeological sites usually include, but are not limited to:

- additional archival research;
- preparation of a research design and treatment plan for any discovered resources;
- excavation or other types of fieldwork;
- analysis of artifacts and other data;
- special studies, such as obsidian hydration, geomorphological, or palynological studies;
- preparation of a technical report; and
- appropriate archival curation of the artifacts and accompanying data.

The technical report should document the methods and findings of the archival and field research; evaluate the ability of the site to meet the criteria for inclusion in the NRHP or CRHR; and make recommendations, if necessary, for mitigation of project impacts on any significant sites. Archaeological sites are most often determined eligible for inclusion in the NRHP or CRHR based on data recovered during excavation, not solely on the basis of surface finds or archival research.

Mitigation Measure CR-1.3: Architectural Resources—Conform to the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings in the Event of Relocation

The County shall ensure that any alterations to historic buildings or structures conform to the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings. Implementation of this measure should be combined with project design review to ensure compliance. (This mitigation measure is solely applicable to historic architectural resources and is not appropriate for archaeological resources.)

Mitigation Measure CR-1.4: Architectural and Archaeological Resources—Review Project Design

The County shall consider redesigning or modifying project designs to reduce or avoid potential impacts on historical resources (including archaeological resources), particularly when the impacts are visual- or noise-related (e.g., maximizing the distance between new construction and historic resources, using soundwalls with vegetative screening, and limiting the height of a new building or structure). Parties involved in project design review may include but are not limited to lead agency officials or a local landmarks commission, depending on the project and the affected resource. The County shall consult with local Native American groups when sacred or traditional cultural properties, or sites containing human remains would be affected.

Mitigation Measure CR-1.5: Archaeological Resources—Recover Archaeological Data

After identification and evaluation efforts by a qualified archaeologist, if an archaeological site is determined to meet the criteria for inclusion in the NRHP or CRHR and if avoidance or redesign of the project is not feasible, research and fieldwork to recover and analyze the data contained at that site should be conducted. This effort may involve additional archival and historical research; excavation; analysis of artifacts, features, and data discovered; presentation of the results in a technical report; and curation of the recovered artifacts and accompanying data. Consultation with the Advisory Council on Historic Preservation, the SHPO, and other interested or knowledgeable parties may be required.

Mitigation Measure CR-1.6: Architectural Resources—Document Historical Resources Through Public Interpretation

If historical resources cannot be avoided, the County shall consider documentation of these resources by public interpretation. Public interpretation may include, but is not limited to the establishment of plaques, Web sites, brochures, museum exhibits, and public art. This type of mitigation seeks to engage the public directly regarding the historical significance of a resource and its importance to the community.

Impact CR-2: Potential Disturbance to Previously Unidentified Buried Archaeological Resources (Less than Significant with Mitigation)

Ground disturbing activities such as grading, trenching, and/or excavating have the potential to adversely affect unknown buried archaeological resources, including the discovery of human remains or paleontological resources. There is always the possibility that previously unrecorded sites will be disturbed during construction of the proposed traffic improvement projects. This impact is considered potentially significant. Implementation of **Mitigation Measures CR-2.1 to 2.4** would reduce this impact to a **less-than significant** level.

Mitigation Measure CR-2.1: Conduct Geomorphological Analysis on Specific Project Basis and Conduct Archaeological Test Excavations for Projects that are Determined To Be Located in Highly Sensitive Areas

Due to the high sensitivity for the presence of prehistoric archaeological resources and the geomorphological setting of the program area, there is a strong likelihood that buried archaeological resources could be present throughout the program area. Buried Resources analysis should be conducted for all specific projects, which examine the soils and geomorphology of each specific project area. In areas that are considered highly sensitive for buried resources, mechanical archaeological test excavations may be necessary to identify buried deposits.

Mitigation Measure CR-2.2: Archaeological Resources—Stop Work If Buried Cultural Deposits Are Encountered During Construction Activities

If buried cultural resources such as chipped stone or groundstone, historic debris, building foundations, or human bone are inadvertently discovered during ground-disturbing activities, work will stop within a 100-foot radius of the find until a qualified archaeologist can assess the significance of the find and recommend additional treatment measures appropriate to the nature of the find. The County will be responsible for ensuring that treatment measures are implemented, in accordance with the archaeologist's recommendations.

Mitigation Measure CR-2.3: Conduct Archaeological Monitoring During Ground Disturbing Activities Within the Specific Project Area During Construction

The alluvial plain of the Carmel River Valley is highly sensitive for the presence of buried prehistoric archaeological resources, which do not have surface expression and are, therefore, extremely difficult to identify through a simple field survey. Due to the sensitive nature and location of the project area, there is a strong possibility that buried prehistoric archaeological materials could be discovered during ground disturbing activities during the construction phase of the project. An archaeological monitor would enable efficient resource identification and minimize impacts to buried deposits if present.

Mitigation Measure CR-2.4: Archaeological Resources—Stop Work If Human Remains Are Encountered During Construction Activities

If human remains are encountered during construction, the County Coroner will be notified immediately, as required by County Ordinance No. B6-18. A qualified archaeologist will also be contacted immediately. If the County Coroner determines that the remains are Native American, the Coroner will then contact the Native American Heritage Commission, pursuant to Section 7050.5[c] of the California Health and Safety Code.

- S/he will also contact the County Coordinator of Indian Affairs. There will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie human remains until the County Coroner has determined that no investigation of the cause of death is required; and, if the remains are of Native American origin,
- the descendants of the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work for means of treating or disposing of with appropriate dignity the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98;
- unless the Native American Heritage Commission was unable to identify a descendent or the descendent failed to make a recommendation within 24 hours after being notified by the commission.
- According to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Sec. 8100), and disturbance of Native American cemeteries is a felony (Sec. 7052).

Mitigation Measure CR-2.5: Paleontological Resources—Stop Work If Vertebrate Remains Are Encountered During Construction

If vertebrate fossils are discovered during construction, work will stop within a 100-foot radius of the find until a qualified professional paleontologist can assess the nature and importance of the find and recommend appropriate treatment. Treatment will include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection, and may also include preparation of a report for publication describing the finds. The County will be responsible for ensuring that the paleontologist's recommendations regarding treatment and reporting are implemented.

Impact CR-3: Expose Buried Archaeological Resources Due to Long-Term Use and Exposure (Less than Significant with Mitigation)

Long-term use of a specific project area could result in the exposure of buried archaeological resources that were not visible or uncovered during archaeological survey, or construction of the specific project. This could result from heavy human use, foot traffic, vehicular traffic, maintenance or construction activities, and any activities that could cause erosion within the specific project. This impact is considered potentially significant. Implementation of **Mitigation Measures CR-3.1** would reduce this impact to a **less-than significant** level.

Mitigation Measure CR-3.1: Consult with Qualified Archaeologist to Identify the Resources and Assess the Impacts

If archaeological resources are uncovered as a result of long-term use of a specific project area, resulting from the implementation of a specific project, the County will consult with a qualified archaeologist to identify the resource, assess the potential significance of the discovery, and assess and mitigate the impacts as appropriate to the resources and level of impacts, as required by CEQA or NEPA.

Section 3.12
Population and Housing

Introduction

This section provides a discussion of the population and housing issues related to the proposed roadway improvements. This section includes a review of existing conditions based on available literature and a summary of federal, state, and local policies and regulations related to population and housing. Analyses of environmental impacts are discussed, and where feasible, mitigation measures are recommended to minimize or avoid potentially significant impacts.

Approach and Methodology

The following assessment is based on housing, employment, and population data gathered from the following sources:

- U.S. Census Bureau,
- 2000 U.S. Census,
- Monterey County,
- Association of Monterey Bay Area Governments (AMBAG) projections and land use assumptions, and
- Local planning documents.

The locations of proposed roadway improvements were reviewed to determine the potential for the improvements to result in increased growth. Areas of potential residential displacement resulting from the proposed improvements were conceptually identified based on General Plan land use designations and a windshield survey of the area.

Growth-inducing impacts and cumulative population and housing impacts are discussed in Chapter 4, *Other CEQA Analyses*.

Environmental Setting

This section discusses existing conditions related to population and housing in the program area and relates these characteristics to significance criteria used to assess potential program impacts.

Population Trends

Carmel Valley is an unincorporated part of Monterey County. According to the U.S. Census, Monterey County's total population in 2000 was 401,762 people, which represents about a 13% increase from the 1990 Census. About 1.5% of Monterey County's population, or 6,281 people, resided in Carmel Valley in 2000. Table 3.12-1 shows population numbers in 2000 and projected population for 2030 based on U.S. Census data for the County, three major population centers within the County, and Carmel Valley.

Table 3.12-1. Population Trends in Monterey County by Area

	Population, 2030 estimate	Population, 2015 estimate	Population, 2000	Population, 1990
Monterey County	602,731	412,104	401,762	355,660
Salinas	187,876	148,183	151,060	108,777
Monterey		29,960	29,674	31,954
Carmel-by-the-Sea	3,945	3,924	4,081	4,239
Carmel Valley CCD (Census County Division)	N/A	N/A	6,281	5,559
Carmel Valley Village CDP (Census Designated Place)	N/A	N/A	4,700	4,407
Remainder of Carmel Valley CCD	N/A	N/A	1,581	N/A
Unincorporated Monterey County	135,375	114,776	100,252	94,254

Sources: U.S. Census Bureau, 2004 Population Estimates, Census 2000, Census 1990 (from U.S. Census Bureau n.d.); Monterey County 2003, from AMBAG's 1997 *Regional Population and Employment Forecast.*

Notes:

a. AMBAG projections data, 2004; U.S. Census data 2000. U.S. Census data 1990.

Between 2000 and 2030, the population of Monterey County is expected to increase with an average annual growth rate of 1.67% (AMBAG 2004). This will lead to an overall 50% increase in population by the year 2030.

Race and Ethnicity

Monterey County is an ethnically diverse community. In the 2000 Census, approximately 40% of the population in Monterey County identified themselves as "white." Approximately 46% identified themselves as "Hispanic or Latino" of any race. Table 3.12-2 shows percentage of population in Monterey County by race, actual numbers for 2000, and projections for 2004 from the U.S. Census 2000.

Table 3.12-2. Population Trends in Monterey County by Race

Race	Population, 2004 estimate	Percentage, 2004 estimate	Population, 2000	Percentage, 2000
One race				
White	211,263	53.9%	224,682	55.9%
Black or African American	8,953	2.3%	15,050	3.7%
American Indian and Alaska Native	4,545	1.2%	4,202	1%
Asian	26,680	6.8%	24,245	6%
Native Hawaiian and Other Pacific Islander	1,870	0.5%	1,789	0.4%
Some other race	127,277	32.5%	111,782	27.8%
Total one race	380,588		381,750	
Two or more races	11,604	3%	20,012	5%
Total population	**392,192**		**401,762**	
Hispanic or Latino (of any race)	199,828	51%	187,969	46.8%

Source: U.S. Census Bureau 2000a.

Housing

According to U.S. Census data, in 2000 there were 131,708 housing units in Monterey County, with 121,236 households (U.S. Census 2000 and California Department of Finance 2002 cited in Monterey County 2003). Approximately 55% of those housing units were owner-occupied and about 45% were renter-occupied (U.S. Census 2000e). In contrast, in 2000 Carmel Valley contained 2,919 housing units (U.S. Census 2000d). Approximately 70% of those housing units were owner-occupied and approximately 30 percent were renter-occupied (U.S. Census 2000e).

Monterey County's percentage of population that resides in unincorporated areas, such as the program area, has decreased since 1980: according to the U.S. Census data, in 1981, 29% of Monterey County residents lived in unincorporated areas; in 1990, 28%; and in 2000, 25% of the County's residents lived in unincorporated areas.

In support of the land use forecasting for the traffic study for the CVMP, the County audited approvals of subdivisions, single-family dwelling units, and adjunct units in the CVMP area from 1987 to 2006. The CVMP established a limit of 1,310 new dwelling units for development after 1986.

Accounting for all unit approvals since 1986, the County has approved an estimated 777 new dwelling units out of the 1,310-unit quota, leaving 533 units for future buildout under the current limits in the CVMP. Of the 777 units approved after 1986 until the present, an estimated 655 units were not built as of 2000. The methodology and data supporting these estimates is presented in Appendix F.

Adding the 655 approved but unbuilt units and the 533 potential future units to the 2,919 units indicated in the 2000 census, at buildout, Carmel Valley would have 4,107 residential dwelling units, which would be an increase of 41% above the 2000 level. Of this growth, 22% would be due to buildout of previously approved projects and 18% due to approval of future development within the CVMP residential quota. Based on the number of households and population in the 2000 census (6,281/2,919), the average household has 2.2 persons. Using this average, residential buildout could result in an increase in population of about 2,614 persons after 2000 (of which 1,441 would be from previously approved development and 1,173 would be from new development). Using these estimates, the CVMP buildout population would be approximately 8,895 persons.

Regulatory Setting

Local Policies and Regulations

The Monterey County General Plan, Greater Monterey Peninsula Area Plan, and Carmel Valley Master Plan guide development in the program area. The Monterey County General Plan encompasses all of the unincorporated areas in the County. The following discussion summarizes the goals and policies of the relevant general and area plans with respect to population and housing.

Monterey County General Plan

Policy 27.2.1: Residential areas shall be located with convenient access to employment, shopping, recreation, and transportation. High density residential areas should also be located with convenient access to public transit.

Policy 27.2.2: Adequate circulation rights-of-way shall be delineated within each residential area.

Policy 28.2.1: In areas of anticipated commercial growth and expansion, provision shall be made for designation of access routes, street and road rights-of-way, off street parking, and pedestrian walkways.

Policy 28.2.2: Commercial areas shall be designated in a manner which offers convenient access.

Policy 28.2.3: Provision shall be made, wherever possible, for separate facilities adequate for the movement of pedestrians, transit vehicles, automobiles, and service vehicles.

Policy H-6.1: Regional Allocation- The County shall ensure that there is sufficient developable land at appropriate densities with adequate infrastructure to accommodate 2,511new units within unincorporated areas from 2002-2008 (Monterey County Housing Element 2003).

Greater Monterey Peninsula Area Plan

The Greater Monterey Peninsula Area Plan is a subset of the Monterey County General Plan, and covers one of eight subareas within Monterey County. The Greater Monterey Peninsula Area Plan does not contain any additional policies or language pertinent to the population and housing-related aspects of the roadway improvement projects beyond those specified in the Monterey County General Plan.

Carmel Valley Master Plan

As part of the County's effort to implement traffic standards to provide adequate streets and highways in Carmel Valley, CVMP Policy 39.3.2.1 (d) places a moratorium on any development in which the approval would significantly impact roads in the CVMP area. A significant impact is one in which it would cause roads to reach a level of service (LOS) C or below, unless and until an EIR is prepared which includes mitigation measures necessary to raise the LOS to an acceptable level and appropriate findings as permitted by law are made which may include a statement of overriding considerations. To defer approval if there is significant impact means that, at a minimum, the County will not approve development without such an EIR where the traffic created by the development would impact the LOS along any segment of Carmel Valley Road (as defined in the Keith Higgins Traffic Report which is part of the EIR for the Carmel Valley Master Plan "CVMP") to the point where the LOS would fall to the next lower level (Monterey County Board of Supervisors 2002). The moratorium includes limits on housing development in the program area. The complete CVMP policies are provided in Appendix C.

In accordance with CVMP Policy 39.3.2.1, in 2002, the Monterey County Board of Supervisors, Resolution 02-024 established a policy that residential and commercial subdivisions proposed in the CVMP area be denied pending the construction of left turn pockets on Segments 6 and 7 of Carmel Valley Road (from Robinson Canyon Road to Rancho San Carlos Road), the construction of capacity-increasing improvements to State Highway 1 between its intersections with Carmel Valley Road and Morse Drive, and adoption of updated General

Plan/Master Plan policies relating to LOS on Carmel Valley Road. This policy is intended to remain in place until adoption of an updated General Plan for Monterey County, or such other period as may be extended by future Board Action.

The proposed program analyzed in this EIR includes removal of the subdivision moratorium adopted in resolution 02-024, which is possible once certain identified conditions are met. As described in *Chapter 2, Program Description*, these conditions will be met shortly, which could allow removal of the moratorium.

Chapter 2, *Program Description*, describes the program's Traffic Study results regarding CVMP area LOS. The Traffic Study (refer to Appendix F) found that for Carmel Valley Road at Carmel Valley Village (Segment 3), the LOS under all traffic study scenarios would be LOS D and would not meet the LOS standard of C for this segment. While several physical traffic improvement options were identified, none are considered consistent with the overall direction and policies of the CVMP. The proposed program includes the proposal to lower the LOS standard for Segment 3, through Carmel Valley Village, from C to D, instead of pursuing physical roadway improvements that are considered likely to result in substantial disruption to the commercial areas in the center of the Village.

Criteria for Determining Significance

In accordance with CEQA, State CEQA Guidelines, applicable local plans, and agency and professional standards, a project impact would be considered significant if the proposed transportation improvement program would:

A. Induce Population Growth

Induce substantial population growth in an area, either directly or indirectly.

B. Cause Displacement of People or Housing

Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

Impacts and Mitigation Measures

A. Population Growth

Impact PH-1: Induce Substantial Population Growth (Less than Significant)

The proposed roadway improvements include provision for construction of passing lanes, turning lanes, shoulder widening, upgrading bicycle lanes, one grade separation project, and other minor roadway modifications such as paved turnouts, signalization, and placement of new roadway signage within the Carmel Valley Road corridor. The proposed program if implemented would enable development, including planned residential and commercial development, to proceed in the program area, which would accommodate future population growth in the area. As described in Chapter 2, *Program Description*, the implementation of the proposed traffic improvements would address the deficiencies in the level of service along Carmel Valley Road and would create a circulation system that can handle the projected residential, visitor-serving, and commercial buildout of Carmel Valley according to the CVMP.

The proposed program would be in accordance with the subdivision moratorium as the construction of left turn pockets on Segments 6 and 7 of the Carmel Valley Road (from Robinson Canyon Road to Rancho San Carlos Road) are nearing completion, capacity-increasing improvements to State Highway 1 (in the form of the climbing lane) have been completed, and this program includes the adoption of updated General Plan/Master Plan policies relating to LOS on Carmel Valley Road. Completion of the proposed program, in combination with actions that have already occurred outside the scope of this program, would meet the requirements of CVMP Policy 39.3.2.1, allowing buildout development in the program area to proceed as planned in the CVMP.

As described above, residential buildout could result in an increase in population of 2,614 persons above 2000 (of which 1,441 would be from previously approved development and 1,173 would be from new development). These roadway improvements are proposed to address LOS deficiencies in the program area and to allow approved development to proceed in accordance with General Plan and CVMP policies. According to AMBAG, Monterey County is expected to experience a 50 percent growth increase between the planning years 2000 and 2030 (AMBAG 2004). Specifically, Unincorporated Monterey County (which includes Carmel Valley) is anticipated to experience a 35 percent growth increase (a population increase of 35,123) between the planning years 2000 and 2030 (AMBAG 2004) and Carmel Valley is would experience a 41% increase between 2000 and 2030 with CVMP buildout. Although the proposed program would enable some portion of the anticipated growth in Monterey County to occur, the implementation of these roadway improvements in and of themselves would not result in unplanned population growth in Carmel Valley and Monterey County, but rather alleviate existing and future projected traffic congestion within the Carmel Valley Road corridor and allow planned growth to occur in compliance

with the existing CVMP. Therefore, this impact is considered **less-than-significant**. No mitigation is required.

B. Cause Displacement of People or Housing

Impact PH-2: Displace Existing Housing or Population (Less than Significant With Mitigation)

Most of the proposed traffic improvements would occur along existing roadways within existing right-of-way and would not displace any residences or individuals. A proposed grade separation at Laureles Grade and Carmel Valley Road, if implement, could potentially require acquisition of new right-of-way from adjacent residential areas resulting in displacement of existing housing and/or residents. This impact is considered potentially significant. Implementation of **Mitigation Measure PH-1.1** would reduce this impact to a **less-than-significant** level.

Mitigation Measure PH-1.1: Comply with Uniform Relocation Assistance and Real Property Acquisition Policies Act

To compensate for any required displacement of housing or people, or business or employees due to right-of-way acquisitions of adjacent occupied properties, the County shall comply with relocation assistance procedures as required by the Uniform Relocation Assistance and Real Property Acquisition Policies Act.

Chapter 4
Other CEQA Analyses

Introduction

This chapter contains analyses of the proposed program's potential to contribute to cumulative impacts in the region, induce growth, and result in significant, irreversible environmental changes. Resource topics for which no significant cumulative impacts were identified are also included in this chapter.

Key data sources reviewed in the preparation of this chapter include:

- CVMP Traffic Study prepared by DKS Associates (DKS 2007);
- 1982 Monterey County General Plan;
- Carmel Valley Master Plan.

Cumulative Impacts

CEQA Requirements

Section 15130 of the State CEQA Guidelines requires lead agencies to evaluate a proposed undertaking's potential to contribute to cumulative impacts in the project or program area.

Cumulative impact refers to the combined effect of "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Sec. 15355). As defined by the state, cumulative impacts reflect:

> [t]he 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 Sec. 15355[b]).

CEQA requires the lead agency to identify projects and programs related to the undertaking being analyzed and to evaluate the combined (cumulative) effects of

those related projects on the environment. If cumulative impacts are identified as significant, the lead agency must then assess the degree to which the proposed undertaking would contribute to those impacts and identify ways of avoiding or reducing any contribution evaluated as "cumulatively considerable" (State CEQA Guidelines Sec. 15130[b]). Lead agencies may use a "list" approach to identify related projects, or may base the identification of cumulative impacts on a summary of projections in an adopted general plan or related planning document.

Assumptions

The following assumptions were used in the analysis of cumulative impacts.

- A cumulatively considerable impact occurs only if the proposed program would contribute something to the total effect. A cumulatively considerable impact is more likely to occur if either the program's contribution and/or the prevailing negative conditions are substantial.
- Pursuant to CEQA Guidelines Sections 15064 and 15130, a project's incremental contribution to a cumulative impact is not cumulatively considerable if the project would comply with the requirements of a previously approved plan or mitigation program that provides specific requirements that would substantially lessen the cumulative problem, or if the project would contribute its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.
- All direct effects of the proposed program have the potential to contribute to cumulatively considerable impacts, even if they are individually less than significant.
- The geographic region affected by cumulative impacts varies by resource; for instance, the region affected by cumulative air quality impacts may be larger than the region affected by cumulative noise effects.
- This analysis incorporates past projects by acknowledging their contribution to existing negative or sensitive conditions.

Potential Plans, Programs, and Projects with Related or Cumulative Impacts

The potential for program-generated effects to contribute to a significant cumulative impact would arise if several projects with similar effects were being constructed concurrently with the proposed program within the same geographic area. This geographic area may vary, depending on the issue area discussed and the geographic extent of the potential impact.

Approach

Cumulative Buildout in CVMP Area

The proposed program considers cumulative conditions in its assessment of cumulative impacts. The cumulative conditions are based on the buildout assumptions of the CVMP analysis (see Appendix F — Traffic Study) and the Association of Monterey Bay Area Governments (AMBAG) Model. The buildout year is assumed to be 2030.

Residential Development Assumptions in the CVMP

For this cumulative analysis, the following residential development is accounted for in the CVMP area:

- Residential Units approved before 1998, but not built as of 2000 - 428 units (of which 140 are inside the CVMP) including unbuilt units in the Rancho San Carlos/Santa Lucia Preserve[1].
- Residential Units in approved subdivisions from 1998 to 2006 - 152 units from 1998 to 2005 and the September Ranch approval in 2006.
- Residential Units approved from 1999 – 2005 - A total of 75.5 SFDs and adjunct units that received building permits on existing lots from 1999 to 2005 and are presumed unbuilt by 2000. Building permits were also issued for a total of 34 SFDs and adjunct units on lots subdivided after 1987; these units were assumed to be included in the approved subdivision totals noted above.
- Residential Units approved after 2006 - CVMP policy allows up to 1,310 total units to be built after 1986. Per County data, of building permits issued between 1986 and 2005, building permits were issued for a total of 334.5 single family dwelling units and 120.5 adjunct units on lots in existence prior to January 1, 1987 for a total of 455 units. From 1986 to 2006, the County approved an estimated 322 units in subdivisions in the CVMP. Thus, from 1986 to 2006, the County has approved 777 units, which leaves a remaining residential unit quota of 533 units. There are 390 vacant parcels designated for residential use within the CVMP area. Removal of parcels designated for incompatible uses, parcels with known locations of approved but not yet built subdivisions, and parcels with substantive development leaves 302 remaining vacant parcels within the CVMP area. All future residential units were presumed to be on residentially-designated vacant lots, unless specifically assumed otherwise.

[1] Although much of the Preserve is outside the CVMP area, the unbuilt units directly place traffic in the CVMP area; however the Preserve units outside of the CVMP area (288 units) do not count against the CVMP residential cap.

Visitor-serving and Commercial Development Assumptions in the CVMP area

Visitor-serving developable parcels are based on the visitor-serving or commercially zoned parcels greater than 1 acre, with less than $100,000/acre improvements and total improvement value of less than $5 million. For this cumulative analysis, the following visitor-serving and commercial development is accounted for:

- Approved visitor-serving projects that had not yet been built as of 2000 or were approved after 1998 - 108 units.
- New Visitor-Serving Units - Accounting for past approvals, the CVMP will allow 285 visitor-serving units after 2006. All future visitor-serving units will be on commercially-designated vacant lots. The Carmel Valley Ranch application to convert 144 existing hotel units into 144 individually-owned hotel units was not assumed to result in additional traffic.
- Commercial Growth - The AMBAG model assumptions for commercial growth in the CVMP area were used. The AMBAG model forecasts 3,457 additional employees in the CVMP area between 2000 and 2030. The AMBAG model did not include any increase in employees related to visitor-serving units, which are covered by the assumptions noted above related to the 285 visitor-serving units.

Cumulative Buildout in Monterey County

Buildout of the 1982 *General Plan* with the amended Housing Element adopted in 2003, would allow up to 13,570 new dwelling units in the County, approximately 1,054 acres of commercial development, and the creation of an estimated 8,151 jobs (Michael Brandman Associates 2006). This amount of potential growth was used in the assessment of cumulative impacts other than traffic, air quality, and noise.

For growth outside the CVMP, the assumptions in the AMBAG model were used for traffic analysis for 2030 conditions and as a result were also used for the assessment of air quality and noise impacts (which are linked to traffic impacts).

Evaluation of Program Contribution to Cumulative Impacts

Analysis of cumulative impacts covers the CVMP area, as well as Monterey County. The proposed program does not contain site-specific project footprints for which a precise direct area of effect can be determined. Each specific improvement proposed under the program would be required to undergo individual environmental review, under which project footprints and direct areas of effect would be evaluated. In general, site-specific impacts would vary according to the project site's constraints, project-specific activities, and duration of construction. However, the general character of program impacts presented in

Chapter 3 is used to assess the potential for considerable contributions to significant cumulative impacts in the analysis below.

Geology, Soils, and Seismicity

Cumulative Impact GEO-1: Cumulative Impacts of Development on Geologically Hazardous Areas (Less than Considerable Contribution with Mitigation)

Cumulative impacts related to geology and soils could occur where regional development patterns place structures and occupants in areas susceptible to geological hazards. A jurisdiction's general plan process includes the mapping of such areas in order to influence development patterns away from particularly hazardous locations or to identify where special study and architectural/engineering measures would be required to ensure building safety. Regional geological concerns include seismic ground cracking, intense seismic shaking, soil liquefaction, slope stability, and soil shrinking/swelling. Local general plans, including that of Monterey County, require the preparation of geotechnical reports for development projects with potential geologic hazards. These reports identify potential hazards associated with projects and recommend policies and measures to be followed to ensure structural safety.

Due to widespread seismic activity within California, past, present, and future development continues to place structures and residents/occupants in areas that are susceptible to seismic ground shaking. Strict building code regulations are in place to ensure that structures properly account for seismic shaking and other seismically related hazards. Common adherence to mandatory building code regulation throughout the region would prevent a significant cumulative impact associated with placing new structures on land susceptible to geologic hazards. Given that the proposed program would comply with these established policies, the program would not contribute considerably to a cumulative impact.

Cumulative Impact GEO-2: Cumulative Accelerated Runoff, Erosion, and Sedimentation (Less than Considerable Contribution with Mitigation)

As described in Section 3.1, *Geology, Soils, and Seismicity*, of this EIR, impacts on runoff, erosion, and sedimentation would be considered less than significant with the implementation of mitigation measures. Additionally, any new development would be required to adhere to City, County, state, and federal requirements for the containment of runoff, erosion, and sedimentation as part of the CEQA process. These impacts can be mitigated at the project level, and thus implementation of the program would not contribute considerably to a cumulative runoff, erosion, or sedimentation impact.

Cumulative Impact GEO-3: Cumulative Significant Hazards to the Public or Environment (Less than Considerable Contribution with Mitigation)

Cumulative impacts related to hazards and hazardous materials could occur where development patterns place structures and residents/occupants in proximity to significant sources of safety hazards or hazardous materials, emissions, or where regional patterns develop new cumulatively hazardous sources near sensitive receptors.

The construction of the projects contained within the proposed traffic improvement program would require the use and temporary storage of hazardous materials. In addition, areas proposed for construction may contain hazardous material sites or buried contamination. Hazardous material treatment, transport, and storage are highly regulated by city, county, state, and federal regulations. While the proposed program would not contribute directly to significant hazards, the potential exists for accidental release due to vehicle accidents during operations, construction-related spills, and during ground disturbing activities. Cumulative development of the area would result in increased construction, traffic, and accident potential. However, as with the transport and storage of hazardous materials, the treatment of accidental spills and releases are highly regulated, and procedures and protocol exist to mitigate potential impacts to less-than-significant levels. By adhering to these policies, the project would have a less-than-cumulatively-considerable contribution to impacts on the exposure of the public to hazardous material.

Hydrology and Water Quality

Cumulative Impact H-1: Cumulative Impacts to Hydrology and Water Quality (Less than Considerable Contribution with Mitigation)

Future development in the region would require extensive construction, conversion of undeveloped areas, and the creation of impervious surfaces. Portions of the region also lie within the 100-year floodplain, and development within these areas can affect local and regional hydrology during flood events. As described in Section 3.2, *Hydrology and Water Quality*, of this EIR, the proposed program includes mitigation measures to ensure that hydrology and water quality impacts are less than significant. Such policies and mitigation measures are mandated by local, state, and federal regulations, both during construction and operation of projects. This includes compliance with NPDES General Construction Permits, Waste Discharge Requirements from the RWQCB, and FEMA policies regarding construction in a flood plain. Future developers in the region would be required to design and implement measures to ensure that project level impacts to hydrology and water quality are less-than-significant. Since hydrology and water quality impacts can be mitigated at the

project level, the proposed program would have a less than considerable contribution to this cumulative impact.

Biological Resources

Cumulative Impact BIO-1: Cumulative Loss of Biological Resources Including Habitats and Special Status Species (Considerable and Unavoidable Contribution With Mitigation)

Construction and maintenance activities associated with cumulative development in the region could result in the direct loss or indirect disturbance of special-status species within the county. Any impact on special-status plant species or their habitats could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation. The program contains mitigation measures aimed at reducing its project-level impacts to a less-than-significant level, but until project-level analysis is done, it cannot be known if impacts may be unavoidable. The cumulative impact of development in the region on biological resources is considered to be significant and unavoidable. Therefore, the program is considered to have a potentially considerable and unavoidable contribution to a significant cumulative impact.

Aesthetics

Cumulative Impact AES-1: Cumulative Degradation of the Existing Visual Character of the Region (Less than Considerable Contribution with Mitigation)

Carmel Valley, while having several built-up areas such as the mouth of the Valley and the Village, is dominated by a rural character. As discussed in Section 3.4, *Aesthetics*, with mitigation, the program's effects on that rural character is considered to be less than significant.

Within the CVMP area, buildout allowed by the CVMP could include residential, office, commercial, recreational, and associated infrastructure development. This growth will change the character of the CVMP area within the immediate vicinity of the new project areas, but given the limitations and policies in the CVMP itself, such buildout is unlikely to change the overall character of the area.

Regional growth (outside the CVMP) has combined and will continue to combine to create a cumulative aesthetic effect by converting undeveloped land into developed and occupied areas. Cumulative development entails grading/landform alteration, the erection of structures, and the installation of

roadways and other infrastructure that has altered and will continue to permanently alter the region's existing visual character.

While Section 3.4 includes mitigation to reduce program level impacts on visual resources to less-than-significant levels, the overall development in the region could result in a significant cumulative impact. However, given the limited nature of the traffic improvements in the proposed program, it is not expected to make a considerable contribution to this impact.

Land Use

Cumulative Impact LU-1: Cumulative Impact on Communities and Local Land Uses (Less than Considerable Contribution)

The EIR analysis of the proposed program indicated that projects would mainly occur within or in close proximity to existing rights-of-way and would be generally compatible with existing land uses and policies. Buildout within the CVMP in accordance with the CVMP land use policies and designations would also result in the land use conditions as planned for by local planning authorities.

It is possible that development may be approved in the future that may potentially conflict with County land use policies and designations by encroaching on incompatible land uses. This may allow cumulative significant land use impacts to occur. However, the proposed program includes limited traffic improvements designed to allow buildout of the CVMP area to occur in compliance with the adopted General Plan and CVMP. As such, the proposed program does not facilitate non-compliant land uses and would not contribute to any cumulative significant land use impacts.

Agricultural Resources

Cumulative Impact AG-1: Cumulative Impact on Agricultural Land (Considerable and Unavoidable Contribution with Mitigation)

The EIR analysis indicates that the proposed program may result in significant impacts if it results in conversion of prime agricultural land to road use. Most of the proposed improvements are within existing rights-of-way and will continue the existing transportation use of that land. Some of the proposed improvements may involve acquisition of additional rights-of-way, and some of these acquisitions may involve agricultural land. These are limited, but when combined with the projected population growth, resultant urban development, and future planned transportation projects that would convert agricultural land in the County

to urban uses, they could contribute to a cumulative impact on agricultural land in Monterey County. Although the proposed program would involve only limited areas and mitigation measures are identified to reduce impacts and/or require compensation, any net loss of prime agricultural land would contribute considerably to a cumulative impact.

Transportation and Circulation

The direct impacts and the cumulative impacts on transportation and circulation are both based on buildout of the CVMP including previously approved development proposals, proposals that have been submitted, but not yet approved, and anticipated additional residential subdivisions to be evenly distributed across potential development locations. Both scenarios rely on traffic forecasting included in Appendix F to this DEIR. Thus, the direct program analysis and the cumulative program analysis for Transportation and Circulation are the same (refer to Section 3.7, *Transportation and Circulation*).

Cumulative Impact T-1: Result in Traffic that exceeds LOS Standards Established by the County (Cumulative Contribution)

As described in Section 3.7, the proposed program would improve traffic conditions in the CVMP area compared to the no-project conditions. However, there would be a significant and unavoidable cumulative impact along CVMP Carmel Valley Road Segment 3 (Esquiline Road to Ford Road) because no allowable mitigation measure has been identified to improve the LOS there.

Cumulative development within the CVMP area is taken into account in the traffic study conducted for this EIR and cumulative conditions with the proposed program and CVMP buildout meets the established standards with the exception of Carmel Valley Road, Segment 3.

Cumulative development in Monterey County outside the CVMP area would contribute traffic in the CVMP area. This has been accounted for in the traffic study by using the AMBAG 2030 growth projections for areas outside the CVMP, such that impacts beyond those noted in the study for Carmel Valley Road are not anticipated. Outside the CVMP area, however, cumulative development may result in significant traffic impacts. The proposed program does not result in any additional trip generation, as it is limited to traffic improvements to support CVMP projected growth and does not include approval of any specific trip generating activity.

Cumulative Impact T-2: Traffic Delays due to Simultaneous Construction (Less than Considerable with Mitigation)

Short-term program construction impacts could be exacerbated if individual improvement projects under the proposed program or other roadway projects in the region occur simultaneously, triggering cumulative traffic impacts experienced by drivers. The combined effects of necessary detours could result in unacceptable traffic conditions in the program area. Likewise, short-term project construction impacts on transportation could be exacerbated if cumulated with any simultaneous utility extensions, maintenance, or other projects within roadways affected by the proposed program. Potential short-term impacts of the proposed program would be reduced with implementation of a Traffic Control Plan as specified under Mitigation Measure T-1 in Section 3.7, *Transportation and Circulation*. Mitigation Measure T-1 would reduce the impact to a less-than-significant level.

Air Quality

Cumulative Impact AIR-1: Cumulative Effect on Air Quality (Less than Considerable Contribution)

Guidance from the MBUAPCD's CEQA Air Quality Guidelines indicates that project emissions that are not consistent with the Air Quality Management Plan would result in a cumulative impact. As indicated in Impact AIR-1 in Section 3.8, *Air Quality*, the proposed program is considered to be consistent with this plan and thus would not contribute to a cumulative impact related to criteria pollutants.

Cumulative Impact AIR-2: Cumulative Elevated Health Risk from Exposure to Construction-Related Emissions (Potentially Considerable and Unavoidable)

As indicated in Section 3.8, *Air Quality*, construction of the proposed roadway improvements are anticipated to involve the operation of diesel-powered equipment for various ground-disturbing activities. In October 2000, the ARB identified diesel exhaust as a toxic air contamination In addition, the MBUAPCD has identified acrolein from construction exhaust as a pollutant of concern. Diesel fuel will be reformulated over the next several years to reduce particulate emissions. In addition, cleaner diesel powered equipment will replace older construction equipment leading to an overall decrease in emissions of exhaust particulate matter and ozone precursor emissions. However, emission reductions are still needed on individual construction projects to reduce the exposure of sensitive receptors to toxic air contaminants and reduce ozone levels.

Mitigation was identified for construction that could reduce project-level impacts to less than significant. However, because it is currently unknown how close construction activities may occur in relation to sensitive receptors, construction activities may occur within distances that could result in significant health risks.

As exposure to toxic air contaminants is a long-term exposure, it is possible that other projects may also result in exposure of sensitive receptors near project sites, and thus a cumulative impact is possible. While in general, the amount of development in the CVMP area is limited and thus the potential for cumulative impacts is low, it cannot be ruled out entirely. Consequently, the project's contribution to this potential impact is considerable and may be unavoidable.

Cumulative Impact AIR-3: Increased Greenhouse Gas Emissions May Contribute to Climate Change (Significance Undeterminable)

It is possible that local transportation greenhouse gas emissions (GHG) emissions within the CVMP area, combined with the allowed full buildout of the CVMP area, when combined with emissions throughout California and throughout the world, might contribute to climate change.

The IPCC (2007b) has created multiple scenarios to project potential future global GHG emissions as well as to evaluate potential changes in global temperature, other climate changes, and their effect on human and natural systems. These scenarios vary in terms of the type of economic development, the amount of overall growth, and the steps taken to reduce GHG emissions. Non-mitigation IPCC scenarios project an increase in global GHG emissions by 9.7 up to 36.7 billion metric tons (Gt) CO2 eq from 2000 to 2030, which represents an increase of between 25 and 90 percent.

Climate change, by a substantive scientific consensus represented by the analysis of the IPCC, is a significant cumulative impact globally, given the ramifications for air quality, climate, public health, water resources, flooding, sea level rise, agricultural productivity, and biological resources, among other potential effects.

The proposed program is designed to complement, rather than change the plans adopted at the CVMP and the County level. Thus, the ultimate effect of the proposed program on transportation emissions is not to increase the amount of travel per se, but rather to influence traffic levels of service. This is supported by comparing the vehicle miles traveled (VMT) for the 2030 no-project condition and the 2030 with-project condition, which are virtually identical. Thus, comparison of emissions between what exists today and what would exist in 2030 with the proposed program is not a true measure of the effect of the program on GHG emissions. A better identification of the effect of the program is to compare emissions potential with the program against the No-Project Alternative as well as the other alternatives. As described in Section 3.8, the proposed program would result in identical traffic-related carbon dioxide emissions as the No-Project Alternative. Thus, implementation of the proposed

program is unlikely to contribute more vehicle-related GHG emissions than if the program is not implemented.

As noted in Section 3.8, there would also be additional emissions related to a larger amount of residential growth with the program, as the subdivision moratorium would be lifted and thus additional residential growth would be possible. Residential vehicle-related emissions are accounted for in the calculations in section 3.8. Other residential sources such as electricity and natural gas consumption were not estimated and could also result in GHG emissions. What portion of the new residential GHG emissions in the CVMP area would be truly "new" globally or just displaced from one location to another is not known and cannot be determined until demonstrated and accepted methodologies are developed to adequately address baseline issues.

While globally, climate change is, by any definition, a significant cumulative environmental impact and the impacts of climate change on California human and natural systems would also be significant, as noted in Section 3.8, there currently is no agreed-upon methodology to adequately identify, under CEQA, when project-level GHG emissions contribute considerably to this significant cumulative impact. Thus, at this time, it would be speculative to determine if the potential GHG emissions associated with the proposed program would or would not contribute considerably to this significant cumulative impact.

State action on climate change is mandated by AB-32. Monterey County along with other planning agencies throughout the state, will be monitoring the progress of state agencies in developing approaches to address GHG emissions. As agreed-upon approaches for project-level CEQA analysis, land use planning, and project development are established, it is expected that climate change will be an environmental consideration in future County determinations. The County will be required to adhere to any future applicable mandatory regulations regarding global warming resulting from the passage of AB 32, but the exact character of such future implementing strategies are not known at this time. Given the application of AB-32 mandates over time (including those related to vehicle fuels and efficiency), there is no reason to find that approval of the program is inconsistent with AB-32 at this early stage of implementation, nor would it interfere materially with the ability of agencies subject to AB-32 to meet the mandated GHG emission reductions by 2020.

Noise

Cumulative Impact N-1: Exposure of Noise-Sensitive Land Uses adjacent to Carmel Valley Road to Cumulative Traffic Noise that Exceed County Noise Compatibility Standards (Significant and Unavoidable with Mitigation)

Table 4-1 summarizes the predicted traffic noise levels along roadway segments in the program area under future-year cumulative 2030 conditions. With the exception of the segments of Carmel Valley Road from Holman Road to

Table 4-1. Future Year 2030 With Project Traffic Noise Contour distances along Carmel Valley Road Project Segments

Roadway		Performance Standard, L_{dn}/CNEL	Distance to 70 L_{dn} Noise Contour (feet)	Distance to 65 L_{dn} Noise Contour (feet)	Distance to 60 L_{dn} Noise Contour (feet)
Carmel Valley Road	East of Holman Road	60	-	80	160
	Holman Road to Esquiline Road	60	-	-	100
	Esquiline Road to Ford Road	60	-	-	70
	Ford Road to Laureles Grade	60	-	60	130
	Laureles Grade to Robinson Canyon Road	60	60	130	280
	Robinson Canyon Road to Schulte Road	60	60	130	270
	Schulte Road to Rancho San Carlos Road	60	60	130	280
	Rancho San Carlos Road to Rio Road	60	90	190	400
	Rio Road to Carmel Rancho Boulevard	60	80	250	790
	Carmel Rancho Boulevard to Highway One	60	60	200	640

Esquiline Road and Esquiline Road to Ford Road, cumulative traffic noise is predicted to exceed 60 Ldn along all roadway segments in the plan area. This impact is therefore considered to be significant. Because of limitations associated with driveway access and topography, it is unlikely that effective mitigation can be identified for all situations. This impact is therefore considered to be cumulatively significant and unavoidable. Implementation of the following mitigation measures would reduce this impact, but not necessarily to a less-than-significant level.

Mitigation Measure N-3: Construct Noise Barriers Between Roadways and Residents Such that Traffic Noise Does Not Exceed 60 L_{dn} in Outdoor Use Areas

The County shall construct noise barriers in the form of walls or earth berms where feasible, such that traffic noise in primary outdoor use areas at residences does not exceed 60 L_{dn}. Construction of barriers that break the line of sight between the roadway and adjacent uses will likely provide at least 5 dB of noise reduction.

Mitigation Measure N-4: Use Low Noise Pavement

If feasible, the County will use low noise pavement such as rubberized asphalt or open-graded asphalt on new roadway surfaces constructed as part of the proposed traffic improvements. Studies conducted by Caltrans indicate that the use of low noise pavement such as open-graded asphalt

or rubberized asphalt can be expected to reduce traffic noise by at least 4 dB (Caltrans 2005).

Public Services and Utilities

Cumulative Impact PSU-1: Cumulative Increase in Demand for Utility Infrastructure and Capacities (Less than Considerable Contribution)

Regional development creates cumulative demand on all aspects of public services and utility provisions by increasing the number of residents, occupants, and visitors to the area. Public service and utility providers in Monterey County and associated cities have accounted for increases in the public needs in their master planning. The accommodation of such growth may place constraints on public utilities and services for future developments.

The proposed program is consistent with the intensity of development allowable within the CVMP area, and would act to accommodate the future growth. It would not act to directly induce population growth, and the demand on public services and utilities for the limited improvements are expected to be minimal. Construction period mitigation is identified to reduce potential utility disruption impacts to a less-than-significant level.

While cumulative growth may result in significance public service and utility demands, the traffic improvement program is not expected to contribute significantly to those demands due to the limited demand for such services and utilities by the new improvements.

Cultural Resources

Cumulative Impact CR-1: Cumulative Impacts on Known and Undiscovered Cultural Resources (Considerable and Unavoidable Contribution)

As development continues within the region, it is likely that additional, undiscovered sites exist within the area, including on land that is both developed and undeveloped. Although all development within the region must adhere to CEQA regulations that call for careful investigation and documentation of sites for the presence of cultural resources, adherence to these regulations and implementation of mitigation may not prevent a future cumulative loss of these important resources.

Because site-specific surveys have yet to be conducted for the projects in the proposed program, it is not known whether recognized cultural resources would

be disturbed. Furthermore, the potential exists for the discovery of previously unknown resource sites during the construction of traffic improvement projects. In combination with the other cumulative development, any disturbance or destruction of known and unknown cultural resources would be considered to contribute considerably to a significant cumulative impact.

Implementation of Mitigation Measures CR-1.1 to CR-1.6 would reduce these impacts to a less-than-significant level. However, if an architectural or archaeological resource cannot be avoided, the resource could be permanently damaged under project implementation. In this case, the impact would be considered significant and unavoidable, both as a direct impact and as a cumulative contribution.

Population and Housing

Cumulative Impact PH-1: Cumulative Impacts on Population and Housing (Less than Considerable Contribution)

The proposed program would not directly contribute to population or housing in the region, but could indirectly contribute to or accommodate growth by providing transportation infrastructure. As discussed in this EIR, the program has been developed as a response to current deficient traffic conditions and due to projected growth within the CVMP area by 2030. The proposed program would provide needed improvements to keep pace with the anticipated transportation needs of this population growth. Since no additional capacity that could induce population growth beyond that projected by the CVMP Area Plan are included, the proposed program would not contribute to a cumulative population increase.

While most of the proposed improvements would be constructed within existing rights-of-way, some projects may involve land acquisition. It is anticipated that the majority of additional right-of-way acquisition would involve vacant or undeveloped land. Mitigation, including compliance with local, state, and federal laws regarding displacements of people and businesses are included in the proposed program to ensure that displacement impacts are minimized.

In adhering to the policies mentioned within this EIR, any displacement resulting from the proposed program would not contribute considerably to a cumulative effect.

Growth-Inducing Impacts

CEQA Requirements

Section 21100 of the California Public Resources Code requires an EIR to include a detailed statement of the proposed project's anticipated growth-inducing impacts. More specific guidance is provided by Section 15126.2(d) of the state's CEQA Guidelines, which require that the analysis of growth-inducing impacts discuss the ways in which the proposed project could foster economic or population growth or the construction of additional housing in the project area. The analysis must also address project-related actions that, either individually or cumulatively, would remove existing obstacles to population growth. The purpose of this section is to examine the proposed program's potential impacts related to population growth, consistent with these statutory requirements.

Approach to the Growth-Inducement Analysis

Regulatory Context

California law requires that each county develop a comprehensive, long-term general plan to guide its land use decision-making and physical development (Government Code Section 65300 *ff*.). The intent is to ensure that growth takes place in a controlled manner, with an appropriate balance of land uses maintained and all needed services provided. This goal is reflected in the General Plan contents mandated under Government Code Section 65302—of the seven mandatory "elements," or chapters, three relate directly to growth: the land use element establishes the pattern of future land uses, the circulation element plans the road system that will serve approved land uses, and the housing element identifies the means by which the county will meet its fair share of projected regional housing needs for all income groups.

Monterey County General Plan

The focus of growth under the existing 1982 *General Plan* is in urban areas (cities). New residential growth is to be concentrated in areas that are already committed to a degree of residential development and that have provision for an adequate level of services. Much of this would occur at low or rural density. No land use designations would change and it is assumed that existing undeveloped lots of record would ultimately be built out to their highest use, as envisioned by the existing 1982 *General Plan* land use map. The existing 1982 *General Plan* is designed to encourage growth in the 12 incorporated cities (Michael Brandman Associates 2006). The existing 1982 General Plan is in effect as the legal General Plan pending a future General Plan Update.

Growth Projections

The traffic study for the proposed program is based on the AMBAG Model. The AMBAG region (Monterey, San Benito, and Santa Cruz counties) is projected to grow by 39.6% between 2000 and 2030. Monterey County's population alone is estimated to increase by 50.1% to 602,731 by 2030. As most of the growth in anticipated to occur in cities, the unincorporated area is expected to grow at a slower rate than the County or AMBAG totals. According to AMBAG projections, the unincorporated area's population is expected to grow by 35% to 35,123 by 2030.

The AMBAG region and Monterey County have high jobs-housing ratios while the unincorporated area has a very low jobs-housing ratio.

Growth-Related Impacts of the Proposed Program

Direct Impacts

As discussed in Chapter 2, *Program Description*, the proposed program involves specific roadway improvements to the Carmel Valley Road corridor. The proposed program would not directly induce unplanned growth or growth at rates in excess of those supported by the County's General Plan, the 1986 CVMP, or the 2006 CVMP update. The transportation improvements are proposed in order to alleviate future traffic congestion resulting from planned growth under the CVMP buildout. The individual traffic improvement projects and the overall proposed program do not involve development of new units, commercial or visitor-serving uses, but rather involves capital improvements to existing infrastructure to serve projected land use development and growth regardless of the proposed program.

Indirect Impacts

Transportation system improvements are one component of the overall infrastructure that may serve to accommodate planned growth. However in some cases, this infrastructure may also serve to hasten or shift planned growth, or encourage and intensify unplanned growth in an area. Transportation projects may induce growth when they directly or indirectly promote, hasten, shift, or intensify planned growth or encourage unplanned growth in a community or region.

The proposed program would remove the moratorium for growth in the CVMP area by addressing existing and forecasted LOS deficiencies in the program area and allowing development to proceed in accordance with the CVMP policies. Development of the proposed program would thus indirectly contribute to growth in Carmel Valley by removing the obstacle to planned growth and allowing it to potentially proceed to CVMP buildout. CVMP buildout could result in

environmental impacts related to: geology, soils, and seismicity; hydrology and water quality; biological resources; aesthetics; land use; agricultural land; transportation and circulation; air quality; noise, publics services and utilities; cultural resources; and population and housing. Potential impacts of development will be reviewed through the existing land use permitting and CEQA review process and through application of the CVMP and General Plan policies.

It is unlikely, given the strict guidelines and eventual cap for growth in the CVMP area that the proposed traffic improvement program would promote or shift growth in the CVMP area beyond that which is specified and restricted under the CVMP. The improvements, while improving localized traffic levels of service, do not include new roads into new areas and do not increase the overall through capacity of Carmel Valley Road (such as by making the entire length multi-lane).

No further analysis is required, and no additional mitigation beyond that identified in this EIR is proposed.

Significant and Unavoidable Adverse Impacts

Section 15126.2(b) of the State CEQA Guidelines requires an EIR to describe any significant impacts that cannot be mitigated to a level of insignificance. All of the impacts associated with the proposed program would be reduced to a less-than-significant level through the implementation of identified mitigation measures and environmental commitments, with the exception of the impacts listed below.

Biological Resources

Impact BIO-2: Potential Disturbance or Loss of Sensitive Riparian and/or Water/Aquatic Habitat including Wetlands

Impact BIO-3: Potential Disturbance or Loss of Special Status Plant Populations

Impact BIO-7: Potential Disturbance or Loss of Special Status Wildlife Species and Their Habitats

Cumulative Impact BIO-1: Cumulative Loss of Biological Resources Including Habitats and Special Status Species

Agricultural Resources

Impact AG-1: Direct Conversion of Important Farmland to Nonagricultural Uses

Cumulative Impact AG-1: Cumulative Impact on Agricultural Land

Transportation and Circulation

Impact T-2: Violation of the LOS Standard Established by the County for Segment 3 - Esquiline Road to Ford Road

Cumulative Impact T-1: Result in Traffic that exceeds LOS Standards Established by the County

Air Quality

Impact AIR-5: Elevated Health Risk from Exposure to Construction-Related Emissions

Cumulative Impact AIR-2: Cumulative Elevated Health Risk from Exposure to Construction-Related Emissions

Noise

Cumulative Impact N-1: Exposure of Noise-Sensitive Land Uses adjacent to Carmel Valley Road to Cumulative Traffic Noise that Exceed County Noise Compatibility Standards

Cultural Resources

Impact CR-1: Potential Demolition, Destruction, Relocation, or Alteration of Historical Resources

Cumulative Impact CR-1: Cumulative Impacts on Known and Undiscovered Cultural Resources

Irreversible and Irretrievable Commitment of Resources

Section 15126 of the State CEQA Guidelines requires a discussion of potential significant, irreversible environmental changes that could result from a proposed project. Section 15126.2(c) of the state CEQA Guidelines states:

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and particularly, secondary impacts (such as highway improvements which provide access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible commitments of resources should be evaluated to assure that such current consumption is justified.

The program comprises traffic improvements that are included in the current County Capital Improvement Program. The program would require commitments of both renewable and nonrenewable energy and material resources for constructing the individual projects under the program. These may include concrete, mineral resources, fossil fuels, and other non-renewable resources. A more detailed impact analysis of potential irreversible environmental changes would be required during development of plans for individual specific projects under the program.

Chapter 5
Alternatives

Introduction

According to Section 15126.6 of the CEQA Guidelines:

> An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project.

Nature of Proposed Program

As described in Chapter 2, *Project Description*, the proposed program consists of a range of individual roadway improvement projects within the Carmel Valley Road corridor, including additional lane channelization, shoulder widening, paved turnouts, new signage, roadway extension and signalization, additional passing lanes, bikeway upgrades, and a proposed grade separation at Laureles Grade and Carmel Valley Road.

Program Objectives

The general objectives of the proposed program, as stated in Chapter 2, *Program Description* are to:

- address existing and forecasted LOS deficiencies in the CVMP area; and
- allow development to proceed in accordance with all CVMP policies.

These objectives were considered during the formulation of potential alternatives, and their various components, for consideration in this EIR.

Alternatives Suggested During the EIR Scoping Process

A dual scoping meeting was held for the CVMP SEIR and the Rancho Canada Village EIR on September 25, 2002. Oral and written comments were received at that time. The Notice of Preparation (NOP) for the subsequent EIR for the Carmel Valley Master Plan was issued on August 28, 2006 (see Appendix A). Suggested actions and alternatives were addressed in the range of alternatives considered in this chapter.

Significant Environmental Impacts of the Proposed Program

State CEQA Guidelines section 15126.6 (f) states that "alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project." As such, alternatives that do not avoid or substantially lessen significant effects of the project do not need to be analyzed in an EIR.

The analysis in this DEIR identifies the following environmental effects of the proposed program.

Geology, Soils, and Seismicity

The program could result in significant impacts related to strong groundshaking, earthquake-induced liquefaction, landslide/slope failure, destabilization of steep slopes, and land subsidence/settlement during the lifespan of the proposed program. These impacts are mitigable to less-than-significant levels at the site-specific, project-level through individual geotechnical investigations and proper facilities designs. The program could cause erosion and loss of topsoil. This impact is mitigable to a less-than-significant level at the site-specific, project-level through implementation of construction plans and Best Management Practices.

Hydrology and Water Quality

The program could result in significant impacts related to the increase of impervious surfaces that could lead to increases in runoff or exceedances in stormwater capacity and interference with groundwater recharge, temporary and long-term water quality effects in the Carmel River, and risks from flooding. These impacts are mitigable to a less-than-significant level through implementation of management measures and plans, site-specific assessments, and the additional mitigation noted in Section 3.2.

Biological Resources

The program could result in significant impacts related to the loss or disturbance of sensitive oak woodland and forest habitats, protected trees, common wildlife species and migration, nesting birds, and fish, and the introduction of noxious weeds. The program could conflict with local biological resources protection policies. These impacts are mitigable to a less-than-significant level through implementation of site-specific avoidance and minimization measures, compensation for losses, and compliance with local policies. The program might result in significant and unavoidable impacts related to the loss or disturbance of riparian habitat and special status plant and wildlife populations and their habitats depending on project-level considerations and the feasibility of site-specific mitigation. Implementation of measures noted in Section 3.3 would reduce impacts, but potentially not to less-than-significant levels.

Aesthetics

Carmel Valley Road is a designated State Scenic Highway. The program could change and/or obstruct certain portions of existing views, degrade scenic resources, and introduce light and glare within the Carmel Valley Road corridor. The program would reduce these impacts to less-than-significant levels with implementation of the mitigation identified in Section 3.4.

Land Use

The program would not result in significant effects related to compatibility with surrounding land uses and communities and consistency with land use policies. No mitigation is required.

Agricultural Resources

The program could result in significant direct effects related to conversion of important farmland adjacent to Carmel Valley Road to non-agricultural uses if road improvements require such conversion. Although limited in scale, if a net loss of prime agricultural land were to occur, mitigation noted in Section 3.6 would reduce impacts, but not necessarily to a less-than-significant level.

Transportation and Circulation

With the proposed program improvements and cumulative traffic, LOS intersection standards would be met at all study intersections with the exception of Highway One at Rio Road. TAMC is planning improvements to this

intersection as part of its Highway 1 Carmel Area Operation Improvement project.

With proposed program improvements and cumulative traffic, LOS roadway segment standards would be met for Carmel Valley Road with the exception of Esquiline Road to Ford Road (Segment 3). This is a significant and unavoidable cumulative impact because no allowable mitigation measure has been identified to improve the LOS there.

The program could also significantly alter present vehicular circulation and increase delays and roadway hazards during construction of specific projects but mitigation is available to reduce impacts to a less-than-significant level.

Air Quality

The program would result in increased emissions of exhaust, dust, and soil during construction, but would be mitigated to a less-than-significant level, as detailed in Section 3.8. The program's construction may cause significant elevated health risks to sensitive receptors from exposure to emissions, depending on project-level considerations that cannot be identified at this time. Mitigation is available to reduce this risk, but possibly not to a less-than-significant level

The program would not substantially increase operational emissions compared to the no-project conditions, including greenhouse gas emissions.

Noise

The program would result in increased noise and could expose persons to ground borne vibration during construction. However, implementation of mitigation in Section 3.9 would be expected to reduce impacts on noise to a less-than-significant level.

Cumulative traffic noise could be reduced with mitigation, but not necessarily to a less-than-significant level, depending on project circumstances and the feasibility of on-site mitigation measures.

Public Services and Utilities

The program could result in temporary significant impacts to emergency access and utility disruption during project construction, and impacts related to increased solid waste disposal, but these impacts can be reduced to less-than-significant levels with implementation of mitigation discussed in Section 3.10.

Cultural Resources

The program could result in the degradation of known significant historic or archaeological resources. If avoidance is possible, the impact would be considered less than significant; however, avoidance may not be an option and this is therefore considered significant and unavoidable.

Population and Housing

The program's proposed grade separation at Laureles Grade and Carmel Valley Road could require land acquisition that might affect a few residences. Mitigation proposed in Section 3.12 would reduce this impact to less than significant. The program otherwise would not result in significant impacts to population and housing as it would only allow growth consistent with the CVMP.

Growth Inducement

The proposed program would remove the moratorium for growth in the CVMP area by addressing existing and forecasted LOS deficiencies in the program area and allowing land subdivision and development to proceed in accordance with the CVMP policies. This would indirectly contribute to growth in the program area by removing a constraint to growth. However, the proposed program would not directly induce or contribute to growth in the program area. Instead, the program would serve to accommodate the planned growth in the CVMP area rather than promote additional increases above the level of development currently planned for the region.

Alternatives Analysis

The projects in the proposed program, while they would result in site-specific impacts due to construction, are in general of a limited character. Several alternatives are considered to evaluate potentially different traffic improvements and approaches. In addition, since the program would remove a constraint to growth, several alternatives in regards to CVMP growth are also considered.

Alternatives considered in this draft EIR are discussed below.

The following alternatives were initially evaluated for their feasibility and their ability to achieve most of the program objectives while avoiding, reducing, or minimizing significant impacts identified for the proposed program:

- **No Project Alternative**—This alternative would include continuation of the existing moratorium on land subdivision in the CVMP for residential or visitor-serving development. This alternative would include approximately

50% of the residential development allowed by lifting the moratorium, but the same amount of visitor-serving and commercial development.

- **Alternative 1—Grade Separation Alternatives 1A and 1B**—This alternative would be the same as the proposed program but would include either a traffic signal (Variant A) or an all-way stop (Variant B) at the intersection of Laureles Grade and Carmel Valley Road.
- **Alternative 2—Carmel Valley Village Alternatives 2A and 2B**—This alternative would be the same as the proposed program but would include either a passing lane through the Carmel Valley Village or routing of traffic on side streets.

The following alternatives were initially considered but dismissed from further analysis because they are either infeasible, do not achieve most of the program objectives or do not avoid or substantially lessen significant impacts identified for the proposed program:

- **Alternative A—Zero Growth Alternative.** This alternative would halt all growth in the CVMP area via a complete moratorium on subdivisions, regardless of CVMP build out allowances.
- **Alternative B—Four-Lane Alternative.** This alternative would widen Carmel Valley Road to four lanes from Highway One to Laureles Grade and perhaps all the way to the Carmel Valley Village.
- **Alternative C—Rio Road Extension to Carmel Valley Road.** This alternative would extend Rio Road to connect up with Carmel Valley Road.
- **Alternative D —Transit Alternative.** This alternative consists of expansion of transit service along Carmel Valley Road between the Carmel Valley Village and Highway one with periodic stops in-between.
- **Alternative E—Clustered Land Use Pattern Alternative.** This alternative would include changing the land use pattern for future development from a dispersed low-density rural character to focus future development in three discrete areas: the mouth of the Carmel Valley, Mid-Valley, and the Carmel Valley Village.
- **Alternative F—Regional Improvements Alternative.** This alternative would include regional traffic improvements (such as to Highway 101 or Highway 68) instead of improvements to Carmel Valley Road.
- **Alternative G—Policy Change Alternative.** This alternative would include changing the LOS Standard for Carmel Valley Road in all locations to LOS D, as in the current 1982 County General Plan, or to LOS E.

Alternatives Analyzed in the Draft EIR

Alternatives 1 and 2 were determined to be feasible (or potentially feasible) and would meet at least some of the program objectives (though not necessarily all). The ability of these two alternatives and the No Project Alternative to substantially lower the significant impacts identified for the proposed program is

discussed below. All resource areas are analyzed for each alternative determined to be potentially feasible, though at a much more general level than in Sections 3.1–3.12.

No Project Alternative

Alternative Characteristics

Under the No Project Alternative, there would be no additional residential or commercial subdivisions, as it is assumed that the existing subdivision moratorium will continue. It is assumed that additional single-family dwellings, visitor-serving units, and commercial developments can be approved within the CVMP land use framework without the need for subdivision up to the growth limits in the CVMP. It is also assumed that previously approved projects will be completed.

This alternative assumes that Monterey County Board Resolution 02-024 becomes permanent policy for the duration of CVMP buildout to 2030. This resolution does not stop development, but rather land subdivision. Without the program (and thus with a continued moratorium), it is still possible that single-family residential development could occur on certain existing legal lots within the CVMP. Construction of one single-family residence or a second dwelling unit in a residential zone can be exempt from CEQA review (CEQA Guidelines 15303), although the exemption is not absolute. In the program area, 655 residential units are associated with prior approvals. Based on County data, there are 258.5 remaining vacant lots of record in the program area that meet the criteria of compatible uses and that do not already contain substantive development. It is assumed that one (1) unit per lot would be built in this scenario (DKS Associates 2007). It cannot be known for certain that such residential development will or will not actually occur; however this residential development is considered possible and thus disclosed as a potential characteristic of the No Project Alternative.

Commercial development is assumed to not be impeded by lack of ability to subdivide land under this alternative and the AMBAG projections for commercial growth by 2030 are assumed for this alternative (the same as the proposed program). Visitor-serving development would include 285 additional units, would be allowed in various locations within Carmel Valley through 2030 under the No Project scenario. It is assumed that the lack of ability to subdivide land does not affect visitor-serving development.

Pursuant to the moratorium resolution and CVMP Policy 39.3.2.1(2006 CVMP Update Policy 2.18), the County cannot approve development that results in a significant impact to CVMP roads unless an EIR is prepared that includes mitigation of operations to acceptable levels, but which may include statements of overriding considerations.

Under this alternative, it is assumed that some traffic mitigation measures would be advanced as projects come forward (particularly for larger-scale visitor-serving and commercial projects), and the current fee program would continue to be implemented to administer traffic mitigation measures such that effects of development are addressed as they occur. This alternative represents a "lesser buildout" alternative as it represents less than 50% of potential residential development than with the proposed program. The scale and timing of traffic improvements was not determined although the overall scale would be less than the proposed program due to the lower amount of fees collected.

With the prohibition of subdivision, residential growth is likely to be more dispersed throughout the Valley than with the proposed program.

Since visitor-serving and commercial growth would be the same as the proposed program, impacts of this buildout in the CVMP area is not discussed below and the reader is referred to Chapter 3.

The No Project Alternative would not meet the program objectives because traffic improvements would not be implemented in order to alleviate future traffic-related congestion related to growth in Carmel Valley as planned under the CVMP.

Impact Analysis

Geology, Soils, and Seismicity. Impacts related to traffic improvement construction would be similar to those of the proposed program, but on a more limited scale.

CVMP residential growth could result in geology, soils, or seismicity impacts but at a smaller scale than the proposed program. However, it is probable that related impacts could be mitigated through proper design and construction.

Hydrology and Water Quality. Impacts related to traffic improvement construction would be similar to those of the proposed program but on a more limited scale.

CVMP residential growth could result in increase of impervious surfaces and water quality impacts, but on a smaller overall scale than that facilitated by the proposed program. However, residences may be more dispersed with the inability to subdivide land, which may increase roadway lengths in the watershed.

Biological Resources. Impacts related to traffic improvement construction would be similar to those of the proposed program but on a more limited scale.

Residential development on undeveloped parcels containing sensitive biological habitat could occur with this alternative but likely at a smaller scale than the proposed program. However, residences may be more dispersed with the inability to subdivide land, which may increase roadway lengths through intact habitat.

Aesthetics. Impacts related to traffic improvement construction would be similar to those of the proposed program but on a more limited scale.

Minor changes in aesthetics could occur due to new residential development. Future development would be subject to design permit review to require compatibility of new structures with the local visual setting and character. Residential development would be more dispersed with the inability to subdivide land.

Land Use. New development would be controlled by CVMP policies and designations. However, this alternative would constrain ultimate buildout levels in Carmel Valley and limit housing provisions, which would be inconsistent with the CVMP. This could result in increased development in other neighboring vicinities and/or increase the need for housing elsewhere.

Agricultural Resources. Impacts related to traffic improvement construction would be similar to those of the proposed program but on a more limited scale.

Transportation and Circulation. The traffic study in Appendix F includes evaluation of the No-Project Alternative traffic impacts to intersections and roadway segments. The analysis was conducted without any traffic improvements as the availability of funding, timing, and scale of improvements with this alternative are uncertain.

Cumulative traffic volumes would continue to grow based on County growth and CVMP buildout potential, even with more limited residential growth in the CVMP area.

Without the program, all study intersections would operate at an acceptable LOS except for the intersection at Highway One and Rio Road and the intersection at Laureles Grade and Carmel Valley Road. As described in the traffic study, TAMC is planning an improvement to the Highway One/Rio Road intersection as part of their Highway 1 Carmel Area Operational Improvements. Similar to the existing condition, the Laureles Grade/ Carmel Valley Road intersection would continue to operate at LOS F during the P.M. peak hour. The addition of program-generated traffic would cause this intersection to deteriorate from LOS E to LOS F during the A.M. peak hour. This intersection satisfies a peak-hours signal warrant for the A.M. and P.M. peak hours, respectively. Although some traffic improvements may occur under this alternative, it is unknown when and if any improvement to this intersection will occur.

With the No Project Alternative, all study roadway segments would operate at an acceptable LOS for all alternatives except for the following roadway segments:

- From Esquiline Road to Ford Road (Segment 3)
- From Robinson Canyon Road to Laureles Grade (Segment 5)
- From Schulte Road to Robinson Canyon Road (Segment 6)
- From Rancho San Carlos Road to Schulte Road (Segment 7)

The failing operations on Segment 3 are similar to the proposed program. The failing operations on Segments 5, 6, and 7 would be worse than the proposed program, which includes new passing lanes along these segments. Although some traffic improvements may occur under this alternative, it is unknown when and if any improvements to these segments would occur.

Air Quality. Impacts related to traffic improvement construction would be similar to those of the proposed program but on a more limited scale.

As indicated in Table 3.8-6 in Section 3.8 *Air Quality*, the No Project in 2030 traffic emissions would be similar to the proposed program due to a similar amount of Vehicle Miles Traveled within the CVMP area. Due to a lesser level of buildout, it is possible that vehicle miles traveled outside the CVMP area could be less than the proposed programs, but only if the lesser amount of growth in the CVMP area were not compensated by increased growth in other areas.

Noise. Impacts related to traffic improvement construction would be similar to those of the proposed program but on a more limited scale.

Within the CVMP, traffic noise levels would slightly increase with growth in the CVMP area. Because VMT in the CVMP area is the same as the proposed program, vehicle noise would also be similar to the proposed program.

Public Services and Utilities. Impacts related to traffic improvement construction would be similar to those of the proposed program but on a more limited scale.

A lesser amount of residential growth would mean in general that overall demands for public services and utilities should be less than the proposed program. However, since development would be more dispersed it is possible that the extension of utility lines might have a greater length than in a growth pattern that allows subdivision.

Cultural Resources. Impacts related to traffic improvement construction would be similar to those of the proposed program but on a more limited scale.

With lesser development potential, impacts to cultural resources would likely be less than with the proposed program.

Population and Housing. Impacts related to traffic improvement construction would be similar to those of the proposed program but on a more limited scale.

This alternative would facilitate approximately 50% less housing in Carmel Valley than the proposed program. This may put pressure on adjacent and nearby areas to compensate in the provision of housing and/or may put increased pressure on the cost of housing in the local area.

Growth Inducement. Like the proposed program, this alternative would allow growth in the Carmel Valley with provision for increased residential, visitor-serving, and commercial development. However, the amount of potential residential growth would be smaller than the proposed program. Further, this alternative may actually hinder the pace of development as the timing, funding, and scale of traffic improvements would be uncertain.

Alternative 1—Grade Separation Alternatives 1A and 1B

This alternative would be the same as the proposed program but would include a signal or an all-way stop instead of a grade separation at the intersection of Laureles Grade and Carmel Valley Road.

The intersection of Laureles Grade and Carmel Valley Road would operate at a deficient LOS under the No Project. The proposed program includes a partial grade separation at the southbound left turn movement, which would improve LOS operations from LOS F to LOS C in both A.M. and P.M. peak periods.

Two alternatives for addressing operations at the intersection of Laureles Grade and Carmel Valley Road without implementing a grade separation are analyzed below as Grade Separation Alternative 1A and Grade Separation Alternative 1B.

The Grade Separation Alternatives 1A and 1B would meet the program objective to address level of service deficiencies in the CVMP area.

Grade Separation Alternative 1A Characteristics

Grade Separation Alternative 1A involves implementation of a signal at Laureles Grade and Carmel Valley Road to address LOS operation deficiencies. The intersection meets the need for a signal warrant during both A.M. and P.M. peak periods. Grade Separation Alternative 1A would convert the intersection of Laureles Grade and Carmel Valley Road to a signalized intersection, improving the LOS operations from LOS F to LOS C in the A.M. peak period and to LOS B in the P.M. peak period.

A generic estimate of a signalized intersection with all features would cost approximately $250,000, which would include signal study, the equipment purchase, installment, maintenance, and operation.

Grade Separation Alternative 1B Characteristics

Grade Separation Alternative 1B involves modification to the Laureles Grade and Carmel Valley Road intersection geometry and traffic control to address LOS operation deficiencies. The intersection would be modified to an all-way stop. An additional through lane would be constructed in the east- and westbound directions and right turn lanes (receiving lanes) would be provided for vehicles traveling in the south- and westbound directions. These modifications would improve the LOS from LOS F to LOS D in the A.M. and P.M. peak periods.

A generic estimate of this alternative is $200,000 assuming that the extra eastbound and westbound lanes would start approximately 300 feet before the intersection. In addition right turn receiving lanes in the northbound and westbound directions would extend for approximately 200 feet.

Impact Analysis

Both alternatives to the proposed grade separation at Laureles Grade and Carmel Valley Road would avoid the use of a grade-separated structure at the project site, thereby eliminating impacts associated with the structure identified under the proposed program. Furthermore, excavation at the project site would be avoided and the construction timeframe and intensity would be reduced. All construction impacts associated with erection of the grade separation would be eliminated in the areas of biological resources; hydrology and water quality; agricultural resources; air quality; noise; public services and utilities; cultural resources; and population and housing. All visual impacts associated with the proposed grade-separated structure would be avoided, although there would be an all-way stop or signal at this location that some individuals might find to be aesthetically different than the present condition.

Both of these alternatives would be more cost effective than the grade separation. In addition, given the failing operations at this intersection at present and the time necessary to collect fees to fund a grade separation, both of these alternatives would improve traffic conditions far sooner than the proposed program.

Alternative 2—Carmel Valley Village Alternative 2A and 2B

This alternative would be the same as the proposed program but would include a multi-lane segment through the Carmel Valley Village or would route Carmel Valley Road traffic on Via Contenta and Ford Drive.

Village Alternative 2A Characteristics

Carmel Valley Village Alternative 2A would widen Carmel Valley Road in the segment near Carmel Valley Village to two (2) lanes in each direction. The feasibility of adding two lanes is unknown, as no evaluation of right-of-way and alignments has been done. For this EIR, this is considered potentially feasible barring further analysis.

Village Alternative 2B Characteristics

Carmel Valley Village Alternative 2B would reroute traffic off of Carmel Valley Road on to Via Contenta and/or Holman Road/Ford Road and back on to Carmel Valley Road by increasing the speed limits and replacing signage in these locations. The traffic re-routing under this alternative would divert local and regional traffic through residential neighborhoods.

Impact Analysis

While potentially improving traffic conditions on Carmel Valley Road, widening to 4-lanes through the Carmel Valley Village would change the current ambiance and character of the Carmel Valley Village shopping area. Circulation and safety impacts would likely occur with the need to provide for left-turns across two lanes of traffic and the need to provide for safe pedestrian crossings. Widening would also result in the removal of street trees and may require land acquisition or building removal. Such changes are also considered inconsistent with the policies of the CVMP.

Via Contenta, Holman Road, and Ford Road are not designed to carry through traffic. While increasing speed limits along these roads is feasible as well as providing directional signage, this alternative would likely increase safety risks for drivers and residences along this road and would change the residential character of these side roads at present.

Environmentally Superior Alternative

The No Project Alternative would result in a lower level of impacts related to traffic improvement construction and lesser level of impacts related to residential buildout (although this may be offset by residential development elsewhere). The No Project Alternative would result in greater traffic deficiencies compared to the proposed program and would not meet the project objectives. Thus, the No Project Alternative is not considered the environmentally superior alternative.

Based on the assessment of environmental impacts for the feasible alternatives described above, the environmentally superior alternative is Grade Separation Alternative 1A which would meet the project objectives while avoiding the

impacts of the proposed grade separation, particularly as the Laureles Grade / Carmel Valley Road intersection is failing now and it will be many years before sufficient fee is collected to build the grade separation.

Alternatives Considered but Dismissed from Further Evaluation

The following alternatives were considered during the environmental impact analysis but dismissed from further evaluation because they are either considered infeasible, would not meet at least some of the project objectives, or would not avoid or substantially lower the significant impacts identified under the proposed program. Each alternative is briefly described below along with the reason for dismissing it from further analysis.

Alternative A—Zero Growth Alternative

This alternative would halt all growth in the CVMP area via a complete moratorium on subdivisions, regardless of CVMP build out allowances. All previously approved projects would be permitted to move forward as proposed, but no new residential, visitor-serving, or commercial growth would be allowed. No new traffic improvements would be built because there would be no new traffic fees collected.

This alternative would reduce all program-related impacts, but has been dismissed as infeasible because it would be unconstitutional to eliminate all economic use of undeveloped land in the Carmel Valley. This alternative would not address the existing intersection deficiency at Laureles Grade / Carmel Valley Road and would not address future deficiencies that may occur along Carmel Valley Road due to the growth in through traffic from outside the CVMP.

Alternative B—Four-Lane Alternative

This alternative would widen Carmel Valley Road to four lanes from the existing multi-lane segment at Rancho San Carlos Road to at least Laureles Grade and possible further east to Holman Road.

This alternative was rejected because it would not avoid the impacts of the proposed program and could result in more severe environmental impacts associated with road widening throughout the Carmel Valley Road corridor. This alternative would also be less cost effective than the proposed program.

Alternative C—Rio Road Extension to Carmel Valley Road

This alternative would extend Rio Road to connect up with Carmel Valley Road. This approach has been dismissed because it would not serve to improve traffic operations in the CVMP area and would result in more environmental impacts than the proposed program due to construction of a new roadway extension. This alternative was also analyzed in the 1991 FEIR for the CVMP Traffic Policy Project (SCH# 89-005) and was not recommended as a viable alternative.

Alternative D—Transit Alternative

The Transit Alternative consists of doubling service on Monterey-Salinas Transit (MST) Line 24 to two buses an hour in each direction.

Currently, MST operates Line 24 from the Monterey Transit Center into Carmel Valley. This line operates on a 60-minute headway and has less than 10 passengers per hour. Service operates with 5,550 revenue service hours annually (Monterey Salinas Transit 2005). Applying a cost allocation of $78.50, the service costs an estimated $435,675 per year to operate (2006 Short Range Transit Plan, Monterey Salinas Transit). Assuming a farebox recovery of 10% (2005 Short Range Transit Plan, Monterey Salinas Transit), the cost of operating the service is $392,108 in 2006 dollars.

The doubling of this service to provide two buses an hour in each direction for the same time period would represent a cost similar to the $392,108. In addition, an optimistic projection of the 10-passenger per hour performance for this new service would result in only a decrease of eight vehicles (assuming a 1.2 vehicle occupancy) at peak hours. To operate a doubling of Line 24 service over a 23-year period would cost $9,018,484. Finally, a nexus of transit operations to apply to new development is a difficult legal nexus, so that additional funds from other sources would be needed to fund most, if not all, of this additional cost.

The operation of transit service generally requires sizeable subsidies from non-development sources. For example, the proposed Carmel Valley Grape Express is estimated to cost $174,000 a year (2006 Short Range Transit Plan, Monterey Salinas Transit).

Based on current low transit usage and the low-density of development throughout the Carmel Valley, while limited increased ridership might occur, it is highly unlikely this alternative would improve existing roadway deficiencies nor address future deficiencies. This alternative has been dismissed because, although it would avoid all construction impacts associated with roadway improvements, it would not achieve the project objectives to reduce LOS operational deficiencies in the program area.

Alternative E—Clustered Land Use Pattern Alternative

This alternative would include changing the CVMP land use pattern for future development from a dispersed low-density rural character to focus future development in one to three discrete areas: the mouth of the Carmel Valley, Mid-Valley, and/or the Carmel Valley Village.

This alternative might reduce the amount of in-Valley traffic as new development would be closer to areas of services. However, this alternative would not avoid substantial travel between areas within Carmel Valley or between Carmel Valley and areas outside of Carmel Valley, which would still necessitate the use of Carmel Valley Road. The level of services within any portion of the Valley are limited at present and thus substantial in-Valley and out of Valley travel due to new development is likely with this alternative.

One variant would be to focus all future development near the mouth of the Valley near Highway One. Since the most substantive traffic issues are east of Rancho San Carlos Road, focusing development to the west may reduce some of the generated traffic from new development as the multi-lane portion of Carmel Valley Road would provide access to Highway One and then on to other destinations.

In the Traffic Study, traffic conditions were studied with a more dispersed CVMP buildout pattern (Traffic Study Scenario A) and with CVMP buildout with approximately 50% of future residential growth in one higher density development (Rancho Canada Village) located in the lower Valley (Traffic Study Scenario B). Comparing these two conditions, resultant traffic conditions (before mitigation) are highly similar; however conditions along Segments 5, 6, and 7 are slightly worse with Alternative B. In either case, passing lanes would remedy the deficiencies. Thus, it seems unlikely that clustering development at the mouth of the Valley (which is what the Rancho Canada Village development would do), would avoid the need for traffic improvements to Carmel Valley Road. It is expected that evaluation of a focus of development in the Mid-Valley or Village area would result in a similar conclusion, due the fact that Carmel Valley Road is the only through access available through Carmel Valley.

While not specifically studied during the traffic study, with a similar overall level of development and continued travel, it is likely that this alternative would result in similar traffic impacts and thus require similar improvements as the proposed program. As such, this alternative was dismissed from further analysis as it appears unlikely to meet the project objectives without traffic improvements of its own and would not avoid any significant impacts of the proposed program.

Alternative F—Regional Improvements Alternative

This alternative would include regional traffic improvements (such as to Highway 101 or Highway 68) instead of improvements to Carmel Valley Road. DKS tested the impact of additional lanes on US 101 and SR 68 and determined

that traffic diversion was not great enough to warrant a change in forecast volumes or forecasted traffic deficiencies in Carmel Valley. Thus, this alternative would not meet the project objectives.

Alternative G—Policy Change Alternative

The current LOS standards for Carmel Valley Road operations are as follows:

- Holman Road to Ford Road—LOS C;
- Ford Road to Rancho San Carlos Road—LOS D;
- Rancho San Carlos Road to Carmel Ranch Boulevard—LOS C; and
- Carmel Rancho Boulevard to SR1—LOS E.

This alternative would change the LOS Standard for Carmel Valley Road to either LOS D or LOS E.

If the LOS standard for Carmel Valley Road were changed to LOS D, then no significant impacts would be identified along Segment 3 (Esquiline Road to Ford Road), but segment operations along Segments 5, 6, and 7 would still be deficient at 2030 buildout.

If the LOS standard for Carmel Valley Road were changed to LOS E, then no significant traffic impacts would be identified.

This alternative would allow for buildout of the CVMP, would avoid the need for additional passing lanes, but would allow unacceptable traffic conditions along Segments 5, 6, and 7, which would be inconsistent with the CVMP. This alternative does not meet the project objectives.

Chapter 6
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Chapter 7
Report Preparation

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